Management's Incentives to Avoid Negative Earnings Surprises

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ABSTRACT: Recent reports in the business press allege that managers take actions to avoid negative earnings surprises. I hypothesize that certain firm characteristics are associated with greater incentives to avoid negative surprises. I find that firms with higher transient institutional ownership, greater reliance on implicit claims with their stakeholders, and higher value-relevance of earnings are more likely to meet or exceed expectations at the earnings announcement.

I also examine whether firms manage earnings upward or guide analysts' forecasts downward to avoid missing expectations at the earnings announcement. I examine the relation between firm characteristics and the probability (conditional on meeting analysts' expectations) of having (1) positive abnormal accruals, and (2) forecasts that are lower than expected (using a model of prior earnings changes). Overall, the results suggest that both mechanisms play a role in avoiding negative earnings surprises.

Keywords: financial analysts; forecast guidance; earnings management; forecast bias; financial reporting incentives.

Data Availability: Data are commercially available from the sources identified in the text.

After a particularly grim presentation by CEO Bill Gates and sales chief Steve Ballmer at an analysts’ meeting two years ago, Goldman Sachs analyst Rick Sherlund ran into the pair outside and said, “Congratulations. You guys scared the hell out of people.” Their response? “They gave each other a high five,” Sherlund recalls. (Fox 1997)
I. INTRODUCTION

Recent articles in the business press suggest that managers of some firms place great importance on meeting or exceeding analysts’ expectations, which they achieve either by using their discretion over reported earnings to meet expectations (earnings management) or by guiding analysts’ earnings forecasts downward to improve their firms’ chances of meeting or beating the forecast when earnings are announced (forecast guidance). Although the academic literature recognizes earnings management more commonly than forecast guidance as a mechanism for achieving specific reporting goals, the business press often refers to forecast guidance:

- A growth stock strategist states, “[m]anagement tries to be conservative in its earnings guidance because of how severely stocks are punished when earnings disappoint” (Ip 1997b).
- The head of quantitative research at Merrill Lynch observes, “Investor-relations people have been making sure the hurdle of expectations remains low so their companies can clear it easily” (McGee 1997).
- “As is the custom late in a quarter, companies have been jawboning analysts’ estimates down to be sure the companies at least meet or exceed the consensus figure” (Bleakley 1997).
- “Companies increasingly are talking down their profit prospects to Wall Street analysts, thereby lowering expectations” (Vickers 1999).

Recent academic studies find evidence consistent with managers taking actions to avoid negative “bad news” earnings surprises (Payne and Robb 2000; Brown 2001; Burgstahler and Eames 2001). Moreover, Skinner and Sloan (2001) find that the stock market reaction to negative earnings surprises tends to be large and asymmetric, particularly for growth stocks, suggesting a high cost to missing analysts’ expectations. These findings, as well as the anecdotes from the business press, suggest that managers perceive benefits from managing earnings or guiding forecasts to avoid negative earning surprises. In the case of earnings management, managers must implicitly believe that users either are unable to detect earnings manipulations or do not find it cost effective to do so. In the case of guiding forecasts, managers must believe that negative surprises at the earnings announcement are more costly than an initially lower forecast. Whether managers’ perceptions are, in fact, true, the prior findings and anecdotal reports raise the following question: What factors influence managers to take actions to avoid negative earnings surprises? This study explores these incentives and the mechanisms, earnings management, and forecast guidance, through which managers achieve this goal.

I test a number of hypotheses about managers’ incentives to avoid negative earnings surprises by examining the association between proxies for these incentives and the probability that the firm meets or beats analysts’ forecasts at the earnings announcement. As predicted, the results suggest that firms with the following characteristics are more likely to meet or exceed analysts’ expectations: (1) higher transient institutional ownership; (2) greater reliance on implicit claims with their stakeholders; and (3) greater value-relevance of earnings. These associations exist even after controlling for other factors associated with the probability of meeting or exceeding analysts’ expectations, including the seasonal change in earnings, the growth in industrial production, firm size, and the magnitude of the initial forecast error.

I also examine the mechanisms managers use to avoid negative surprises. I measure abnormal accruals using the modified Jones model (Dechow et al. 1995). I also develop a
measure of forecast guidance by modeling an expected forecast based on prior earnings changes and cumulative returns during the year, and then comparing this expected forecast to the consensus analyst forecast. If firms use their influence to keep expectations low, then I expect the published consensus forecast to be lower than the forecast produced by the model. I then examine the relation between firm characteristics and the probability (conditional on meeting analysts’ expectations) of (1) managing earnings upward and (2) guiding forecasts downward. The results suggest that firms with higher transient institutional ownership are more likely both to manage earnings upward and to guide forecasts downward, and that firms with consistent patterns of prior losses appear less likely to engage in either behavior. Firms with a greater reliance on implicit claims with their stakeholders, and those in industries in which earnings are highly value-relevant, exhibit evidence of guiding forecasts downward but not of managing earnings upward, whereas high-growth firms appear to manage earnings upward but not guide forecasts downward. Overall, the results suggest that both mechanisms play a role in avoiding negative earnings surprises.

This paper contributes to the literature in a number of ways. First, this study is among the first to recognize that managers may guide forecasts downward to avoid reporting negative earnings surprises. Prior studies have examined the effect of management’s public forecasts on analysts’ forecast revisions (Baginski and Hassell 1990; Williams 1996; Hansen and Noe 1999). However, using only management’s public disclosures to investigate downward guidance does not capture the effects on analysts’ forecasts of any guidance provided in informal, private conversations. This paper examines forecast guidance by comparing actual forecasts to a measure of expected forecasts in an attempt to better capture any informal guidance managers provide to analysts. The perception that managers often provide informal guidance was at least partially responsible for the SEC’s recent passage of Regulation Fair Disclosure (Reg FD). If firms rely on guidance to avoid negative earnings surprises, then the new disclosure rule may diminish a firm’s ability to avoid such surprises. The results of this study (conducted prior to the passage of Reg FD) provide insights into the types of firms most likely to be hurt by any inability to provide guidance in this new regulatory environment.

Second, this paper provides further evidence on cross-sectional differences in incentives to avoid negative earnings surprises. Evidence on the incentives for managers to bias either reported earnings or analysts’ forecasts (or both) could have implications for studies that test market reactions to earnings announcements. For example, if the market adjusts for perceived downward guidance in analysts’ forecasts when forming its expectations, then associations between market reactions and forecast errors based on published forecasts may be diminished.

Finally, this study contributes to the literature that investigates bias in analysts’ forecasts. Earlier studies, which generally found an optimistic bias in analysts’ forecasts, focused on incentives for analysts to bias their forecasts (Francis and Philbrick 1993; Lin and

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1. Ajinkya and Gift (1984), King et al. (1990), and Bamber and Cheon (1998) all recognize “private disclosure through analysts” as an alternative venue for forecast disclosure, but do not directly investigate this venue. Bamber and Cheon (1998) investigate analyst meetings as a disclosure venue; such meetings, although still a public disclosure mechanism, come closer to the analyst guidance investigated in this paper. The authors’ purpose, however, was not to investigate the effect of these disclosures on analysts’ forecast errors.

2. The recent advent of “whisper forecasts” (unofficial forecasts passed among traders or on the Internet before earnings announcements) appears to be at least partially attributable to downward guidance in analysts’ published forecasts (Bagnoli et al. 1999).
McNichols 1998). In contrast to these studies, which implicitly assumed that managers prefer optimistic forecasts, this study directly explores the role managers' incentives play in guiding analysts' forecasts, and provides evidence consistent with anecdotal reports suggesting that some managers prefer lower forecasts to avoid negative surprises when the firm announces earnings.

In the next section, I discuss the related literature and provide descriptive evidence on the incentive to avoid negative earnings surprises. Section III explores possible incentives for managers to take actions to avoid negative surprises. Section IV describes the research design and provides descriptive statistics. Evidence of an association between the hypothesized incentives and avoiding negative surprises appears in Section V. In Section VI, I describe the approach employed to distinguish earnings management from forecast guidance and present evidence on the extent to which each mechanism is associated with the hypothesized incentives. Concluding remarks and suggestions for future research appear in Section VII.

II. BACKGROUND

Prior and Concurrent Research

Managers have strong incentives to avoid negative earnings surprises because such surprises generally lead to negative price revisions (Brown et al. 1987) and overall negative publicity for the firm. In addition, a recent study by Skinner and Sloan (2001) suggests that the market response to earnings surprises is asymmetric—the absolute magnitude of the price response to negative surprises significantly exceeds the price response to positive surprises, particularly for high-growth firms.

Evidence from recent empirical work is consistent with managers taking actions to avoid these negative earnings surprises. Burgstahler and Eames (2001) find in the distribution of analysts' forecast errors a larger-than-expected proportion (assuming a smooth distribution) of zero and small positive forecast errors. Brown's (2001) evidence of an overall increase in the percent of zero and positive forecast errors over time is consistent with managers taking actions to avoid negative earnings surprises (assuming the incentive to avoid negative earning surprises has increased over time). Richardson et al. (1999) also provide evidence of a temporal decline in the extent to which actual earnings fall short of analysts' expectations (i.e., analyst optimism).

Managers have two mechanisms for avoiding negative earnings surprises—they can manage earnings upward if unmanaged earnings fall short of expectations or they can guide analysts' expectations downward to avoid overly optimistic forecasts. Both mechanisms entail costs. Managing earnings is difficult because auditors and boards of directors scrutinize questionable accounting practices. Moreover, because accruals reverse in subsequent periods, managers are unlikely to be able to use abnormal accruals to continually increase earnings above expectations every period. Guiding analysts' forecasts downward requires revising current expectations downward if initial forecasts are too high, which could cause a negative stock price reaction at the forecast revision date. Guiding expectations early on to keep them at a "beatable" level is also costly to the extent that it leads to lower stock prices for an extended period of time. For either mechanism to be beneficial, the cost of a negative earnings surprise (e.g., negative stock price reactions or negative publicity for the

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firm at the earnings announcement date) must exceed the cost of managing earnings (e.g., reputation costs) or the cost of an initially lower forecast (e.g., lower initial stock prices).

Evidence from prior and concurrent studies is consistent with managers managing earnings to avoid missing analysts’ expectations. Payne and Robb (2000) find that firms with premanaged earnings below analysts’ expectations have greater positive abnormal accruals. Burgstahler and Eames (2001) find that firm-years in the zero-forecast-error category exhibit more positive earnings management than firm-years in the adjacent categories. Both studies conclude that managers manipulate accruals to avoid negative earnings surprises, but neither explores cross-sectional differences in managers’ incentives to avoid negative surprises.

Although a number of studies explore managers’ incentives to manage reported earnings to meet various reporting goals, few studies have considered the incentives for managers to lower expectations to avoid negative earnings surprises. In their sample of firms that preannounce earnings, Soffer et al. (2000) find that the market considers the majority of preannouncements bad news, but the majority of earnings announcements positive or neutral—suggesting that some firms preannounce bad news, but then reveal positive surprises at the earnings announcement. However, using only the firm’s public disclosures to investigate managers’ guidance of analysts does not capture the effects of any guidance managers provide privately to analysts. Burgstahler and Eames (2001) find the revision of forecasts from the beginning to the end of the year is more negative for firm-years in the zero-forecast-error category than in adjacent categories, suggesting that managers guide forecasts downward when doing so will allow them to meet analysts’ exact expectations. While the evidence from these studies is consistent with downward forecast guidance, neither study explores cross-sectional differences in the propensity to engage in guidance.

This paper contributes to this emerging literature by exploring cross-sectional differences in the propensity to avoid negative earnings surprises. In addition, I investigate the cross-sectional differences in two mechanisms managers likely use to avoid earnings disappointments: earnings management and forecast guidance. Finally, I employ a new technique to investigate forecast guidance.

Descriptive Evidence of the Incentive to Avoid Negative Surprises

The majority of financial press accounts of managers’ downward guidance have appeared in the last few years; therefore, the proportion of quarters with positive earnings surprises is likely to have increased in recent years. Using Zacks earnings surprise file, I compute the percentage of firm-quarters where actual reported earnings ($E'$) meets or exceeds the consensus forecast outstanding at the earnings announcement ($F'$) for each year from 1985 to 1997. Table 1 reports the results of this analysis. Similar to the findings in Brown (2001) and Richardson et al. (1999), both of which are based on data from

Prior research is consistent with negative earnings surprises being more costly than negative forecast revisions. Skinner and Sloan (2001) show that the magnitude of the market response to earnings surprises is greater for negative surprises than for positive ones. On the contrary, no such evidence of an asymmetry exists for forecast revisions: Sticket (1991) finds no difference in the absolute magnitude of the returns following forecast revisions in the top 5 percent vs. the bottom 5 percent of revisions. However, given the different sample periods these studies used, further work is necessary before any conclusions are possible.

I use the Zacks-provided consensus because the forecast and actual earnings are provided to three decimal places (as opposed to the two decimal places used for the individual analyst estimates), thereby reducing potential measurement error for firms with multiple stock splits. I also eliminate forecast errors if both the forecast and actual earnings equals zero in the database (less than 1 percent of the sample). I assess the extent to which stale forecasts affect the consensus by comparing the absolute forecast error derived from an independently constructed consensus (based on forecasts made within the last 90 days) to the Zacks-provided consensus. The Zacks-provided consensus has a smaller mean absolute forecast error, suggesting staleness is not a significant problem.
<table>
<thead>
<tr>
<th>Year</th>
<th>% Meeting Expectations&lt;sup&gt;a&lt;/sup&gt;</th>
<th>% Positive Changes in Earnings&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>41.0</td>
<td>53.8</td>
</tr>
<tr>
<td>1986</td>
<td>44.2</td>
<td>59.9</td>
</tr>
<tr>
<td>1987</td>
<td>47.5</td>
<td>69.5</td>
</tr>
<tr>
<td>1988</td>
<td>50.9</td>
<td>71.9</td>
</tr>
<tr>
<td>1989</td>
<td>44.5</td>
<td>60.9</td>
</tr>
<tr>
<td>1990</td>
<td>42.6</td>
<td>56.7</td>
</tr>
<tr>
<td>1991</td>
<td>49.0</td>
<td>52.4</td>
</tr>
<tr>
<td>1992</td>
<td>54.8</td>
<td>64.1</td>
</tr>
<tr>
<td>1993</td>
<td>55.5</td>
<td>63.9</td>
</tr>
<tr>
<td>1994</td>
<td>62.0</td>
<td>68.5</td>
</tr>
<tr>
<td>1995</td>
<td>61.8</td>
<td>65.0</td>
</tr>
<tr>
<td>1996</td>
<td>66.7</td>
<td>62.7</td>
</tr>
<tr>
<td>1997</td>
<td>70.1</td>
<td>63.7</td>
</tr>
</tbody>
</table>

Spearman Rank correlation<sup>c</sup>  
- **% Meeting Expectations**: 0.907  
- **% Positive Changes in Earnings**: 0.197  
- **p-value**: 0.001  

<sup>a</sup> Percent of firm-quarters in each year in which actual earnings met or exceeded the analyst consensus forecast outstanding at the earnings announcement (as reported in Zacks surprise file).  
<sup>b</sup> Percent of firm-quarters in each year in which earnings (quarterly Compustat item no. 8) exceeded the earnings in the same quarter one year prior.  
<sup>c</sup> Rank correlations are between the year and (1) percent of firm-quarters meeting or exceeding expectations and (2) the percent of firm-quarters with a positive seasonal change in earnings.

I/B/E/S, the percentage of quarters in which earnings met or exceeded analysts' expectations has increased over time (Spearman rank correlation = 0.90, p < 0.001), consistent with growing emphasis on avoiding negative earnings surprises.<sup>6</sup>  

<sup>6</sup> A recent working paper by Abarbanell and Lehavy (2000) suggests that the trend in the tendency to meet or beat analysts' forecasts may be database-driven and not a true change in behavior. However, the results reported here are similar to the results reported in Brown (2001), who uses I/B/E/S data. In addition, the results are inferentially similar (r = 0.90, p < 0.001), if I compute forecast errors based on Compustat-reported earnings per share before extraordinary items (quarterly data item no. 19). I use the Zacks-reported earnings per share (rather than the Compustat earnings per share) in computing forecast errors because analysts often forecast a number different from bottom-line earnings (generally earnings before nonrecurring/special items). If the benchmark managers are concerned about analysts' forecasts, then it seems appropriate to judge the success of their actions using the same definition of earnings that the analysts are forecasting.
The increase is unlikely to be due to analysts underestimating the effect of positive macroeconomic events on firm profits. Table 1 shows that there is no significant trend over time in the percent of quarters with increases in earnings per share before extraordinary items (quarterly Compustat data item no. 8) from the same quarter in the previous year (i.e., the seasonal change in earnings). Thus, the tendency to meet or exceed analysts’ consensus forecasts does not appear to result from a general increase in earnings performance that analysts failed to anticipate. Figure 1 plots the trend in these two percentages, which appear to move together in the first half of the sample period. From approximately 1991 onward, however, the percent of quarters that meet or exceed analysts’ expectations has increased steadily, whereas the percent of quarters with increases in earnings has not.

The foregoing evidence is consistent with anecdotal reports suggesting managers take actions to avoid negative earnings surprises, particularly in recent years. In the next section I discuss firm characteristics that are likely associated with the incentive to meet or exceed analysts’ forecasts.

III. HYPOTHESIS DEVELOPMENT

Institutional Ownership

A manager is likely concerned that a negative earnings surprise will lead to significantly lower stock prices and adversely affect his or her performance evaluation. Puffer and Weintrop (1991), for example, find that the probability of CEO turnover increases with the shortfall of actual earnings from analysts’ expectations. To the extent institutional investors overemphasize near-term profits (Porter 1992; Business Week 1987), managers of firms with higher institutional ownership likely perceive greater costs to missing analysts’ forecasts. Frequently cited reasons for institutional investors’ focus on current earnings include pressure for near-term portfolio performance; difficulty in analyzing all the stocks in a highly diversified portfolio; and the need for a defensible measure for trading due to their fiduciary responsibilities (Eames 1995). Because earnings surprises are readily available from a number of sources (e.g., First Call, Zacks, I/B/E/S), they are a simple, defensible heuristic on which to base trades, and institutional investors likely react strongly to negative earnings surprises. Lang and McNichols (1997) present evidence consistent with institutional investors trading based on earnings surprises. Moreover, because the business press focuses more heavily on earnings surprises than on intervening forecast revisions, the former is more likely than the latter to improve the appearance of portfolios at quarter-end, giving managers of firms with greater institutional ownership an incentive to guide forecasts downward to avoid negative earnings surprises. The empirical, survey, and anecdotal evidence suggests that managers of firms with higher institutional ownership have greater incentives both to manage earnings and to guide forecasts, leading to the following hypothesis:

**H1:** Firms with higher institutional ownership are more likely to take actions to avoid negative earnings surprises.

To test this hypothesis, I use the percent of total shares owned by institutions (%INST) as reported in the Spectrum database, averaged over the four preceding quarters. Table 2 summarizes the study’s hypotheses and proxy variables.

Alternatively, one might argue that institutional investors are more sophisticated, and are therefore more likely to see through accounting manipulations and managerial forecast guidance. However, Bushee (1998) finds that a high proportion of ownership by institutions exhibiting “transient” behavior (i.e., institutions with high portfolio turnover that engage in momentum-trading strategies) increases the probability that managers cut research and
development costs to boost earnings. Because incentives to avoid negative earnings surprises may differ depending on the type of institutional ownership, I also report results after partitioning the percent of institutional ownership into the percent held by “transient” (%TRAN) and “nontransient” institutions (%NONTRAN).7

Reliance on Implicit Claims with Stakeholders

A firm’s other stakeholders—customers, employees, suppliers, and so forth—are also consumers of its financial information. Bowen et al. (1995) (hereafter BDS) argue that a firm’s financial image influences stakeholders’ assessments of its ability to fulfill its implied commitments, leading to more favorable terms of trade with these stakeholders. BDS conclude that managers’ incentives to choose income-increasing accounting methods (to enhance the firm’s financial image) is strongest for firms that rely heavily on implicit claims with their stakeholders.

In judging a firm’s financial performance, these stakeholders are likely to react more strongly to earnings announcements than to analysts’ initial forecasts because they either

7 I thank Brian Bushee for providing his classification scheme to conduct this analysis.
<table>
<thead>
<tr>
<th>Construct</th>
<th>Proxy</th>
<th>Variable Name</th>
<th>Expected Relation with MEET&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incentive variables:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1 Institutional ownership</td>
<td>Percent of shares held by institutions (reported on Spectrum)</td>
<td>%INST</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Percent of shares held by transient institutions (as defined in Bushee [1998])</td>
<td>%TRAN</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Percent of shares held by non transient (quasi-indexers and dedicated) institutions-as defined in Bushee [1998])</td>
<td>%NONTRAN</td>
<td>Positive</td>
</tr>
<tr>
<td>H2 Reliance on implicit claims</td>
<td>Dummy variable indicating membership in durable goods industry (SICs 150–179, 245, 250–259, 283, 301, 324–399)</td>
<td>DUR</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>R&amp;D ÷ Assets (Compustat item #4 ÷ item #44)</td>
<td>R&amp;D</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Measure of labor intensity (1 – (PPE ÷ Gross Assets)):</td>
<td>LABOR</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>1 – (Compustat item #118 ÷ (item #44 + item #41))</td>
<td>ICLAIM</td>
<td>Positive</td>
</tr>
<tr>
<td>H3 Value-relevance of earnings</td>
<td>Dummy variable indicating losses (Quarterly Compustat item #8 less than zero) in each of the four most recent quarters (i.e., quarters t–1 to t–5)</td>
<td>LOSS</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td>Decile rank of R&lt;sup&gt;2&lt;/sup&gt; from industry-specific yearly regressions of cumulative excess returns on seasonal change in earnings</td>
<td>EARNRET</td>
<td>Positive</td>
</tr>
<tr>
<td>H4 Growth prospects</td>
<td>Consensus long-term growth forecast at the beginning of the year (reported in Zacks consensus estimate history)</td>
<td>LTG</td>
<td>Positive</td>
</tr>
<tr>
<td>H5 Litigation risk</td>
<td>Dummy variable indicating membership in high-risk industry (SICs 2833–2836, 3570–3577, 7370–7374, 3600–3674, 5200–5961)</td>
<td>LIT</td>
<td>Positive</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Construct</th>
<th>Proxy</th>
<th>Variable Name</th>
<th>Expected Relation with MEET&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Variables:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in earnings</td>
<td>Dummy variable indicating positive change in earnings from the same quarter in the prior year (Compustat item #8)</td>
<td>POSUE</td>
<td>Positive</td>
</tr>
<tr>
<td>Macroeconomic growth</td>
<td>Average annual growth in industrial production over prior 12 months</td>
<td>INDP&lt;sup&gt;o&lt;/sup&gt;R&lt;sup&gt;o&lt;/sup&gt;D&lt;sup&gt;o&lt;/sup&gt;</td>
<td>Positive</td>
</tr>
<tr>
<td>Firm size</td>
<td>Log of market value of equity (Compustat item #61 × item #14)</td>
<td>LOGM&lt;sup&gt;o&lt;/sup&gt;V&lt;sup&gt;o&lt;/sup&gt;</td>
<td>Positive</td>
</tr>
<tr>
<td>Uncertainty in forecasting</td>
<td>Absolute value of the difference between reported earnings and the initial consensus forecast (measured as the first forecast each analyst made after the prior year's earnings announcement), deflated by price at the end of the prior year (Quarterly Compustat item #14)</td>
<td></td>
<td>Negative</td>
</tr>
</tbody>
</table>

<sup>a</sup> MEET is the probability that actual earnings meet or exceed the analyst consensus forecast outstanding at the earnings announcement date (as reported in Zacks surprise file).
have limited ability or do not find it cost effective to fully process all information about the firm. Moreover, the financial press discusses earnings announcements more prominently than initial forecasts, making the comparison of actual earnings to analysts’ forecasts the more salient information on which to judge firm performance. As a result, avoiding negative surprises at the earnings announcement by either managing earnings or guiding forecasts likely yields more optimal terms of trade with stakeholders. Thus, I expect that:

**H2:** Firms with greater reliance on implicit claims with stakeholders are more likely to take actions to avoid negative earnings surprises.

I test this hypothesis using the three proxy variables from BDS with the highest explanatory power in their 1993 sample period:

- Membership in a durable goods industry (DUR), using the same SIC codes BDS used: 150–179, 245, 250–259, 283, 301, and 324–399,
- Research and Development expenditures (R&D, quarterly Compustat item no. 4) scaled by total assets (quarterly Compustat item no. 44), and
- A measure of labor intensity (LABOR) equal to 1 minus the ratio of gross property, plant, and equipment (quarterly Compustat item no. 118) to firm size (measured as total gross assets, quarterly Compustat item no. 44 + item no. 41).

I presume firms with higher values for each of these variables rely more on implicit claims with their stakeholders; as a result, I expect all three variables to be positively related to the tendency to avoid negative earnings surprises. As with %INST, I average the value of these variables over the four preceding quarters.

**Value-Relevance of Earnings**

A firm’s economic circumstances are also likely to influence its managers’ perceptions of the benefits of avoiding negative surprises at the earnings announcement. For example, if the value-relevance of a firm’s earnings is low (i.e., earnings are a poor indicator of future cash flows and firm value), then shareholders likely react less strongly to negative earnings surprises; hence, managers of such firms are likely to be less concerned about failing to meet analysts’ expectations:

**H3:** Firms with low value-relevance of earnings are less likely to take actions to avoid negative earnings surprises.

To test this hypothesis I use two measures of value-relevance. The first is a dummy variable indicating firms that report losses before extraordinary items (quarterly Compustat item no. 8) in each of the last four quarters, $t - 1$ to $t - 5$ (LOSS). Prior studies demonstrate a lower association between returns and earnings (Hayn 1995) for loss firms. Prior research

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8 The level of implicit claims with stakeholders is inherently unobservable and any proxies are subject to alternative interpretations. For example, because high-technology firms often invest heavily in R&D and also frequently use employee stock options to compensate employees, it is possible that R&D expenditures are related to the use of stock options. However, including a variable to capture the extent of stock option use (Compustat item no. 215: Common shares reserved for conversion – stock options) does not affect the results and the coefficient on this variable is not significant.

9 Because firms do not always report R&D expenditures on a quarterly basis, I use the annual Compustat tapes to fill in quarters with missing observations. Specifically, if any quarters in a given fiscal year have missing values indicating that the firm reported the values on an annual basis only, then I include one-fourth of the annual value reported on the annual Compustat tapes as the quarterly amount of R&D. In addition, following BDS, I set R&D to zero if the variable is not reported.
also suggests that meeting or beating analysts' expectations is less important for firms that incur losses (Degeorge et al. 1999) and that analysts' forecasts are more optimistic for loss firms (Brown 2001). In contrast to these prior studies, I suggest that an underlying firm characteristic (low value-relevance of earnings) explains the association between losses and the tendency to avoid negative surprises. Consequently, I do not measure the existence of a loss in the same quarter as the forecast error, but rather use a lagged measure of consistent losses. I expect a negative relation between LOSS and the tendency to avoid negative earnings surprises.

The second measure of value-relevance of earnings, an industry-specific $R^2$ from a regression of 12-month returns on earnings, captures industry-specific differences in the value-relevance of earnings. Prior studies suggest the value-relevance of earnings may be lower in certain industries, particularly high-technology industries (Amir and Lev 1996; Franzen 2000). To compute this measure, I regress excess daily returns (cumulated from three days after the quarter $t - 4$ earnings announcement to three days after the quarter $t$ earnings announcement) on the change in earnings per share from quarter $t - 4$ to quarter $t$, scaled by price per share at the end of quarter $t - 4$. I run regressions by year for each four-digit SIC code. Given the potential for measurement error with this variable, I use the yearly decile rank of the industry's $R^2$ measure as the proxy for value relevance (EARNRET). I expect a positive relation between EARNRET and the tendency to avoid negative earnings surprises.

**Long-Term Growth Prospects**

Managers of high-growth firms likely have greater incentives to avoid missing earnings expectations. Collins and Kothari (1989) show the market reaction to earnings announcements is greater for firms with high-growth opportunities. In addition, Skinner and Sloan (2001) find that the asymmetry in the market response to positive vs. negative earnings surprises is stronger for high-growth than for low-growth firms. Thus, managers of high-growth firms are likely to have strong incentives to avoid negative surprises. Moreover, a firm with high long-term growth forecasts may be able to maintain a "buy" recommendation from analysts despite a lower initial short-horizon forecast because analysts' stock recommendations are more closely related to the firm's long-term growth, rather than to its short-horizon forecasts (Bandyopadhyay et al. 1995). Therefore, keeping expectations low to avoid negative earnings surprises is likely to be less costly for high-growth firms:

**H4:** Firms with high-growth prospects are more likely to take actions to avoid negative earnings surprises.

To test this hypothesis, I use the consensus long-term growth forecast outstanding at the end of quarter $t - 1$ as reported in Zacks consensus estimate history (LTG).

**Litigation Risk**

A sudden price drop can also precipitate shareholder litigation (Tucker 1991; Alexander 1991); therefore, managers of firms with higher risk of shareholder lawsuits likely have greater incentive to avoid negative earnings surprises. In addition, because liability hinges on managers misleading the market (e.g., through unduly optimistic disclosures or failure to disclose promptly material adverse information), keeping analysts' expectations low diminishes the merits of the plaintiffs' case should a suit be filed. Skinner (1994, 1997) argues similarly that the incentive to preempt via voluntary disclosure is greater for adverse than for favorable earnings news. This discussion suggests the following hypothesis:
H5: Firms with higher ex ante litigation risk are more likely to take actions to avoid negative earnings surprises.

Consistent with prior research (Francis et al. 1994; Soffer et al. 2000; Ali and Kallapur 2001), I use an industry dummy variable to identify firms in high-risk industries (LIT): SIC codes 2833–2836 (biotechnology), 3570–3577 and 7370–7374 (computers), 3600–3674 (electronics), and 5200–5961 (retailing). I use an industry indicator rather than measures such as price volatility to obtain a measure of ex ante litigation risk that is unaffected by managers’ prior efforts to avoid negative surprises (price volatility is likely affected by these actions).

IV. RESEARCH DESIGN AND DESCRIPTIVE STATISTICS

I classify firm-quarter observations as either meeting or exceeding expectations (MEET = 1) if reported earnings meet or exceed the forecast outstanding at the earnings announcement ($E^{REP} \geq E^{EA}$) or as not meeting expectations (MEET = 0) if reported earnings fall short of expectations ($E^{REP} < E^{EA}$). Because the results in Table 1 suggest an increase in the tendency to avoid negative surprises in recent years, my tests concentrate on the later years in the sample, specifically, 1993 to 1997. In addition, firms in regulated industries likely have different incentives than those in nonregulated industries; therefore, I exclude financial institutions (SIC codes 6000–6999), utilities (SIC codes 4800–4999), and other quasi-regulated industries (SIC codes 4000–4499, and 8000 and higher). The final sample consists of firm-quarters from nonregulated industries with the data required to measure the proxy and control variables. As outlined in Table 2, the variables require data from the Zacks, Compustat, Spectrum, and CRSP databases.

Control Variables

I also include four control variables, two to control for unexpected contemporaneous shocks to earnings, one to control for firm size, and one to control for uncertainty in the forecasting environment. Unexpected macroeconomic shocks affect earnings surprises (O’Brien 1988, 1994); I control for these shocks by including both a firm-specific variable and a macroeconomic variable. A dummy variable (POSUE) indicates firm-quarters with a positive seasonal change in earnings before extraordinary items (quarterly Compustat item no. 8). This variable controls for the relation between the change in earnings and the forecast error. Because O’Brien (1994) finds a positive relation between growth in industrial production and analysts’ forecast errors, I also control for the average annual growth in industrial production calculated over the 12 months ending at quarter t (INDPROD).

Prior research also suggests that larger firms have less optimistic biases in analysts’ forecasts (Brous and Kini 1993; Brown 1997; Das et al. 1998). Thus, I control for size using the log of the market value of equity (LOGMV, quarterly Compustat item no. 61 $\times$ item no. 14).

The time-trend analysis presented in Table 1 is inferentially similar using a sample that excludes these regulated industries.
Finally, I control for uncertainty in the forecasting environment because it is likely more difficult for managers to guide analysts' forecasts when uncertainty is high. I include the absolute value of the initial forecast error, deflated by price at the end of the prior year ($|FE| = \text{abs}(E^{\text{REP}} - F^{\text{INIT}})/\text{quarterly Compustat item no. 14}$) as a measure of forecasting uncertainty. I compute the initial forecast ($F^{\text{INIT}}$) using the first forecast each analyst made within 90 days after the earnings announcement from the same quarter of the previous year (i.e., approximately nine months before the end of the quarter) using Zacks individual estimate history file.

Descriptive Statistics

Descriptive statistics on the dependent, incentive, and control variables appear in Table 3. The average for the dependent variable (MEET) indicates that firms met or exceeded analysts' expectations in approximately 65 percent of the firm-quarters in the sample. Approximately 45 percent of the firm-quarters in the sample are from firms in durable goods industries and 36 percent from firms in high-litigation-risk industries. Only a small portion of the firm-quarters in the sample (5 percent) is from firms with a consistent history of

<table>
<thead>
<tr>
<th>Variable$^a$</th>
<th>n</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>1st Quartile</th>
<th>Median</th>
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<td></td>
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<td>0.476</td>
<td>0.000</td>
<td>1.000</td>
<td>1.000</td>
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<td>Proxies for Incentives to Avoid Negative Earnings Surprises:</td>
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<td></td>
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<td>0.222</td>
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<td>0.000</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>R&amp;D</td>
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<td>0.024</td>
<td>0.000</td>
<td>0.002</td>
<td>0.017</td>
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<td>ICLAIM</td>
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<td>0.000</td>
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<td>4.000</td>
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<td>1.000</td>
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<td>$</td>
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<td>$</td>
<td>29,067</td>
<td>0.009</td>
<td>0.016</td>
<td>0.001</td>
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</tbody>
</table>

$^a$ MEET is a dichotomous variable equal to 1 if a firm's actual earnings meets or exceeds the analyst consensus forecast outstanding at the earnings announcement (as reported in Zacks surprise file), 0 otherwise. Table 2 defines the incentive and control variables. For descriptive purposes I present statistics on the actual, rather than the log, market value of equity (MV). For the remaining tables, I use the log of market value of equity (LOGMV).
prior losses. In addition, the sample firms are relatively large (mean market value of equity of $2.28 billion) with a somewhat higher percent of institutional ownership (45 percent) than reported in other studies (e.g., approximately 39 percent in Jiambalvo et al. [2001] and 36 percent in Bushee [2001]). This difference is likely due to an increase in institutional ownership over time (Gompers and Metrick 2001) as well as data requirements that bias the sample toward relatively larger firms. Finally, 66 percent of firm-quarters in the sample have a positive change in earnings relative to the same quarter of the prior year (POSUE), similar to the percent meeting or exceeding analysts’ expectations.

Table 4 presents a correlation matrix of all variables, with Pearson (Spearman) correlations below (above) the diagonal. The correlations between the dependent variable (MEET) and each of the incentive variables, presented in the first column/row, are all statistically significant in the predicted directions: %INST, DUR, R&D, LABOR, EARNRET, LTG, and LIT are all positively related to MEET, and LOSS is negatively related to MEET.11 Partitioning %INST into the percent held by transient (%TRAN) and nontransient institutions (%NONTRAN), I find both types of institutions are associated with a higher probability of meeting analysts’ expectations, although the correlation is stronger for transient institutions. While the correlations are all statistically significant, the magnitudes of many of the correlations are not particularly large. In addition, since all the control variables are significantly correlated with MEET (particularly POSUE and |FE|) it is important to control for these factors in tests of the incentive variables.

Among the incentive and control variables, many of the correlations are significant and several are above 0.3. Not surprisingly, the implicit claims variables DUR, RD, and LABOR are all positively correlated with one another. These variables are meant to proxy for essentially the same construct; therefore, I use factor analysis to reduce them to a single construct (ICLAIM) for the logit analysis conducted in the next subsection.12,13

Logit Regressions

I perform logit regressions modeling the probability that a firm meets or exceeds analysts’ forecasts at the earnings announcement:

\[
\text{Prob}(\text{MEET} = 1) = F(\beta_0 + \beta_1 \times \text{%INST}_i + \beta_2 \times \text{ICLAIM}_i + \beta_3 \times \text{LOSS}_i
\]

\[
+ \beta_4 \times \text{EARNRET}_i + \beta_5 \times \text{LTG}_i + \beta_6 \times \text{LIT}_i + \beta_7 \times \text{POSUE}_i
\]

\[
+ \beta_8 \times \text{INDPROD}_i + \beta_9 \times \text{LOGMV}_i + \beta_{10} \times \text{|FE}_i| + \epsilon_i) \quad (1)
\]

where:

\[
F(\beta'X) = \frac{e^{\beta'X}}{1 + e^{\beta'X}}
\]

11 Results of t-tests of differences in the means between the two groups (MEET = 1 vs. MEET = 0) are inferentially similar. I present the correlation results for simplicity.
12 I use the principal components method of factor analysis to reduce the three variables to a single construct (use of the common factor method produces essentially identical results). Retaining factors with eigenvalues greater than 1 (Hair et al. 1995) results in the retention of one factor, consistent with the assumption that the three factors proxy for a single construct. The final communality estimates (i.e., the correlation between the common factor and the individual variables) for DUR, RD, and LABOR are 0.560, 0.428, and 0.494, respectively, indicating that the common factor is basically a weighted average of the three variables (standardized).
13 I conducted collinearity diagnostics on the final model (i.e., the model using ICLAIM in place of DUR, RD, and LABOR), including variance inflation factors and condition indices (see Belsley et al. 1980) using an ordinary least squares (OLS) model. All variance inflation factors are less than 10 and condition indices are less than 30, suggesting collinearity is not a serious problem (Kennedy 1992).
<table>
<thead>
<tr>
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<th>INCENTIVE VARIABLES</th>
<th>CONTROL VARIABLES</th>
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</thead>
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<td>%INST</td>
</tr>
<tr>
<td>MEET</td>
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<td>0.11**</td>
</tr>
<tr>
<td>%INST</td>
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<td>%TRAN</td>
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<tr>
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<td>LABOR</td>
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<td>ICLAIM</td>
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</tr>
<tr>
<td>LOSS</td>
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</tr>
<tr>
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<tr>
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<td>LOGMV</td>
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<tr>
<td>[FE]</td>
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<td>-0.17**</td>
</tr>
</tbody>
</table>

* ** Significant at p < 0.05 and p < 0.01, respectively.
* Pearson correlations appear below the diagonal, Spearman correlations above it.
See Table 2 for variable definitions.
I also perform the logit regression replacing $\%\text{INST}$ with $\%\text{TRAN}$ and $\%\text{NONTRAN}$ to investigate whether the type of institutional ownership affects the incentive to avoid negative earnings surprises.

V. RESULTS: INCENTIVES FOR AVOIDING NEGATIVE SURPRISES

Results of the logit regressions appear in Table 5. Columns 3 through 5 present the results using $\%\text{INST}$ in the regression (Model 1), while columns 6 through 8 report results using $\%\text{TRAN}$ and $\%\text{NONTRAN}$ in place of $\%\text{INST}$ (Model 2). In the first model, the coefficient on $\%\text{INST}$ is positive and significant ($p < 0.001$), suggesting that firms with higher institutional ownership are more likely to meet or exceed expectations (consistent with H1). However, when I use $\%\text{TRAN}$ and $\%\text{NONTRAN}$ in place of $\%\text{INST}$, only the coefficient on $\%\text{TRAN}$ is significantly positive, suggesting that transient institutional ownership motivates managers to avoid negative earnings surprises but that nontransient institutional ownership does not.

The coefficient on ICLAIM is significantly positive in both models ($p < 0.001$), consistent with H2's prediction that managers have greater incentives to avoid negative surprises when reliance on implicit claims with stakeholders is greater. Consistent with the conjecture that firms with low value-relevance of earnings have less incentive to avoid negative earnings surprises (H3), firms with consistent prior losses (LOSS) are less likely to meet or exceed expectations, and firms in industries in which earnings are more value-relevant (EARNRET) are more likely to do so. These results hold for both specifications of the model ($p < 0.005$).

The significantly positive coefficient on LTG in Model 1 supports H4—firms with relatively higher long-term growth prospects appear more likely to avoid negative earnings surprises. However, in the model using $\%\text{TRAN}$ and $\%\text{NONTRAN}$ in place of $\%\text{INST}$, the coefficient on LTG is not significant. The correlations in Table 4 reveal that LTG is significantly positively associated with $\%\text{TRAN}$ and significantly negatively associated with $\%\text{NONTRAN}$. Thus, in the first model LTG may reflect transient institutional ownership; it may not be the presence of growth prospects that provides the incentive to avoid negative earnings surprises, but rather that firms with higher growth prospects have higher transient institutional ownership. Similar arguments may apply to litigation risk. Whereas Model 1 suggests that firms in highly litigious industries (LIT) are marginally more likely to meet or exceed analysts' expectations (supporting H5), the specification including $\%\text{TRAN}$ and $\%\text{NONTRAN}$ does not support this hypothesis.

Columns 5 and 8 report the marginal effects of each variable in the two models. The marginal effects are analogous to the slope coefficients in an OLS regression. The marginal effect for $\%\text{INST}$ in model 1, 0.087, when multiplied by the interquartile range (0.317 for this sample), suggests that moving from the first to the third quartile of $\%\text{INST}$ increases the probability of meeting or exceeding analysts' expectations by approximately 3 percent. In the second model, a similar analysis suggests that moving from the first to the third quartile of $\%\text{TRAN}$ increases the probability of meeting or exceeding analysts' expectations by 5 percent. The change in probabilities for ICLAIM and EARNRET are 3 percent and

---

14 An alternative proxy for growth prospects is the market-to-book ratio. Using the market-to-book ratio (MB) averaged over the prior four quarters (winsorized at the 1st and 99th percentile to reduce the effect of outliers) in place of LTG produces inferentially similar results.

15 I compute the marginal effects as $e^{\hat{\beta}'X}/(1 + e^{\hat{\beta}'X})$ where $\hat{\beta}'X$ is computed at the mean values of the independent variables (Greene 1993). Technically, one should calculate the marginal effect for dichotomous variables as the difference in probability when the variable is equal to 1 vs. 0, evaluated at the mean of the other variables. This procedure produces nearly identical values for the marginal effects as those produced using the above formula.
TABLE 5
Logit Analysis of the Probability of Meeting or Exceeding Analysts’ Expectations and the Incentives to Avoid Negative Earnings Surprises

Model 1:
\[
\text{Prob}(\text{MEET} = 1) = \frac{\text{e}^{\beta_0 + \beta_1\%\text{INST}_i + \beta_2\%\text{CLAIM}_i + \beta_3\text{LOSS}_i + \beta_4\text{EARNRET}_i + \beta_5\text{LTG}_i + \beta_6\%\text{POSUE}_i + \beta_7\%\text{INDPROD}_i + \beta_8\text{LOGMV}_i + \beta_9|\text{FE}|| + \epsilon_i)}{1 + \text{e}^{\beta_0 + \beta_1\%\text{INST}_i + \beta_2\%\text{CLAIM}_i + \beta_3\text{LOSS}_i + \beta_4\text{EARNRET}_i + \beta_5\text{LTG}_i + \beta_6\%\text{POSUE}_i + \beta_7\%\text{INDPROD}_i + \beta_8\text{LOGMV}_i + \beta_9|\text{FE}|| + \epsilon_i}}
\]

Model 2:
\[
\text{Prob}(\text{MEET} = 1) = \frac{\text{e}^{\gamma_0 + \gamma_1\%\text{TRAN}_i + \gamma_2\%\text{NONTRAN}_i + \gamma_3\%\text{CLAIM}_i + \gamma_4\text{LOSS}_i + \gamma_5\text{EARNRET}_i + \gamma_6\text{LTG}_i + \gamma_7\%\text{POSUE}_i + \gamma_8\%\text{INDPROD}_i + \gamma_9\text{LOGMV}_i + \gamma_{10}|\text{FE}|| + \epsilon_i)}{1 + \text{e}^{\gamma_0 + \gamma_1\%\text{TRAN}_i + \gamma_2\%\text{NONTRAN}_i + \gamma_3\%\text{CLAIM}_i + \gamma_4\text{LOSS}_i + \gamma_5\text{EARNRET}_i + \gamma_6\text{LTG}_i + \gamma_7\%\text{POSUE}_i + \gamma_8\%\text{INDPROD}_i + \gamma_9\text{LOGMV}_i + \gamma_{10}|\text{FE}|| + \epsilon_i}}
\]

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<tr>
<th>Variable</th>
<th>Predicted Marginal</th>
<th>Marginal</th>
<th>Predicted Marginal</th>
<th>Marginal</th>
</tr>
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<td>-0.964</td>
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Incentives for Avoiding Negative Surprises:

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<tr>
<th>%INST (H1)</th>
<th>%TRAN</th>
<th>%NONTRAN</th>
<th>%CLAIM (H2)</th>
<th>LOSS (H3)</th>
<th>EARNRET (H3)</th>
<th>LTG (H4)</th>
<th>LIT (H5)</th>
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<tr>
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<td>0.001</td>
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<td>0.004</td>
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<tr>
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<td>0.002</td>
<td>0.231</td>
<td>0.000</td>
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<td>0.964</td>
<td>-0.039</td>
<td>0.396</td>
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Control Variables:

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<th>Marginal</th>
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</thead>
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<td>Sign</td>
<td>Coefficient</td>
<td>p-value</td>
<td>Effect</td>
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<td>0.294</td>
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</tr>
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<td>0.000</td>
<td>0.007</td>
</tr>
<tr>
<td>[FE]</td>
<td>-</td>
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<td>-6.004</td>
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Log Likelihood: -12,665.79
Chi-square: 3,545.24
p-value: 0.001

No. of Observations:

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<th>Total</th>
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</thead>
<tbody>
<tr>
<td>15,235</td>
<td>7,520</td>
<td>22,755</td>
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</table>

*The dependent variable equals 1 if a firm’s actual earnings meets or exceeds the analyst consensus forecast outstanding at the earnings announcement (as reported in Zacks surprise file), 0 otherwise.

b See Table 2 for variable definitions.

c p-values are one-tailed.

d The marginal effects are computed as $e^{\beta'X} / (1 + e^{\beta'X})^2$, where $\beta'X$ is computed at the mean values of $X$. 
1 percent, respectively, in both specifications of the model. Finally, the probability of meeting or exceeding analysts’ expectations at the earnings announcement is approximately 6 percent (5 percent) lower in Model 1 (Model 2) for firms with four quarters of prior losses.

These changes in probability may seem small compared to the marginal effects for some of the control variables. For example, the marginal effect for POSUE equals 0.294, indicating that a positive seasonal change in earnings increases the probability of meeting or exceeding analysts’ expectations by 29 percent. However, because they use ex post information (i.e., reported earnings in quarter t), neither POSUE nor \(|FE|\) predicts positive forecast errors.

The above analysis treats each firm-quarter as a separate observation; however, many of the firm characteristics do not change across quarters. Consequently, I repeated the analysis after aggregating the variables across quarters at the firm level, resulting in one observation per firm. Aggregating the dependent variable, MEET, across quarters yields the percent of quarters in which a firm meets expectations. Regressing this variable on the average of the independent variables yields identical inferences. Thus, the results are not attributable to the inclusion of multiple, nonindependent observations.\(^{16}\)

Finally, the previous analysis models the probability of meeting or exceeding analysts’ expectations and therefore combines observations that exactly meet analysts’ earnings expectations with those that exceed analysts’ expectations. Some firm characteristics may provide incentives to meet analysts’ expectations exactly rather than exceed those expectations. For example, exactly meeting expectations may be more effective at avoiding shareholder litigation than exceeding expectations.

Consequently, I separately model the probability of exactly meeting (vs. not meeting) expectations and the probability of exceeding (vs. not meeting) expectations. The untabulated results suggest that different firm characteristics are associated with exactly meeting (vs. exceeding) expectations. When I model the probability of exactly meeting expectations, LOSS, LTG, and LIT are highly significant, suggesting that firms with a history of prior losses have weaker incentives, and firms with higher growth prospects and higher litigation risk have greater incentives, to exactly meet expectations. These variables are generally not significant when modeling the probability of exceeding expectations (LOSS and LTG are significant in the specification that uses \(%INST\) but not in the specification that includes \(%TRAN\) and \(%NONTRAN\)). In contrast, ICLAIM and EARNRET are not significant when modeling the probability of exactly meeting expectations, but are highly significant when modeling the probability of exceeding expectations. These results suggest that firms that rely on implicit claims with their stakeholders, and those in industries with more value-relevant earnings have greater incentives to exceed expectations (as oppose to meet expectations exactly). Finally, \(%INST\) and \(%TRAN\) are significant in both regressions; however, the effect is stronger in the model of exceeding expectations.

It is possible the differences between exactly meeting vs. exceeding expectations are the result of the different mechanisms used (earnings management vs. forecast guidance) to avoid negative surprises. In the next section, I explore these mechanisms further.

VI. MANAGING EARNINGS OR MANAGING EXPECTATIONS?

Managers can use two mechanisms to avoid negative earnings surprises—managing earnings upward or guiding analysts’ forecasts downward. Prior studies have developed

\(^{16}\) I also conducted the analyses with dummy variables to control for time-period-specific effects. Including fiscal-quarter dummy variables (i.e., indicating fiscal quarters 1–4) yields similar inferences. Including dummy variables that indicate each quarter in the sample period also yields results similar to those reported in the tables, except that the coefficient on LIT is significant at \(p < 0.01\) in both Models 1 and 2.
proxies for earnings management via discretionary accruals (e.g., Dechow et al. 1995) (hereafter DSS), but the academic literature has not developed similar proxies for forecast guidance. I use previously developed methods to measure abnormal accruals (as a proxy for the unobservable discretionary accruals) and I develop a similar approach to measure forecast guidance. I then use these two measures to determine whether the firm characteristics are associated with the tendency to manage earnings and/or analysts' forecasts.

**Proxy for Discretionary Accruals**

To develop a proxy for discretionary accruals, I use the modified Jones model (Jones 1991) described in DSS, adapted for quarterly data:

\[
TA_{ijqt} = \alpha_{ijqt} + \beta_{ijqt}[\Delta REV_{ijqt}/A_{ijq-1}] + \beta_{2jt}[PPE_{ijqt}/A_{ijq-1}] + \beta_{3jt}QTR4_{ijqt} + \epsilon_{ijqt}
\]

where:

- \(TA_{ijqt}\) = total accruals, defined as \(\Delta\) current assets – \(\Delta\) current liabilities – \(\Delta\) cash + \(\Delta\) short-term debt – depreciation for firm i in two-digit SIC code j in quarter q of year t;
- \(A_{ijqt}\) = total assets for firm i in two-digit SIC code j in quarter q of year t;
- \(\Delta REV_{ijqt}\) = change in revenues for firm i in two-digit SIC code j in quarter q of year t;
- \(PPE_{ijqt}\) = gross property, plant, and equipment for firm i in two-digit SIC code j in quarter q of year t;
- \(QTR4_{ijqt}\) = 1 if quarter q is the fourth fiscal quarter, 0 otherwise.

I include an indicator variable for the fourth fiscal quarter because accruals in the fourth quarter may differ from accruals in the first three quarters due to increased auditor scrutiny and firms' tendency to report special items in the fourth quarter (Francis et al. 1996).

I estimate the model for each firm-year using all firm-quarters in that year from the same two-digit SIC code except those from the firm for which I am estimating the parameters (as in DeFond and Jiambalvo [1994]). The sample includes only firm-years with ten or more firm-quarters of data in the same industry (to ensure sufficient data for parameter estimation). Applying the parameter estimates to the actual values for each firm-quarter in that year (adjusting for the change in receivables as in DSS) provides an estimate of total accruals. The difference between actual total accruals and this estimate represents abnormal accruals, and I use this difference as a proxy for the discretionary portion of total accruals. I classify firm-quarters with positive abnormal accruals (POSAA = 1) as having upward earnings management, and those with negative abnormal accruals (POSAA = 0) as having downward earnings management.

**Proxy for Forecast Guidance**

I develop a measure of forecast guidance using a method similar to the abnormal accrual measure. I first estimate the expected portion of analysts' forecasts by modeling the seasonal

\[^{17}\text{I define all change variables as the difference between quarter } t \text{ and quarter } t - 1 \text{ (not quarter } t - 4) \text{ unless otherwise noted.}\]

\[^{18}\text{For firms that report a balance for property, plant, and equipment (PPE, quarterly Compustat item no. 118) in the fourth fiscal quarter but report missing data in quarters } 1-3, \text{ I compute the year-to-year change in PPE and add to each of the interim quarters a proportional amount of this change based on the proportion of annual depreciation incurred in that quarter.}\]
change in earnings as a function of the prior quarter’s seasonal change in earnings and returns cumulated over the current year:

\[
\Delta \text{EPS}_{iq}/P_{iq-4} = \alpha_{iqt} + \beta_{1qt}(\Delta \text{EPS}_{iq-1}/P_{iq-5}) + \beta_{2qt}\text{CRET}_{iq} + \epsilon_{iqt}
\]

where:

\[
\Delta \text{EPS}_{iq} = \text{earnings per share for firm } i \text{ in four-digit SIC code } j \text{ in quarter } q \text{ of year } t, \text{ less earnings per share for the same firm four quarters prior (i.e., quarter } t - 4), \text{ as reported in Zacks;}
\]

\[
P_{iq} = \text{price per share for firm } i \text{ in four-digit SIC code } j \text{ at the end of quarter } q \text{ of year } t, \text{ as reported by quarterly Compustat (adjusted for splits); and}
\]

\[
\text{CRET}_{iq} = \text{cumulative daily excess returns for firm } i \text{ in four-digit SIC code } j \text{ in quarter } q \text{ of year } t \text{ obtained from CRSP. Returns are cumulated from three days after the quarter } t - 4 \text{ earnings announcement to 20 days before the quarter } t \text{ earnings announcement.}
\]

This model is consistent with prior research that finds a positive serial correlation in the seasonal change in earnings (Freeman and Tse 1989; Bernard and Thomas 1990). I include the cumulative returns over the year (prior to the earnings announcement) to capture additional value-relevant information that an analyst might use to estimate earnings. Ending the accumulation period 20 days before the current quarter’s earnings announcement ensures the returns represent information that an analyst could use in forecasting earnings for the current quarter.

I estimate the model for each firm-year using all firm-quarters in that year from the same four-digit SIC code, except those from the firm for which I am estimating the parameters. Similar to the abnormal accrual model, the sample includes only firm-years with ten or more firm-quarters of data in the same industry. To mitigate the effect of extreme values on the parameter estimates, I delete the top and bottom half-percent of each variable (i.e., \(\Delta \text{EPS}/P_{t-4}, \Delta \text{EPS}_{t-1}/P_{t-5}, \text{ and CRET}_t\)).

Table 6, Panel A presents descriptive statistics on the parameter estimates for all firm-years with data available. Parameter estimates for \(\beta_1\) and \(\beta_2\) are positive on average and highly significant as expected. In addition, the average adjusted \(R^2\) for the estimation regressions is 0.24, suggesting that the model has reasonable explanatory power.

The estimate of analysts’ expected forecast should use only data that would be available to analysts in making their forecast. Thus, I use the parameter estimates from the prior firm-year to determine the expected change in EPS (\(E[\Delta \text{EPS}]\)). I then add this value to the earnings from the same quarter in the prior year to obtain the expected forecast (\(E[F]\)) of the current quarter’s earnings:

\[
E[\Delta \text{EPS}_{iq}] = [\hat{\alpha}_{iqt-1} + \hat{\beta}_{1qt-1}(\Delta \text{EPS}_{iq-1}/P_{iq-5}) + \hat{\beta}_{2qt-1}\text{CRET}_{iq}] \times P_{iq-4},
\]

\[
E[F_{iq}] = \text{EPS}_{iq-4} + E[\Delta \text{EPS}_{iq}].
\]

---

19 I include returns in my model of expected forecasts under the assumption that stock prices incorporate additional information not reflected in analysts’ forecasts. For example, if the stock market adjusts for any downward bias in analysts’ forecasts, then these higher expectations will be captured in higher stock returns. If, however, the markets’ expectation is based solely on analysts’ forecasts, then including returns in my model of expected forecasts will not help capture the effect of this guidance and will weaken the power of my tests for forecast guidance.
TABLE 6
Descriptive Statistics on Proxy for Managers' Guidance of Analysts' Forecasts

Panel A: Parameter Estimates from a Model of Expected Change in EPS (n = 16,476)\textsuperscript{a}

<table>
<thead>
<tr>
<th>Estimate</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t-statistic</th>
<th>1st Quartile</th>
<th>Median</th>
<th>3rd Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\alpha$</td>
<td>0.002</td>
<td>0.005</td>
<td>45.35</td>
<td>-0.000</td>
<td>0.002</td>
<td>0.004</td>
</tr>
<tr>
<td>$\beta_1$</td>
<td>0.313</td>
<td>0.382</td>
<td>105.30</td>
<td>0.116</td>
<td>0.297</td>
<td>0.492</td>
</tr>
<tr>
<td>$\beta_2$</td>
<td>0.013</td>
<td>0.019</td>
<td>84.45</td>
<td>0.004</td>
<td>0.010</td>
<td>0.019</td>
</tr>
<tr>
<td>Adjusted R$^2$</td>
<td>0.241</td>
<td>0.219</td>
<td>141.39</td>
<td>0.081</td>
<td>0.196</td>
<td>0.363</td>
</tr>
</tbody>
</table>

Panel B: Descriptive Statistics on Unexpected Forecast (UEF) Proxy (n = 15,848)\textsuperscript{b}

<table>
<thead>
<tr>
<th>UEF</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t-statistic</th>
<th>1st Quartile</th>
<th>Median</th>
<th>3rd Quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.010</td>
<td>0.189</td>
<td>-6.563</td>
<td>-0.077</td>
<td>-0.005</td>
<td>0.059</td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{a} The panel reports the average parameter estimates from a model of expected changes in earnings per share, estimated for each firm-year using data for all firms in the same four-digit SIC code in that same year, except the firm for which the parameters are being estimated. $\Delta EPS_{\text{aq}}/P_{\text{aq}} = \alpha_j + \beta_{1j}(\Delta EPS_{\text{aq}}/P_{\text{aq}}) + \beta_{2j}CRET_{\text{aq}} + \epsilon_{\text{aq}}$.

\textsuperscript{b} The panel reports descriptive statistics on a proxy for forecast guidance (UEF), calculated as the difference between the last published consensus forecast reported on Zacks surprise file (F) and the expected forecast based on the model reported in Panel A.

Subtracting the expected forecast from the last published consensus forecast for the quarter provides the "unexpected" portion of the forecast (UEF). If managers attempt to keep expectations low to avoid negative earnings surprises, then the actual consensus forecast will be less than the estimated forecasts, and UEF will be less than zero. Panel B of Table 6 provides descriptive statistics on UEF.\textsuperscript{20} On average, analysts' published forecasts are approximately a penny less than the model predicts. The following analysis classifies firm-quarters as having downward-guided forecasts (DOWN = 1) if UEF is negative and as not having downward-guided forecasts (DOWN = 0) if UEF is positive.

Empirical Analysis

To provide evidence that the two proxies capture mechanisms for avoiding negative earnings surprises, I examine the relation between: (1) the probability of meeting or exceeding analysts' forecasts (MEET), and (2) the signs of abnormal accruals (POSAA) and unexpected forecasts (DOWN). Table 7, Panel A presents two contingency tables; the first

\textsuperscript{20} For these descriptive statistics, I winsorize the data, setting the value of the bottom and top 1 percent of UEF to the 1st and 99th percentile values, respectively. The results of the following analysis are unaffected by this procedure because I use only the sign of the unexpected forecasts to classify firms as having managed forecasts downward to meet analysts' expectations.
TABLE 7
Association between: (1) Meeting or Exceeding Analysts’ Expectations, and (2) Managing Earnings or Guiding Forecasts

Panel A: Contingency Tables Classifying Firm-Quarters Based on (1) Meeting or Exceeding Analysts’ Expectations, and (2) the Sign of Abnormal Accruals and Unexpected Forecasts

<table>
<thead>
<tr>
<th>Proxy for Managing Earnings: Abnormal Accruals</th>
<th>Proxy for Guiding Forecasts: Unexpected Forecasts</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSAA = 1 (Positive)</td>
<td>POSAA = 0 (Negative)</td>
</tr>
<tr>
<td>Meeting or Exceeding Expectations (MEET = 1)</td>
<td>Meeting or Exceeding Expectations (MEET = 1)</td>
</tr>
<tr>
<td>7,758 (53.32%)</td>
<td>4,898 (45.88%)</td>
</tr>
<tr>
<td>6,793 (46.68%)</td>
<td>2,626 (50.77%)</td>
</tr>
<tr>
<td>2,561 (49.98%)</td>
<td>2,546 (50.77%)</td>
</tr>
<tr>
<td>3,397 (49.98%)</td>
<td>2,546 (50.77%)</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 21.35 \]  
\[ p < 0.001 \]

\[ \chi^2 = 33.48 \]  
\[ p < 0.001 \]

Panel B: Logit Analysis of the Probability of Meeting or Exceeding Analysts’ Expectations as a Function of Abnormal Accruals, Unexpected Forecasts, and Control Variables

Model:

\[ \text{Prob}(\text{MEET} = 1) = F(\beta_0 + \beta_1 \text{POSAA}_i + \beta_2 \text{DOWN}_i + \beta_3 \text{POSUE}_i + \beta_4 \text{INDPROD}_i + \beta_5 \text{LOGMV}_i + \beta_6 | \text{FE}_i | + \epsilon_i) \]

<table>
<thead>
<tr>
<th>Variable []</th>
<th>Predicted Sign</th>
<th>Coefficient</th>
<th>p-value []</th>
<th>Marginal Effect []</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td></td>
<td>-0.727</td>
<td>0.001</td>
<td>-0.005</td>
</tr>
<tr>
<td>POSAA</td>
<td>+</td>
<td>-0.025</td>
<td>0.506</td>
<td>-0.005</td>
</tr>
<tr>
<td>DOWN</td>
<td>+</td>
<td>0.380</td>
<td>0.001</td>
<td>0.081</td>
</tr>
</tbody>
</table>

Control Variables:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Predicted Sign</th>
<th>Coefficient</th>
<th>p-value</th>
<th>Marginal Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSUE</td>
<td>+</td>
<td>1.399</td>
<td>0.001</td>
<td>0.297</td>
</tr>
<tr>
<td>INDPROD</td>
<td>+</td>
<td>10.774</td>
<td>0.001</td>
<td>2.283</td>
</tr>
<tr>
<td>LOGMV</td>
<td>+</td>
<td>0.022</td>
<td>0.080</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-36.090</td>
<td>0.001</td>
<td>-7.648</td>
</tr>
</tbody>
</table>

Log Likelihood: -8,331.36
Chi-square: 2,380.24
p-value: 0.001

No. of Observations:
Meet/Exceed: 10,219
Did not meet: 4,898
Total: 15,117
"Abnormal accruals are the difference between actual total accruals and estimates of total accruals based on the modified version of the Jones model (Jones 1991) for each firm-quarter.

\(^1\) Unexpected forecasts are the difference between the last published consensus forecast reported on Zacks surprise file and an expected forecast based on the model reported in Table 6, Panel A.

\(^*\) POSAA equals 1 if abnormal accruals are positive and 0 otherwise. DOWN equals 1 if unexpected forecasts are negative and 0 otherwise. See Table 2 for remaining variable definitions.

\(^p\)-values are one-tailed.

\(^*\) The marginal effects are computed as $e^{\beta X}/(1 + e^{\beta X})^2$, where $\beta'X$ is computed at the mean values of $X$.

shows the relation between MEET and POSAA, and the second shows the relation between MEET and DOWN. Fifty-three percent of the firm-quarters in which reported earnings meet or exceed analysts' expectations (MEET = 1) show positive abnormal accruals, compared to only 50 percent of the firm-quarters in which reported earnings fall short of expectations (MEET = 0). Although the magnitude of this difference is not large, a Chi-square test indicates that the association is significant ($\chi^2 = 21.35, p < 0.001$). A similar analysis shows a significantly positive association between meeting expectations and guiding analysts' forecasts downward. In firm-quarters that meet or exceed analysts' expectations, 54 percent show a negative unexpected forecast compared to only 49 percent of firm-quarters that missed expectations ($\chi^2 = 33.48, p < 0.001$).

Panel B of Table 7 reports the results of a logit analysis modeling the probability of meeting or exceeding expectations as a function of the sign of abnormal accruals, unexpected forecasts, and the control variables identified earlier (POSUE, INDPRED, LOGMV, and $|FE|$). The coefficient on DOWN is highly significant—firm-quarters with negative unexpected forecasts show an 8 percent higher probability of meeting expectations. This result suggests forecast guidance is an important mechanism for avoiding negative surprises. The coefficient on POSAA, however, is not significant. In a specification of the model that excludes the control variables (untabulated), the coefficient on POSAA is significant ($p < 0.001$); however, after controlling for various factors associated with meeting expectations, the sign of abnormal accruals is not associated with the probability of meeting expectations. Either managers are less likely to manipulate accruals to avoid negative earnings surprises, or my proxy for discretionary accruals is less effective at capturing managerial discretion over earnings.$^{21}$

Tests of Incentives to Manage Earnings to Avoid Negative Surprises

To test whether cross-sectional differences in incentives to avoid negative earnings surprises are associated with managers' exercise of discretion to increase reported earnings, I examine the association between POSAA and the incentive variables examined previously, for the subsample of firm-quarters in which reported earnings meet or exceed analysts' forecasts. If the hypothesized variables provide incentives to manage earnings upward to avoid negative earnings surprises, then these firm characteristics should be associated with positive abnormal accruals for the subgroup that meet or exceed expectations.

$^{21}$ Collins and Hribar (2000) suggest that using the balance sheet approach to compute total accruals results in measurement error because of events such as mergers and acquisitions and discontinued operations. If I compute total accruals using the difference between earnings and cash flow from operations for firm-quarters with the data available, then I obtain similar results for this analysis (POSAA is not significantly associated with MEET when control variables are included). The results are also not affected by the use of two-digit (rather than four-digit) SIC code groupings to estimate the abnormal accrual model.
The results of this analysis (see Table 8) suggest that three of the incentive variables are significantly related to the probability of positive abnormal accruals. Firms with higher institutional ownership (%INST) and higher long-term growth forecasts (LTG) are more likely, and firms with consistent prior losses (LOSS) are less likely, to report positive abnormal accruals (p ≤ 0.03). In addition, when partitioning the percent of institutional ownership between transient and nontransient ownership, I find that firms with higher transient institutional ownership (%TRAN) are more likely to have positive abnormal accruals (p < 0.001), whereas the percent of nontransient institutional ownership is unrelated to the sign of abnormal accruals. The coefficient on the implicit claim variable is positive but only marginally significant (p = 0.07) as is the coefficient on the other proxy variable for value-relevance of earnings, EARNRET (p = 0.06). The coefficient on the litigation risk variable (LIT) is negative, contrary to my predictions; firms in high-litigation-risk industries are less likely to report positive abnormal accruals. Managing earnings upward may not be an effective mechanism for avoiding shareholder litigation because such actions could exacerbate the problem should the firm face shareholder litigation.  

Finally, two of the control variables, POSUE and |FE|, are significant. The coefficient on POSUE indicates that abnormal accruals are more likely to be positive in quarters with increases in earnings. The coefficient on |FE| is negative, consistent with firms not managing earnings upward in highly uncertain environments.

In further (untabulated) analysis, I performed logit regressions on the subsample of firm-quarters that did not meet analysts’ expectations. For this subset of firm-quarters, I do not expect the firm characteristics to be associated with the probability of positive abnormal accruals. The results support this conjecture; none of the coefficients on the incentive variables are significant, with the exception of %TRAN, which is marginally significant (p = 0.04, one-tailed).

Tests of Incentives to Guide Forecasts Downward to Avoid Negative Surprises

I now test whether cross-sectional differences in incentives to avoid negative surprises are associated with managers’ propensity to guide analysts’ forecasts downward. Specifically, I examine the association between the incentive variables and the probability of a negative unexpected forecast (DOWN) for the subsample of firm-quarters in which reported earnings meet or exceed analysts’ forecasts. The results of this analysis, presented in Table 9, suggest that firms with greater institutional ownership (%INST), and in particular transient institutional ownership (%TRAN), are more likely to guide analysts’ forecasts downward to avoid negative surprises. Firms that rely more heavily on implicit claims with their stakeholders (ICLAIM) and firms in industries in which earnings are more value-relevant (EARNRET) are also more likely to guide forecasts downward, whereas firms with consistent prior losses (LOSS) are less likely to do so. Firms with higher long-term growth forecasts (LTG) display some evidence of guiding forecasts downward (Model 1), but when I allow the coefficients on transient and nontransient institutional ownership to vary, the

---

22 I also performed this analysis using a proxy that computes total accruals as earnings less cash flow from operations (when these data are available). In this specification, %INST and LOSS are no longer significant, but %TRAN and LTG remain significant. It is possible that measurement error caused by nonarticulation problems affects the reported results; however, because the use of cash flows from operations to define total accruals is not a widely used procedure (particularly using quarterly data), it is also possible that the loss of significance is due to measurement error in total accruals using this definition. Nevertheless, conclusions related to %INST and LOSS should be interpreted cautiously.

23 DSS (1995) find a positive relation between firm performance and proxies for discretionary accruals. To the extent POSUE reflects firm performance, one would expect a positive relation between this variable and the sign of abnormal accruals.
### TABLE 8

Logit Analysis of the Association between Incentives to Avoid Negative Earnings Surprises and Positive Abnormal Accrual Proxy for Earnings Management (conditional on meeting or exceeding analysts' expectations)

**Model 1:**
\[
\text{Prob}(\text{POSAA} = 1) = F(\beta_0 + \beta_1\%\text{INST}_i + \beta_2\%\text{CLAIM}_i + \beta_3\%\text{LOSS}_i + \beta_4\text{EARNRET}_i + \beta_5\text{LTG}_i \\
+ \beta_6\text{LIT}_i + \beta_7\text{POSUE}_i + \beta_8\text{INDPROD}_i + \beta_9\text{LOGMV}_i + \beta_{10}\text{FE}_i + \varepsilon_i)
\]

**Model 2:**
\[
\text{Prob}(\text{POSAA} = 1) = F(\gamma_0 + \gamma_1\%\text{TRAN}_i + \gamma_2\%\text{NONTRAN}_i + \gamma_3\text{CLAIM}_i + \gamma_4\text{LOSS}_i \\
+ \gamma_5\text{EARNRET}_i + \gamma_6\text{LTG}_i + \gamma_7\text{LIT}_i + \gamma_8\text{POSUE}_i + \gamma_9\text{INDPROD}_i \\
+ \gamma_{10}\text{LOGMV}_i + \gamma_{11}\text{FE}_i + \varepsilon_i)
\]

<table>
<thead>
<tr>
<th>Variable</th>
<th>Predicted Sign</th>
<th>Coefficient</th>
<th>p-value</th>
<th>Marginal Effect</th>
<th>Coefficient</th>
<th>p-value</th>
<th>Marginal Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>+</td>
<td>-0.281</td>
<td>0.028</td>
<td>-0.135</td>
<td>0.307</td>
<td>0.073</td>
<td></td>
</tr>
</tbody>
</table>

**Incentives for Avoiding Negative Earnings Surprises:**

- %\text{INST} (H1) | + | 0.167 | 0.026 | 0.042 |
- %\text{TRAN} | + | -0.169 | 0.932 | -0.042 |
- %\text{NONTRAN} | + | 0.233 | 0.001 | 0.279 |
- ICLAIM (H2) | + | 0.029 | 0.073 | 0.007 |
- LOSS (H3) | - | -0.010 | 0.072 | 0.002 |
- EARNRET (H3) | + | 0.011 | 0.055 | 0.003 |
- LTG (H4) | + | 0.013 | 0.001 | 0.003 |
- LIT (H5) | + | 0.018 | 0.001 | 0.004 |

**Control Variables:**

- POSUE | + | 0.238 | 0.001 | 0.059 |
- INDPROD | + | -0.734 | 0.699 | -0.183 |
- LOGMV | + | -0.016 | 0.939 | -0.005 |
- [FE] | - | -8.704 | 0.001 | -2.166 |

Log Likelihood: -9,975.00
Chi-square: 158.03
p-value: 0.001

**No. of Observations:**

- Positive abnormal accruals: 7,758
- Negative abnormal accruals: 6,793
- Total: 14,551

---

*This table presents the results of logit regressions that test the association between the incentive and control variables and the probability of positive abnormal accruals, conditional on the firm meeting or exceeding analysts' expectations. The dependent variable equals 1 if the abnormal accruals estimated for the firm-quarter using a modified Jones model (Jones 1991) is positive, 0 otherwise.

b See Table 2 for variable definitions.

c p-values are one-tailed.

d The marginal effects are computed as $e^{\beta'X}/(1 + e^{\beta'X})^2$, where $\beta'X$ is computed at the mean values of $X$. 
TABLE 9
Logit Analysis of the Association between Incentives to Avoid Negative Earnings Surprises and Negative Unexpected Forecast Proxy for Forecast Guidance (conditional on meeting or exceeding analysts’ expectations)\(^a\)

| Model | \(\text{Prob}(\text{DOWN} = 1) = F(\beta_0 + \beta_1 \%\text{INST}_i + \beta_2 \%\text{CLAIM}_i + \beta_3 \text{LOSS}_i + \beta_4 \text{EARNRET}_i + \beta_5 \text{LTG}_i + \beta_6 \text{POSUE}_i + \beta_7 \text{INDPROD}_i + \beta_8 \text{LOGMV}_i + \beta_9 | \text{FE} | + \epsilon_i)\) |
|---|---|
| Model 1 | Model 2 |

\[ \text{Intercept} = -0.560 \quad 0.001 \]
\[ \%\text{INST} (H1) = + \quad 0.418 \quad 0.001 \quad 0.104 \]
\[ \%\text{TRAN} = + \]
\[ \%\text{NONTRAN} = + \quad 0.091 \quad 0.001 \quad 0.023 \]
\[ \text{CLAIM} (H2) = + \quad -0.875 \quad 0.01 \quad -0.218 \]
\[ \text{LOSS} (H3) = - \quad 0.053 \quad 0.001 \quad 0.013 \]
\[ \text{EARNRET} (H3) = + \quad 0.006 \quad 0.017 \quad 0.002 \]
\[ \text{LTG} (H4) = + \quad -0.154 \quad 0.999 \quad -0.038 \]
\[ \text{LIT} (H5) = + \]

\[ \text{Control Variables:} \]
\[ \text{POSUE} = + \quad -0.357 \quad 0.999 \quad -0.089 \]
\[ \text{INDPROD} = + \quad 1.018 \quad 0.541 \quad 0.253 \]
\[ \text{LOGMV} = + \quad 0.067 \quad 0.001 \quad 0.017 \]
\[ |\text{FE}| = - \quad 8.535 \quad 0.999 \quad 2.124 \]

\[ \text{Log Likelihood} = -7,254.43 \]
\[ \text{Chi-square} = 218.59 \]
\[ p\text{-value} = 0.001 \]

\[ \text{No. of Observations:} \]
\[ \text{Negative unexpected forecasts} = 5,778 \]
\[ \text{Positive unexpected forecasts} = 4,898 \]
\[ \text{Total} = 10,676 \]

\(^a\) This table presents the results of logit regressions that test the association between the incentive and control variables and the probability of negative unexpected forecasts, conditional on the firm meeting or exceeding analysts’ expectations. The dependent variable equals 1 if the actual consensus forecast in that quarter is less than the forecast based on the model presented in Table 6, Panel A, and 0 otherwise.

\(^b\) See Table 2 for variable definitions.

\(^c\) p-values are one-tailed.

\(^d\) The marginal effects are computed as \(e^{\beta'X}/(1 + e^{\beta'X})^2\), where \(\beta'X\) is computed at the mean values of \(X\).
The coefficient on the litigation risk variable is negative, contrary to my predictions. It appears that guiding analysts’ forecasts downward may not be an effective mechanism for avoiding negative earnings surprises for firms in highly litigious industries, perhaps because of potential negative stock price reactions to downward forecast revisions.

The coefficient on POSUE is negative, contrary to expectations. If earnings in the same quarter of the prior year are unusually low (resulting in a positive change in earnings), then it is more likely that the forecast estimated from my model will be lower than that produced by analysts (DOWN = 0) because my expected forecast model uses the year-ago earnings as a base. The significantly positive coefficient on LOGMV indicates that large firms are more likely to manage forecasts downward.

I also performed (untabulated) logit regressions on the subsample of firm-quarters that failed to meet analysts’ expectations. The coefficients on most of the incentive variables are not significant. The two exceptions are the coefficient on %TRAN, which is significantly positive (p = 0.03), and the coefficient on LOSS, which is significantly negative (p < 0.001). These results suggest that firms with higher transient institutional ownership are more likely, and firms with consistent losses are less likely, to manage forecasts downward even in quarters in which they fail to meet expectations.

In summary, the results of these analyses are consistent with firms using both earnings management and forecast guidance to avoid negative earnings surprises. However, certain firm characteristics are more highly associated with one mechanism than the other. Firms that rely more heavily on implicit claims with their stakeholders (ICLAIM) and firms in industries in which earnings are more value-relevant (EARNRET) appear to guide forecasts downward rather than manage earnings upward to avoid negative surprises. In contrast, high-growth firms (LTG) appear to manage earnings upward rather than guide forecasts downward to avoid missing expectations.24 Firms with more institutional ownership, particularly transient institutional ownership, appear to engage in both earnings management and forecast guidance. Similarly, firms with a history of prior losses appear to be less likely to engage in both earnings management and forecast guidance. Overall, the firm characteristics examined in this study, as a group, appear to be better predictors of forecast guidance than of earnings management.25

VII. SUMMARY

This study investigates recent allegations in the business press that managers avoid reporting negative earnings surprises at the earnings announcement. Although past academic research documents that analysts’ forecasts are optimistic on average (i.e., the average surprise is negative), recent business press articles suggest that managers use either their discretion over reported earnings or their ability to guide analysts’ forecasts downward to increase the probability of meeting or beating these forecasts at the earnings announcement. I explore a number of firm characteristics that I expect create greater incentives to avoid

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24 These results are consistent with the analyses performed earlier in which I found ICLAIM and EARNRET to be highly associated with exceeding expectations (but not meeting expectations exactly), whereas I found the opposite for LTG. To the extent that meeting expectations exactly is an indication of managing earnings rather than guiding forecasts, the earlier results are consistent with those found using the discretionary accrual and forecast guidance proxies in this section.

25 However, my analysis includes only proxies for the incentive to manage earnings and not the opportunity to do so (e.g., weak corporate governance). If the ability to manage earnings is more restricted than is the ability to guide forecasts, then the weaker results for earnings management could reflect the absence of control for the opportunity to engage in earnings management.
negative earnings surprises, and examine the relation between these characteristics and the probability of meeting or exceeding analysts' expectations at the earnings announcement.

The results indicate that firms with higher transient institutional ownership, greater reliance on implicit claims with their stakeholders, and higher value-relevance of earnings are more likely to take actions to meet or exceed analysts' forecasts at the earnings announcement. These associations exist even after controlling for other factors associated with the probability of meeting or exceeding analysts' earnings expectations, including the seasonal change in earnings, growth in industrial production, firm size, and the magnitude of the initial forecast error.

I also examine the mechanisms managers use to avoid negative surprises. I measure abnormal accruals using the modified Jones model (Dechow et al. 1995). I also develop a measure of forecast guidance by modeling an expected forecast based on prior earnings changes and returns during the period and comparing this expected forecast to the consensus analyst forecast. Both proxies are associated with avoiding negative earnings surprises in a univariate analysis, but only the proxy for forecast guidance is associated with avoiding negative surprises after controlling for the other variables that are likely associated with the probability of meeting or exceeding analysts' expectations. Although this finding is consistent with forecast guidance dominating earnings management as a mechanism for avoiding negative surprises, it is also possible that the earnings management proxy suffers from more measurement error than does the forecast guidance proxy.

I also examine the relation between the incentives to avoid negative earnings surprises and the probability (1) that the firm reports positive abnormal accruals, and (2) that analysts issue forecasts that are lower than expected, both conditional on meeting analysts' expectations. The results suggest that firms with higher transient institutional ownership are more likely, and firms with a consistent pattern of prior losses are less likely, to both manage earnings upward and guide forecasts downward. Firms that rely more on implicit claims with their stakeholders, and firms in industries in which earnings are more value-relevant, appear to guide forecasts downward but not to manage earnings upward. High-growth firms appear to do the opposite—manage earnings upward but not guide forecasts downward. Overall, the results suggest that both mechanisms play a role in avoiding negative earnings forecasts. If the recent passage of Reg FD limits the extent to which managers are able to guide analysts' forecasts, then avoiding negative earnings surprises may prove more difficult in the future. The results of this study suggest firms that relied on forecast guidance in the past will be affected by the new regulation's limitations on their ability to manage expectations.

This study is one of the first to explore a comprehensive set of management incentives to avoid negative earnings surprises. However, the substantial data requirements skew the sample toward larger firms, so the results may not generalize to the broader population of firms. In addition, although this study is among the first to investigate and provide evidence consistent with managers guiding analysts' forecasts in order to avoid negative surprises, the persuasiveness of this evidence depends critically on my proxy for forecast guidance. Similarly, evidence on the use of earnings management to avoid negative surprises depends on the effectiveness of abnormal accruals as a proxy for earnings management. Moreover, I do not control for potential differences across firms in the opportunities to engage in earnings management and forecast guidance. Thus, readers should use caution in drawing conclusions on the relative importance of these two mechanisms for avoiding negative surprises.

This paper also does not provide evidence that managers (or their firms) are better off as a result of taking actions to avoid negative surprises. A natural extension of research to
address this second question would examine the extent to which the stock market can undo the effect of any bias in the consensus forecast for a firm. Prior research suggests that the market seems to react to the bias in analysts’ forecasts (La Porta 1996; Dechow et al. 2000), but recent reports in the business press suggest that the prevalence of positive earnings surprises has diluted market reactions to positive news when firms announce earnings (Ip 1997a). Finally, although this study provides evidence consistent with an increasing importance on meeting or beating analysts’ forecasts in recent years, the academic literature has yet to explore the underlying cause of this shift.

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