

**When Do Analysts Adjust for Biases in Management Guidance?
Effects of Guidance Track Record and Analysts' Incentives**

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Abstract

Prior research indicates that analysts do not adjust for the general downward bias in earnings guidance issued by management. We report the results of three experiments designed to investigate how both cognitive and incentive factors and their interaction explain this phenomenon. Our results suggest that analysts do not adjust for the general tendency for companies to issue downwardly-biased guidance, but may adjust after they learn about a firm's specific bias pattern over time. However, the degree of adjustment depends on the interactive effects of analysts' incentives and the consistency and magnitude of bias revealed by its guidance track record. Analysts with accuracy incentives adjust for management's track record of downwardly-biased guidance, but those with relationship incentives do not. Furthermore, the difference in adjustment between analysts with relationship and accuracy incentives is larger when the bias track record is inconsistent than when it is consistent. Also, when guidance bias is larger (two cents versus one cent), analysts with relationship incentives partially adjust, as they appear to strike a balance between accuracy and their desire to please management. These findings have implications for investors, regulators, and the interpretation of prior research.

Keywords: management earnings guidance, track record, incentives, analyst forecasts

Data availability: Contact authors

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I. INTRODUCTION

Management's earnings guidance issued between quarterly earnings announcements tends to be lower than subsequent earnings realizations (see e.g., Soffer, Thiagarajan and Walther 2000; Choi and Ziebart 2002; Baik and Jiang 2006)¹. Prior research suggests that analysts are aware of this downward bias, but do not fully adjust their forecasts accordingly (Soffer et al. 2000; Tan, Libby and Hunton 2002; Baik and Jiang 2006). This adjustment failure accounts in part for the predominance of firms with actual earnings that meet or beat the consensus analysts' forecasts (Bartov, Givoly and Hayn 2002; Cotter, Tuna and Wysocki 2006). Both cognitive and incentive factors may contribute to the observed adjustment failure.

Tan et al. (2002) suggest that analysts' failure to adjust for known bias in management guidance reflects, in part, the 'neglect of population base rate' phenomenon. That is, analysts will not adjust for a cross-sectional downward bias in management guidance (the population base rate), but may adjust when they become aware of firm-specific guidance bias (Bar-Hillel 1980). Prior experimental and archival studies do not examine the extent to which analysts or investors adjust for a firm-specific record of guidance bias (e.g., Hirst, Koonce, and Miller 1999, Soffer et al. 2000; Libby, Tan and Hunton 2006; Miller 2006; Cotter et al. 2006).

It is also possible that analysts are aware of downward bias in management guidance, yet have incentives not to adjust their forecasts for such bias. For example, analysts may have incentives to preserve a good relationship with management, which in turn can yield access to private information and opportunities for investment banking business (e.g., Affleck-Graves et al. 1990; Dugar and Nathan 1995; Lin and McNichols 1998; Hunton and McEwen 1997). Since management prefers analyst forecasts to be aligned with their guidance,² analysts may

¹ We define earnings guidance (also called an earnings warning) as a management forecast of earnings for the current quarter issued during the three months between quarterly earnings announcement dates.

² Richardson, Teoh and Wysocki (2006) show that firms that walk down analysts forecasts to beatable targets tend to issue equity or have insider selling after earnings announcements.

cooperate, to some degree, to maintain a good relationship with management. Prior research does not investigate how analysts' incentives influence the extent to which they adjust for a track record indicating guidance bias.

Finally, the direction and magnitude of management guidance bias can be inconsistent. Prior psychology research (see section II) suggests that analysts' incentives might interact with the consistency and magnitude of management guidance bias in determining analysts' adjustment for guidance bias.

Using three experiments, we address four related questions: (1) do analysts without conflicting incentives adjust for a pattern of firm-specific downward bias in management guidance (Experiment 1); (2) when analysts have knowledge about firm-specific guidance bias, do incentives to preserve a good relationship with management (versus incentives to be accurate) dampen their bias adjustment (Experiment 2); (3) does the consistency or inconsistency in management guidance bias over time affect the extent to which incentives influence analysts' bias adjustments (Experiment 2); and, (4) when analysts have an incentive to preserve a good relationship with management, will the magnitude of management guidance bias influence the extent to which analysts adjust (Experiment 3)? We use an experimental approach to investigate these issues, because we can control for possible confounds inherent in the relevant archival data such as differing characteristics and intervening events for firms with consistent and inconsistent guidance bias, and the lack of clean archival proxies for analysts' incentives.

In Experiment 1, 31 sell-side financial analysts make earnings forecasts for three periods separated by one or more earnings periods when no guidance is issued. Management guidance is either consistently upwardly-biased or downwardly-biased by the same amount over the periods. Results show that analysts do not adjust for their knowledge of general guidance bias in Period 1, but they do adjust for the firm specific pattern in Period 3 after they have observed two periods of consistent firm-specific bias.

In Experiment 2, 47 experienced sell-side analysts make earnings forecasts in response to management guidance for the current quarter. We manipulate guidance track record (consistent or inconsistent) and analysts' incentives (accuracy or management relationship) as between-subjects variables. The mean guidance bias (guidance minus actual) in prior periods is held constant at $-\$0.01$ (i.e., downwardly-biased by 1 cent). The results indicate that analysts with accuracy incentives adjust for the downward guidance bias, while those with relationship incentives do not adjust. The difference in bias adjustment between analysts with accuracy vs. relationship incentives is magnified when the guidance track record is inconsistent. In a post-experiment debriefing, analysts indicate the following beliefs: short-term company guidance is generally downwardly biased; issuing forecasts above management's guidance would damage their relationship with management; and when companies for which analysts have issued a buy recommendation beat their most current forecast, their relationship with customers who have purchased stock based on their recommendation is improved. All of these findings suggest that analysts' failure to adjust for known guidance bias when they have relationship incentives may be intentional.

Finally, in Experiment 3, we assess whether the effects obtained in the relationship incentive condition of Experiment 2 replicate when the average magnitude of the guidance bias is larger (at -2 cents, rather than -1 cent). Thirty-four experienced sell-side analysts are given the same relationship incentives instruction as in Experiment 2 and are assigned to either the consistent or inconsistent track record conditions. While analysts in both conditions adjust to some degree, analysts make a larger adjustment in the consistent condition relative to the inconsistent condition. The overall magnitude of the upward adjustment is about one cent, which is smaller than the average two cents downward bias evident from the track record. This finding implies that as the magnitude of the guidance bias increases, analysts with relationship incentives strike a compromise between maintaining good relations with management and being accurate by making a partial adjustment for the guidance bias.

Cumulatively, our findings suggest that multiple factors contribute to the somewhat paradoxical findings that analysts fail to fully adjust for downwardly-biased management guidance bias, even though they are aware of this general bias amongst reporting firms. We demonstrate that both cognitive factors (neglect of population base rate and historical consistency of bias) and incentive factors (accuracy versus relationship) matter, and interactively determine analysts' adjustments for guidance bias. Obtaining a better understanding of the causes of bias in analysts' forecasts can help investors that rely on such forecasts make their own bias adjustments, and aid regulators in determining more effective remedies should such bias be judged to be detrimental to investors' interests (e.g., Levitt 1998; Cox 2005). The current study also contributes to the behavioral decision making literature by demonstrating how cognitive and motivational factors can interact in an important business setting. In the following sections, we develop our hypotheses, describe the experiments and their results, and conclude with a discussion of the implications of our findings and limitations of our paper.

II. HYPOTHESIS DEVELOPMENT

A large proportion of firms tend to meet or (just) beat consensus earnings expectations (DeGeorge, Patel and Zeckhauser 1999; Brown 2001; Bartov et al. 2002; Burgstahler and Eames 2003). At the same time, the frequency of management guidance issued shortly before actual earnings announcements has been on an upward trend (Soffer et al. 2000, Opdyke 2001). Research further suggests that firms use such guidance to manage market expectations and subsequent reactions to actual earnings announcements (Soffer et al. 2000; Matsumoto 2002). The purposes of our multiple-experiment study are to examine the extent to which analysts adjust their earnings estimates for known downwardly biased guidance from management, and consider how analysts' incentives might interact with the consistency and magnitude of management's biased guidance in determining the extent to which analysts adjust their earnings estimates.

Management Guidance Contributes to Beatable Forecasts

Prior studies indicate that management earnings guidance issued within three months of the earnings announcement date is downwardly biased (e.g., Soffer et al. 2000; Choi and Ziebart 2002; Baik and Jiang 2006; Cotter et al. 2006). For example, in the most recent sample of 7,671 firm quarters of earnings guidance issued during the period 1995 to 2002, for the point estimate or midpoint of range guidance, 52% are downwardly biased, 19% neutral, and 29% upwardly biased (Baik and Jiang 2006). Among those firms with downwardly biased guidance, the median forecast error is 8%.³

Prior studies also suggest that the bias in short-term management guidance greatly increases the likelihood that analysts will reduce their forecasts during the quarter to beatable levels. Cotter et al. (2006) examine 8,198 firm quarters of guidance issued between 1995 and 2001. They find that, compared to a control sample of non-guiding firms, analysts' forecasts for guiding firms are more optimistic before guidance is issued.⁴ Nevertheless, analysts' forecasts for the guiding firms are significantly less optimistic than the control sample after the guidance is issued. As a consequence, guiding firms are 1.7 times as likely to meet or beat the final consensus analyst forecast than the control sample. Similarly, in Baik and Jiang's (2006) sample of firms issuing guidance, actual earnings beats the consensus forecast issued before the guidance 42% of the time compared to 61% of the time for the consensus forecast issued after the issuance of the guidance. Bartov et al.'s (2002) 1983-1997 sample shows similar effects, with the magnitude increasing in more recent years. All of these findings strongly suggest that analysts revise their current quarter forecasts in response to management guidance, but do not fully adjust those forecasts for the downward bias in the management guidance.

³ Bok Baik (personal communication, 2005).

⁴ Bartov et al. (2002) also show that analysts' forecasts trend downwards during the quarter in that they move from being optimistic at the start of the quarter to being pessimistic at the end of the quarter.

One possible explanation for analysts' adjustment failure is that they might not be aware of guiding firms' general tendency to issue downwardly-biased guidance. Tan et al. (2002) address this possibility. They ask 149 sell-side analysts from a leading investment banking, trading and brokerage firm what guidance they would expect management to provide if management expected quarterly earnings to be \$0.75. When told that the \$0.75 actual earnings would be \$0.25 above the consensus forecast of \$0.50, the analysts' mean response was \$0.67 (11% below expected earnings); when informed that \$0.75 actual earnings would be \$0.25 below the consensus forecast of \$1.00, the analysts' mean response was \$0.70 (7% below expected earnings). All but 11 participants expected management to issue guidance below \$.75. These responses suggest that analysts are aware of downward bias in management guidance. Furthermore, the answers are remarkably close to the 8% median bias in the Baik and Jiang (2006) downwardly biased sample. However, when the same analysts forecast earnings after receiving management guidance in a single period, their forecasts are nearly identical to management's guidance. Thus, it appears as though analysts are aware of but do not adjust for the known population bias in a single period setting. These results suggest a question that is the primary focus of this study: If downwardly-biased guidance is common and known to the analysts, why do they fail to adjust for such bias when making their forecasts? We assess the plausibility of cognitive and incentive explanations, as well their interaction.

Why Don't Analysts Adjust for Known Guidance Bias?

Neglect of Base Rates

Psychology research indicates that people use information with cause-effect links, and are therefore more likely to use firm-specific rather than population (cross-sectional) base rate information (Bar-Hillel 1980). From this perspective, there is a more direct cause-effect relationship in firm-specific information than population base rate information. Population base rate information (e.g., the average bias in guidance) may not be seen as causally relevant, and thus may receive less decision weight in the analysts' judgments. On the other hand, a

firm-specific guidance track record can be seen as more causally relevant and receive more weight in a judgment process compared to the general base rate bias (see also Hogarth 1980, Chapter 3; Libby 1981, Chapter 3).

Thus, in the absence of a firm-specific track record, managers likely will not adjust for the general tendency of firms to issue downwardly biased guidance. However, if analysts learn that the firm's guidance has a consistent pattern (e.g., downwardly biased by a similar amount), we anticipate that they will adjust their forecasts in predictable ways. Accordingly, we expect that analysts will adjust their post-guidance forecasts for a known, firm-specific bias in management's guidance in the absence of any conflicting incentives. This prediction is formally stated as our first hypothesis:

H₁: Analysts who are aware of consistent downward bias in a firm's management guidance track record will adjust for such bias in their post-guidance forecasts.

Incentive Effects

Analysts' incentives might affect the magnitude of their adjustment for known bias in management forecasts. Analysts face two conflicting incentives when they issue forecasts and research reports (Schipper 1991). They have an incentive to be accurate because their reputation within the firm and in the industry is determined in part by their accuracy, and research shows that more accurate analysts are better rewarded and more likely to be hired by prestigious brokerage firms (e.g., Hong and Kubik 2003). On the other hand, analysts have an incentive to make forecasts that are aligned with the interests of the firms they cover. Prior research indicates that analysts' forecasts are biased because they have incentives to please management, and thereby obtain access to private information and help their firms obtain investment banking opportunities (Affleck-Graves et al. 1990; Dugar and Nathan 1995; Hunton and McEwen 1997; Lin and McNichols 1998; Antia and Pantzalis 2006; Libby, Hunton, Tan and Seybert 2007). Recent regulations have sought to reduce both sources of incentives that lead to biased forecasts.

Regulation FD (Fair Disclosure), effective in 2000, prohibits selective information disclosures to analysts and requires that any material non-public disclosures to analysts must be made simultaneously to the public. Also, in 2002, the New York Stock Exchange and National Association of Securities Dealers implemented rules that limit communications between the research and investment departments of financial firms. However, the effectiveness of these regulations in reducing analysts' conflict of interests has been met with skepticism because firms allegedly continue to employ investment banks with analysts who are supportive of their stocks (Springsteel 2003). Thus, it appears as though incentives to maintain a good relationship with management continue in the post-Regulation FD environment.

As indicated earlier, research suggests that management earnings guidance is downwardly biased (e.g., Soffer et al. 2000; Choi and Ziebart 2002; Baik and Jiang 2006; Cotter et al. 2006), which appears to reflect an intentional strategy of managing investors' expectations. Analysts who reinforce this strategy by failing to adjust or under-adjusting for known downward bias in guidance will likely be favorably received by management. Accordingly, we expect that analysts' adjustments for management guidance bias will be greater when they have incentives to be accurate than when they have incentives to please management.

H₂: Analysts' adjustment for a firm's management guidance track record will be greater when analysts have accuracy incentives than when they have relationship incentives.

Interaction between Incentives and Bias Consistency

Research in psychology indicates that decision makers use ambiguity in available evidence to form "elastic" justifications that conform to their incentives (Hsee 1995; Schweitzer and Hsee 2002). This argument is consistent with literature on motivated reasoning, indicating that directional goals will have a greater effect when the desired

conclusion can be justified based on the available information (Kunda 1990; Koonce and Mercer 2005).

Baik and Jiang (2006) find that in an eight-year period between 1995 and 2002, 50% of the firms that issue guidance do so three or more times. Among these firms, 68% are consistently downwardly biased or accurate, and 49% are consistently downwardly biased.⁵ In addition, for those firms that are consistently downwardly biased, the magnitude of the bias varies. When the guidance track record is inconsistent in terms of the direction or magnitude of the bias, there is more ambiguity in terms of the appropriate response. Following the psychology literature on elastic justification and motivated reasoning, analysts facing relationship incentives not to adjust for guidance bias should find greater justification for adjustment failure when the track record is inconsistent than when it is consistent. In addition, an inconsistent (vs. consistent) track record with the same average bias increases the apparent risk of even partial adjustments causing a missed forecast. For example, to the degree that analysts with accuracy incentives infer an increasing trend in guidance bias from an inconsistent track record and increase their bias adjustment, analysts with relationship incentives may restrict their adjustment because of the increased risk of causing a missed forecast. Both of these effects suggest our third hypothesis.

H₃: The difference in adjustment for guidance bias between analysts facing relationship incentives and accuracy incentives will be greater when the bias in the firm's guidance track record is inconsistent than when it is consistent.

We test these hypotheses using three experiments. In Experiment 1, we test H1 in a setting where analysts are exposed to management guidance over three periods, and learn that the management guidance bias is consistent in direction and magnitude over these three periods. We manipulate between-subjects the direction of the bias (downward vs. upward), with the number of periods over which analysts make forecasts as a within-subject variable. In

⁵ Bok Baik (personal communication, 2005).

Experiment 2, we test H2 and H3 in a setting where analysts are given summaries of management guidance and actual earnings (the management guidance track record) over three prior periods. We manipulate both the analysts incentives (relationship versus accuracy) and track record (consistent versus inconsistent). The guidance exhibits an average downward bias of 1 cent. In Experiment 3, we use a design that is a subset of that employed in Experiment 2 to further examine H3. We assess whether analysts with incentives to maintain relations with management exhibit the same effects of a consistent versus inconsistent track record when the magnitude of the downward bias is raised from 1 to 2 cents.

III. EXPERIMENT 1: EFFECT OF TRACK RECORD

As noted above, our first experiment is designed to test whether analysts will adjust for a track record indicating consistent bias in a firm's management guidance when that track record is learned over successive periods.

Method

Our participants are 31 sell-side analysts (mean experience as an analyst = 7.5 years) from a leading investment banking, trading and brokerage firm. Thirty-nine percent are Chartered Financial Analysts. They perform the experiment during the firm's training session.⁶ We use a 2×3 mixed design, with guidance bias (downwardly-biased, upwardly-biased) as a between-subjects variable, and period (period 1, period 2, period 3) as a within-subjects variable. Table 1, Panel A summarizes key features of these manipulations.

Insert Table 1

Each of the three periods relates to a different year (e.g., Period 1 relates to quarter 2 in 1999, Period 2 relates to quarter 3 in 2000, and Period 3 relates to quarter 2 in 2001). For each of the three periods, all analysts read the company's most recent financial information

⁶ Participants in this study are a subset of those reported in Libby et al. (2006). In that study, Libby et al. (2006) use three forms of guidance, point, wide range and narrow range, as between-subjects variables, and measure reforecasts made in Period 1 after receiving an actual earnings announcement. We do not report results on the effects of forecast form and Period 1 reforecasts as they are not the focus of the current paper.

(background, MD&A, and five-year financial summary) for the current fiscal year-to-date and the current consensus analyst forecast. They are then exposed to earnings guidance pertaining to the current quarter, after which they provide earnings forecasts for the current quarter, current full year, and the following full year. They also report their confidence in the accuracy of their forecasts (0: not at all confident; 100: extremely confident). The *Period* variable refers to the number of separate periods for which analysts have provided forecasts in response to management's guidance. This procedure captures the company's guidance track record over three periods. We base our case materials on an actual semi-conductor/ telecommunications manufacturer listed on the American Stock Exchange. We disguise the identity of the company, and call it Zetha, Inc.⁷

Within each period, we hold constant actual EPS and analysts' consensus forecasts prior to the guidance, along with the quarterly and 12-month analysts' consensus forecasts prior to the guidance. In the downwardly-biased (upwardly-biased) guidance condition, quarterly EPS guided by management always understates (overstates) actual second quarter EPS by the same amount (\$0.05). Details of the management guidance and actual earnings is presented in Table 1, panel A.

We choose three periods for our tests because we expected that participants need to experience a minimum of two prior periods to determine a pattern of guidance bias. For each period, management guidance is always consistently upwardly- or downwardly- biased by five cents, depending on the guidance bias condition. Thus, analysts are able to determine a trend or track record only after Period 2, and our analysis of the effects of track record involves a comparison of analysts' forecasts made in Period 1 and Period 3. For this reason, we keep Periods 1 and 3 as similar as possible, and they are identical in terms of guidance

⁷ See Libby et al. (2006) for further details on how the study was administered.

date and almost identical in terms of the magnitude of guidance (within a cent). Period 2 is kept slightly different from Periods 1 and 3 in terms of guidance date and guidance magnitude to make the learning environment less obvious and stylized. Across all periods, we hold constant management's explanation (lower or higher than expected sales) for guiding analysts' forecasts downward or upward at the guidance date. Finally, during Periods 2 and 3, analysts are able to refer to Zetha's quarterly information or to review Zetha's announcements made in earlier periods. At the end of each period, analysts complete some demographic background questions relating to experience and age (Periods 1 and 2), and debriefing and manipulation check questions (Period 3).

Results

Manipulation Checks

At the end of Period 3, we ask questions to assess whether the analysts noted the pattern of guidance bias. All analysts indicate that they notice a systematic relation between management guidance and actual earnings, and all analysts in the downwardly-biased (upwardly-biased) conditions note that guidance is generally too low (high) relative to actual earnings.

Hypothesis Tests

Table 1, panel B reports analysts' forecasts made for the current quarter and the analysts' adjustments to management guidance (forecast – guidance) for each period. As Table 1 shows, analysts' current quarter forecasts are literally identical to guidance issued by management in Period 1, indicating that they do not make any adjustments to management guidance. In Period 2, after experiencing one round of management guidance bias, analysts adjust their forecasts downwards (upwards) by under a tenth of a cent in the downwardly-

biased (upwardly-biased) condition. Their forecasts are not significantly different from the guidance issued by management ($p > 0.754$).

Our primary dependent variable is the amount of adjustment to management guidance made in Period 3. By then, analysts have experienced two rounds of guidance and actual earnings announcements indicating that guidance is consistently upwardly- or downwardly-biased by five cents. In Period 3, in the downwardly-biased condition, analysts' post-guidance forecasts are adjusted upwards by 7.56 cents to a mean of 13.56 cents, which is significantly higher than the 6 cents guidance issued by management ($p = 0.000$). In the upwardly-biased condition, analysts' post-guidance forecasts are adjusted downward by 7.67 cents to a mean of 8.33 cents, which is significantly lower than the 16 cents guidance issued by management ($p = 0.000$). Thus, for both downwardly-biased and upwardly-biased conditions, analysts adjust their forecasts in the correct direction (in the opposite direction from that of the management guidance bias). The upward adjustment of 7.56 cents in the downwardly-biased condition, and downward adjustment of 7.67 cents in upwardly-biased conditions are significantly greater than the 5 cents bias present in the first two periods in each of these conditions ($p = 0.031$ and 0.016 , respectively).

These findings are consistent with analysts' taking management's guidance at face value in Period 1; that is, they do not adjust for the known *population* bias in management guidance.⁸ However, consistent with H1, analysts adjust for the bias in management guidance

⁸ Tan et al. (2002) administer a debriefing question at the end of their single-period experiment, and show that all participating analysts are aware of the downward bias in management guidance. We are unable to administer a similar question at the end of Period 1 because this would contaminate participants' responses for the remaining two periods. However, in both Experiments 2 and 3 (reported later), we also ask analysts a debriefing question similar to that in Tan et al. (2002): "Assume that on May 31, a randomly selected company estimated that its EPS for the quarter ended June 30 would be \$0.35, which was \$0.05 ABOVE the consensus forecast of \$0.30. If the company decided to issue earnings guidance in the form of a point estimate, what amount would you expect it to provide?" Every analyst's response is below \$0.35, and the mean is \$0.32. Thus, all analysts believe that management guidance will be downwardly biased. Responses do not vary by experimental treatment ($p > 0.17$).

in Period 3 once they learn about *firm-specific* guidance bias after receiving two periods of consistently-biased management guidance. These findings suggest the lack of adjustment for general guidance bias observed in prior studies can be explained in part by the general human tendency not to adjust for population base rates. It also suggests that analysts will respond to firm-specific track records unless other factors reduce their willingness to do so.

IV. EXPERIMENT 2: EFFECT OF INCENTIVES AND TRACK RECORD CONSISTENCY

Experiment 2 is designed to test whether incentives to preserve a good relationship with management (versus incentives to be accurate) curtail analyst adjustments for the bias, and whether the consistency in guidance bias over time moderates this differential adjustment for guidance bias.

Method

Our design is a 2 x 2 between-subjects design, with incentives (accuracy, relationship) and track record (consistent, inconsistent) as independent variables. Participants are 47 experienced sell-side financial analysts employed by a major worldwide investment banking, trading and brokerage firm. They have an average of 11 years of analyst experience. All but three are Chartered Financial Analysts. None of the participants from Experiment 1 participated in Experiment 2.

Analysts complete the task during the firm's training course.⁹ As an incentive, each analyst is provided a \$50 contribution to a charity of his/her choice. The trainer is briefed by one of the researchers in advance on the administration of the experiment, and provided with the experimental materials sorted in random order. The trainer is unaware of the experimental conditions.

⁹ Analysts completed this experiment in the afternoon. Earlier in the morning, they completed another unrelated experiment. We create a dummy variable that denotes the experimental condition analysts are in during the morning experiment. No results change when we include this dummy variable as a covariate or as another independent variable, and the dummy variable and its interactions with the afternoon experimental treatments are not significant.

The case materials contain background information about a company called Kappa, Inc, a manufacturer of semi-conductor and telecommunication materials. The analysts are provided with a table including the quarterly actual earnings per share for fiscal years 2003, 2004 and 2005, as well as the first quarter of 2006. The table includes guidance given in three of the prior quarters. Analysts are also given the consensus analyst earnings per share forecast for the second quarter (\$0.24) and full year (\$0.78) of 2006. Next, they read the following earnings guidance statement from Gamma management, which is issued on May 31, 2006:

The company expects earnings per share for the second quarter ending June 30, 2006 to be below expectations due to weaker than expected sales. Earnings per share are estimated to be approximately \$0.18 for the quarter.

The first manipulation focuses on analysts' incentives. In the accuracy condition, analysts read the following statement: "*Assume that your only concern is the accuracy of your forecast.*" This condition is designed as a control condition to minimize analysts' conflicts of interest. In the relationship condition, analysts read the following statement: "*Assume that over time, you have gradually developed a good professional relationship with Gamma management.*" This condition is designed to allow participants to draw on their own experiences and knowledge of the benefits of a good relationship with management.¹⁰

The history of management's earnings guidance is manipulated at two levels: consistent or inconsistent pattern of downwardly-biased earnings guidance. This history is shown in a summary table of guidance issued and actual earnings subsequently announced for each period; details are shown in Table 2.¹¹ This format is designed to ensure that participants are aware of the firm's guidance track record.

¹⁰ This incentives manipulation is the same as that used effectively in Libby et al. (2007).

¹¹ This situation is analogous to one where analysts review summary records of management guidance and the subsequent earnings releases, and identify a consistent pattern of guidance bias. Our discussion with a senior director of the participating firm indicates that analysts track and keep records of the guidance issued and actual earnings reported by firms that they follow.

Insert Table 2

In the consistent condition, analysts see a table of earnings and guidance history which reveals that management's guidance is consistently lower than actual earnings by the same amount (\$0.01) in each period. This guidance error (guidance – actual) of -\$0.01 corresponds to the whole cent closest to the median guidance error in the Baik and Jiang (2006) downwardly biased guidance sample.¹² In the inconsistent condition, they see the same actual earnings per share. We impose a few conditions in designing the guidance history for the inconsistent condition. First, the error in management's guidance is to vary in each period but the average guidance error over the three periods is held constant at -\$0.01. Second, there must be evidence of a downward guidance bias in two (but not all three) periods. The reason is that a downward guidance bias in all three periods would suggest a *consistent* (rather than inconsistent) downward guidance history, even if the magnitude of the bias were to vary in each period; in contrast, having a downward guidance bias in only one of the periods might not establish any track record. Third, the magnitude of the downward guidance bias is to differ in each of these two periods. Otherwise, having the magnitude of the downward guidance bias constant in two of the periods may also suggest a consistent rather than inconsistent track record. Given these conditions, we design the inconsistent condition to be one where guidance is downwardly biased by 1 cent in Fiscal 2003, accurate with zero bias in Fiscal 2004, and downwardly biased by 2 cents in Fiscal 2005. We design the last, rather than the first, fiscal year to have the larger downward bias of 2 cents for the following reason: if the first fiscal year had the downward bias of 2 cents and the last fiscal year had the

¹² The median guidance error [(Guidance – Actual)/Absolute (Actual)] of their sample is -.079. The value selected, -\$0.01, is the whole cent nearest that amount (average guidance error = -.063 for the three periods).

downward bias of 1 cent (a downward trend in bias), a finding that analysts in the management relations condition do not adjust for guidance bias (H2) could be attributable either to the presence of incentives or the possibility that the downward guidance bias is decreasing over time. We design the second fiscal year to have zero bias in order to keep the mean guidance error across the three periods at $-\$0.01$.

Analysts are asked to provide earnings per share forecasts for the quarter ending June 30, 2006, full year ending December 31, 2006, and full year ending December 31, 2007. Additionally, they record their level of confidence in the accuracy of their forecasts (1 = not at all confident, 9 = extremely confident).

Results

Manipulation Checks

As a check on the incentives manipulation, we ask analysts whether the instructions indicate that they have gradually developed a good professional relationship with management over time, or that their only concern is the accuracy of their earnings forecasts. All analysts in their respective treatment conditions correctly respond to this question. We ask two manipulation check questions related to the track record treatment. The first question asks analysts to indicate on a seven-point scale (1: much too low; 5: about right; 9: much too high) whether in prior periods, Kappa's guidance is generally too high, too low, or about right compared to the actual earnings announcement. The mean response is 2.40 (range 1 to 4) indicating that all analysts are aware that the guidance is downwardly biased. The second question asks whether Kappa's earnings guidance in prior periods is always too low by the same amount. Every participant responds correctly to this question ("yes" for those in the Consistent condition, "no" for those in the Inconsistent condition).

Hypothesis Tests

As in Experiment 1, our primary dependent variable is the analysts' adjustment to management guidance issued in the current quarter (forecast – guidance). Table 3, panel A shows descriptive statistics for analysts' forecasts for the current quarter and adjustments to management guidance. Table 3, panel B reports results of a 2 x 2 ANOVA, with incentives and track record conditions as between-subjects factors and adjustment to management guidance in the current quarter as the dependent variable. We find a marginally significant main effect of track record ($p = 0.092$), a significant main effect of incentives ($p = 0.000$), and a significant track record by incentives interaction ($p = 0.002$).

Insert Table 3

H2 predicts that analysts' adjustment for bias in the management guidance track record will be larger when analysts have accuracy incentives than when they have relationship incentives (a main effect). Consistent with H2, analysts' bias adjustment is greater when they have accuracy incentives than when they have relationship incentives ($t=6.732$, $p = 0.000$; one-tailed).¹³ When analysts have accuracy incentives, their mean bias adjustment is +1.78 cents which is significantly greater than zero ($t = 7.098$, $p = 0.000$). However, when analysts have relationship incentives, their mean bias adjustment is +0.04 cents, which is not significantly different from zero ($t = 0.296$, $p = 0.770$). Bias adjustment is greater for analysts with accuracy incentives in both the consistent condition ($t = 3.743$, $p = 0.002$) and the inconsistent condition ($t = 5.637$, $p = 0.000$).

H3 predicts that the difference in analysts' adjustment for guidance bias in the accuracy and relationship conditions will be greater when the guidance track record is

inconsistent than when it is consistent. The difference in bias adjustment between analysts with accuracy versus relationship incentives is +2.62 cents in the inconsistent condition and +0.92 cents in the consistent condition. A planned contrast test indicates that, consistent with H3, this difference is significant ($t = 3.243$, $p = 0.002$; one-tailed).

When analysts have relationship incentives, their next-period forecasts are never significantly different from management guidance of 18 cents; mean bias adjustment is not different from zero in either the consistent condition (mean = 0.25 cents, $t = 1.149$, $p = 0.275$) or inconsistent condition (mean = -0.17 cents, $t = -1.000$, $p = 0.339$).¹⁴ Bias adjustments are always statistically greater than zero when analysts have accuracy incentives, whether the track record is consistent (mean = +1.17 cents, $t = 10.383$, $p = 0.000$) or inconsistent (mean = +2.45 cents, $t = 5.655$, $p = 0.000$). This bias adjustment is larger in the inconsistent condition than in the consistent condition ($t = 2.872$, $p = 0.015$). It appears that analysts in the accurate/inconsistent condition place significant weight on downward guidance bias of 2 cents in the most recent year and may have inferred a trend of increasing bias from the track record.

Immediately after forecasting EPS, analysts provide confidence ratings concerning the accuracy of their forecasts. Results indicate that confidence is lower in the inconsistent than the consistent track record conditions (means = 29.26 and 40.83, respectively; $F = 11.47$, $p = .0015$), and in the relationship than the accuracy incentive conditions (means = 28.75 and 40.87, respectively; $F = 10.64$, $p = .0022$). The interaction term is not significant ($F = 1.946$, $p = 0.17$). This suggests that participants are aware of the added difficulty in predicting earnings in the inconsistent guidance bias condition as well as the effect of their failure to adjust for guidance bias where relationship incentives cause a conflict of interests.

¹³ The forecasts have unequal variances, and contrast tests we report adjust for unequal variances.

Debriefing

In the post-experiment debriefing questionnaire, we ask analysts whether their relationship with clients who purchase a stock would be harmed or improved if the stock beats their most recent quarterly earnings forecast. On a scale from 1 (harm) to 9 (improve), the mean response is 8.83, significantly greater than the midpoint of 5 ($t = 69.12, p < .0001$). We also ask analysts whether their relationship with company management would be harmed or improved if they regularly issue forecasts above management earnings guidance and the company fails to meet or beat these forecasts. On the same 9-point scale, the mean response is 2.23, significantly lower than the midpoint of 5 ($t = -22.59, p < .0001$). These two results are consistent with the notion that analysts do not adjust for bias in management guidance to maintain a good relationship with management.

Finally, we ask the analysts to indicate the likelihood that Kappa's management was intentionally misguiding the market in its earnings guidance, using a nine-point scale (1: extremely unlikely; 9: extremely likely). We find a main effect of track record in that analysts in the consistent condition view management as being significantly more likely to have intentionally misguided the market than those in the inconsistent condition (means = 7.54 vs. 5.43, respectively; $F = 36.60, p = 0.000$). The main effect of incentive ($p = 0.778$) and its interaction with track record ($p = 0.169$) are not significant. These results suggest the following: (1) analysts are aware of a guidance track record indicating intentional bias on the part of management in the consistent condition; yet, those with relationship incentives fail to adjust for the bias while those with accuracy incentives do adjust; (2) uncertainty as to whether the guidance bias is intentional in the inconsistent track record condition might offer

¹⁴ We repeat our analyses using analysts' 12-month current year and succeeding year forecasts, and obtain results similar to those reported above

a convenient rationale for lack of adjustment for guidance bias when analysts face relationship incentives (e.g., elastic justification) or set a ceiling on adjustment due to the risk of causing a missed forecast.

A major finding in Experiment 2 is that analysts in the relationship condition fail to adjust for guidance bias whether the track record shows a consistent or inconsistent guidance pattern. The failure to adjust for guidance bias in the consistent bias setting is particularly striking because the consistent downward bias of one cent is observed in all three consecutive periods. In Experiment 3, we assess a potential boundary condition for this finding and focus only on the relationship condition. Specifically, we investigate whether relationship condition analysts' failure to adjust for guidance bias in the consistent and inconsistent conditions replicates when the downward guidance bias is larger at two cents rather than one cent (as in Experiment 2).

V. EXPERIMENT 3: EFFECT OF MAGNITUDE OF GUIDANCE BIAS

A larger guidance bias may have a number of effects on the results demonstrated in Experiment 2. First, it might be more difficult for analysts to justify that the bias is immaterial (Kunda 1990; Hsee 1995). In addition, failure to adjust for a larger bias will exact a more significant cost to their accuracy record (Hong and Kubik 2003). With a larger guidance bias, analysts have room to partially adjust for the bias without great risk of causing management to miss their forecasts. These arguments suggest that when the magnitude of the guidance bias is greater, analysts will be more likely to adjust, at least in part, for the bias in the consistent condition. This effect may be moderated by the consistency of the bias guidance. Analysts experiencing inconsistent bias can continue to rely on the mixed evidence of a guidance bias to justify smaller or no adjustments, and may even find the risk of causing management to

miss their forecasts (by making an adjustment to these forecasts) to be greater because of the higher variance in the track record. Thus, we anticipate that with greater guidance bias, analysts' adjustment for guidance bias will be greater in the consistent condition than in the inconsistent condition.

Method

Experiment 3 involves two treatment conditions where the guidance bias is either consistent or inconsistent over time. Participants are 34 experienced sell-side financial analysts from another investment banking, trading, and brokerage firm. Their average experience as an analyst is 7.32 years, and twenty-eight of them are Chartered Financial Analysts.¹⁵ Analysts who participate in Experiment 3 are not the same as those involved in Experiments 1 or 2.

The design is identical to that used in the relationship/consistent and relationship/inconsistent conditions in Experiment 2, except that the downward bias is doubled: consistently 2 cents for each period in the consistent condition, and 2 cents, 0 cents, and 4 cents in the inconsistent condition (see Table 4 for details).

Insert Table 4

Results

All analysts correctly answer the manipulation check questions on their relationship with management. On the question of whether prior period's management guidance is always too high, too low, or about right (1: much too low; 5: about right; 9: much too high), the mean

¹⁵ Analysts completed another experiment prior to this. We create a dummy variable that denotes the experimental condition participants are in for the earlier experiment. We obtain the same results as our main analyses whether the dummy variable is included as a covariate or another variable that interacts with our main independent variable. The dummy variable is never statistically significant in any analyses.

response is 1.97 (range between 1 to 4). Thus, all analysts are aware that the guidance is downwardly biased. Finally, participants in the consistent track record condition all agree that management's guidance is different from actual earnings by the same amount each time such guidance is provided, and participants in the inconsistent condition all disagree with this statement.

Analysts' current quarter's forecast is 19.33 in the consistent condition, reflecting an upward adjustment of 1.33 cents. As expected, this forecast is significantly higher than the management guidance of 18 cents ($t = 8.246$, $p = 0.000$). However, the adjustment of 1.33 cents is significantly lower than the full guidance bias of 2 cents ($t = -4.123$, $p = 0.001$).

In the inconsistent condition, current quarter's forecast is 18.88, which reflects an adjustment of 0.88 cents. This forecast is significantly greater than the management guidance of 18 cents ($t = 4.341$, $p = 0.001$), but the adjustment is significantly lower than the full adjustment of 2 cents ($t = -5.582$, $p = 0.000$). As predicted, the adjustment is greater in the consistent condition than in the inconsistent condition ($t = 1.791$, $p = 0.042$, one-tailed).¹⁶ Confidence in the forecasts is not significantly different between the consistent and inconsistent conditions ($t = 1.601$, $p = 0.119$).

Overall, these results indicate that even when the guidance bias is larger (-2 cents), relationship incentives continue to influence analysts' adjustments for the guidance bias. By adjusting for about 1 cent and not the entire 2 cents of bias, they appear to compromise the need to please management (i.e., not adjusting for the full bias) and attain accuracy (i.e., adjusting for half the bias). Adjustments are larger when the guidance bias is consistent rather

¹⁶ We conduct a 2 x 2 track Record (consistent, inconsistent) by experiment (Experiment 2, Experiment 3) ANOVA, with the bias adjustment as dependent variable. We find only statistically significant main effects ($p < 0.026$), but no interaction effect ($p = 0.914$). Thus, although we find a marginally significant effect of track

than inconsistent, perhaps reflecting the greater risk of causing a missed forecast in the inconsistent condition.

VI. CONCLUSION

We report the results of three experiments designed to explain why analysts do not adjust their forecasts to account for the tendency for firms to issue downwardly-biased guidance, even though they are aware of this tendency (e.g., Tan et al. 2002). In Experiment 1, we show that, in a multiple-period setting (as opposed to a single-period setting employed in prior studies), participating analysts do not adjust for guidance bias in the first period, but do adjust for downward (upward) guidance bias after experiencing two rounds of consistent downward (upward) guidance bias from the same firm. Our results suggest that one reason for the lack of full adjustment for guidance bias is that while analysts may not adjust for their beliefs concerning a general downward bias in management guidance, they will adjust after learning about a *firm-specific* guidance bias if they face no conflicting motives.

In Experiment 2, we demonstrate that when analysts are shown a track record of the firm's history of earnings and guidance, they will adjust for firm-specific guidance bias when they have incentives to be accurate, but not when they have incentives to maintain a good relationship with the firm. In the debriefing, analysts are unanimous in indicating that having the firm's actual earnings beat their forecast by a small amount improves relationships with management, but issuing a forecast above management's current guidance such that the firm fails to meet or beat the forecast harms relationships. This strongly suggests that analysts believe that maintaining a good relationship with management matters even in a post-Regulation FD environment. To the extent that maintaining good relationships with

record in Experiment 3, the results do not indicate that this effect is significantly larger than that in Experiment

management is widely held to be important by analysts, our results show that this incentive is a significant factor in explaining why analysts do not to adjust for management guidance bias, even when there is evidence of a consistent firm-specific guidance bias.

Results from Experiment 2 reveal that analysts with accuracy incentives make larger adjustments for the firm's downwardly-biased guidance track record than those with relationship incentives. In fact, analysts with relationship incentives fail to adjust at all. This difference in bias adjustment between analysts with dissimilar incentives is larger when the guidance track record is inconsistent (vs. consistent). One possible explanation is that analysts appear to selectively interpret evidence in the inconsistent track record as indicating the presence of either a larger future guidance bias (when they have accuracy incentives) or no guidance bias (when they have relationship incentives).

In Experiment 3, we find that when the magnitude of the average downward guidance bias increases to 2 cents (vs. 1 cent in Experiment 2), analysts with relationship incentives partially adjust for the guidance bias both in the consistent and inconsistent track record conditions, with the adjustment larger in the former situation. Thus, analysts do make adjustments for guidance bias even when they have relationship incentives, when the magnitude of the guidance bias is large enough such that partial adjustment does not create a large risk of causing the reporting company to miss the forecast. However, prior research indicates that guidance bias in the marketplace is relatively small (around one cent) (Degeorge et al. 1999; Baik and Jiang 2006), which suggests another reason why analysts might not adjust for this bias. Nevertheless, results from Experiment 3 reveal that when the guidance track record bias is relatively large, analysts seem to tradeoff accuracy with their desire to maintain good relationship with management.

Overall, these findings contribute to the literature on analysts forecasts by providing the first empirical evidence indicating conditions under which analysts will and will not adjust for bias in the guidance issued by management. Prior research finds that analysts generally fail to fully adjust for this bias. We show that both cognitive and incentive factors help to explain this phenomenon, and depending on the combination of guidance history consistency and analyst incentives, analysts either adjust, partially adjust, or do not adjust for guidance bias. Our study holds implications for regulators seeking to reduce analysts' conflict of interest through changes in firms' selective disclosures to analysts as well as reforms to analysts' compensation structures (Schroeder 2002). Our findings suggest that in a post Regulation FD environment, incentives to maintain a good relationship with management continue to motivate and influence analysts' judgments. Also, regulators may only be looking at part of the picture when they focus on analyst incentives (Schroeder 2002). We show that even in the presence of relationship incentives, adjustments for guidance bias are made (although partially) with a larger guidance bias, and are higher when the guidance track record is consistent rather than inconsistent over time. Finally, archival studies of responses to management guidance need to consider both accuracy and bias in management's guidance track record and analysts' differing incentives. Our results also suggest the possibility that other aspects of guidance track record such as frequency and timing may affect the impact of guidance on analysts' and investors' responses.

A caveat to interpreting our results is that our findings related to management guidance history may not generalize beyond the specific pattern and magnitude of the guidance bias we employ in our experiments. For example, the guidance error in Experiment 1 is larger than the median bias documented in Baik and Jiang (2006). In Experiments 2 and

3, we used a specific pattern of guidance error for the inconsistent guidance history condition, and our results may not generalize to other patterns of inconsistent guidance history. Another caveat is that the analysts in our experiment are in an ideal learning environment. In Experiment 1, where analysts learn about the guidance bias over time, analysts have easy access to prior periods' guidance and actual earnings, and their cognitive processing is not interrupted by intervening news releases in periods where no guidance is made. Also, in Experiments 2 and 3, the guidance track record is shown in a summary form which facilitates processing, although our discussion with analysts indicate that they do keep similar records. Presumably, adjustments, if any, would be smaller and slower in circumstances where multiple firms are followed, patterns of bias are less obvious, and intervening information announcements degrade the learning environment. However, we note that even in this ideal learning environment, analysts fail to adjust fully for guidance bias in all situations involving relationship incentives, regardless of the size of the guidance bias.

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Table 1
Experiment 1: Manipulations and Results

Experiment 1 manipulates Guidance Bias (*upwardly-* or *downwardly-biased*) as a between-subjects variable and Period (Period 1, Period 2, Period 3) as a within-subjects variable.

Panel A: Summary of Manipulations

	<u>Period 1</u>		<u>Period 2</u>		<u>Period 3</u>	
	<u>Guidance Bias</u>		<u>Guidance Bias</u>		<u>Guidance Bias</u>	
	Downwardly biased	Upwardly biased	Downwardly biased	Upwardly biased	Downwardly biased	Upwardly biased
Point Guidance	\$0.07	\$0.17	\$0.12	\$0.22	\$0.06	\$0.16
Actual EPS for quarter	\$0.12	\$0.12	\$0.17	\$0.17	\$0.11	\$0.11
Guidance Bias	-\$0.05	+\$0.05	-\$0.05	+\$0.05	-\$0.05	+\$0.05

Panel B: Mean Analysts' EPS forecasts made after guidance (standard deviations in parentheses)

Current quarter EPS	0.0706 (.0406)	0.1693 (0.0620)	0.1106 (0.1176)	0.2107 (0.1256)	0.1356 (0.0432)	0.0833 (0.0375)
Adjustment to current quarter's guidance (forecast – guidance)	+0.0006	+0.0007	-0.0094	+0.0093	+0.0756	-0.0767

Table 2
Experiment 2: Details of Track Record Manipulations

Experiment 2 manipulates two between-subjects variables: Track Record (consistent, inconsistent) and Incentives (accurate, relationship). The Track Record manipulation varies the consistency in the downward-bias associated with management guidance issued by management in prior periods. Panels A and B show the firm's guidance track record that is shown to analysts. For both Consistent and Inconsistent Track Record manipulations, the average guidance bias over the three periods is a downward bias of one cent (-\$0.01). In the Consistent Track Record manipulation, each period is associated with the same amount of downward bias of 1 cent. In the Inconsistent Track Record manipulation, Fiscal 2003 has a downward bias of 1 cent, Fiscal 2004 has no bias, and Fiscal 2005 has a downward bias of 2 cents.

Panel A: Consistent Track Record Manipulation

Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year
Fiscal 2003					
Guidance				0.14	
Actual EPS	0.06	0.12	0.18	0.15	0.51
Fiscal 2004					
Guidance		0.16			
Actual EPS	0.19	0.17	0.19	0.20	0.75
Fiscal 2005					
Guidance			0.15		
Actual EPS	0.21	0.25	0.16	0.18	0.80
Fiscal 2006					
Guidance					
Actual EPS	0.19				

Panel B: Inconsistent Track Record Manipulation

Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year
Fiscal 2003					
Guidance				0.14	
Actual EPS	0.06	0.12	0.18	0.15	0.51
Fiscal 2004					
Guidance		0.17			
Actual EPS	0.19	0.17	0.19	0.20	0.75
Fiscal 2005					
Guidance			0.14		
Actual EPS	0.21	0.25	0.16	0.18	0.80
Fiscal 2006					
Guidance					
Actual EPS	0.19				

Table 3
Experiment 2 Results

Experiment 2 manipulates two between-subjects variables: Track Record (consistent, inconsistent) and Incentives (accurate, relationship). The Track Record variable manipulates whether the firm's prior guidance is associated with a consistent or inconsistent downward bias. The Incentives variable manipulates whether analysts are informed that their only concern is the accuracy of their forecasts (accuracy incentives), or that they have developed a good relationship with the firm's management over time (relationship incentives).

Panel A: Mean Analysts' Forecasts (standard deviation in parentheses)

		Track Record			
		Consistent		Inconsistent	
Amount	Incentives	Accuracy	Relationship	Accuracy	Relationship
	<i>Information provided:</i>				
	Point Guidance	\$0.18	\$0.18	\$0.18	\$0.18
	Mean Guidance Bias	-\$0.01	-\$0.01	-\$0.01	-\$0.01
<i>Analyst forecasts:</i>					
	Current quarter EPS	0.1917 (0.0039)	0.1825 (0.0075)	0.2045 (0.0144)	0.1783 (0.0058)
	Adjustment to current quarter's guidance of \$0.18 (forecast – guidance)	+0.0117*	+0.0025	+0.0245*	-0.0017

Panel B: ANOVA Results for Adjustment to Current Quarter's Guidance

Source	SS	d.f.	MSE	F-Statistic	p-value
Track Record	0.0002	1	0.0002	2.96	0.092
Incentives	0.0037	1	0.0037	48.86	0.000
Track record x Incentives	0.0009	1	0.0009	11.34	0.002
Error	0.0032	43	0.0001		

* significantly different from zero; p = 0.000

Table 4
Experiment 3: Details of Manipulations

Experiment 3 manipulates the firm's guidance track record by varying the consistency in the downward-bias associated with management guidance issued by management in prior periods. All analysts are told that they have developed a good relationship with the firm's management over time (relationship incentives). Panels A and B show the firm's guidance track record that is shown to analysts. For both Consistent and Inconsistent Track Record manipulations, the average guidance bias over the three periods is a downward bias of two cents (-\$0.02). In the Consistent Track Record manipulation, each period is associated with the same amount of downward bias of 2 cents. In the Inconsistent Track Record manipulation, Fiscal 2003 has a downward bias of 2 cents, Fiscal 2004 has no bias, and Fiscal 2005 has a downward bias of 4 cents.

Panel A: Consistent Track Record Manipulation

Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year
Fiscal 2003					
Guidance				0.13	
Actual EPS	0.06	0.12	0.18	0.15	0.51
Fiscal 2004					
Guidance		0.15			
Actual EPS	0.19	0.17	0.19	0.20	0.75
Fiscal 2005					
Guidance			0.14		
Actual EPS	0.21	0.25	0.16	0.18	0.80
Fiscal 2006					
Guidance					
Actual EPS	0.19				

Panel B: Inconsistent Track Record Manipulation

Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year
Fiscal 2003					
Guidance				0.13	
Actual EPS	0.06	0.12	0.18	0.15	0.51
Fiscal 2004					
Guidance		0.17			
Actual EPS	0.19	0.17	0.19	0.20	0.75
Fiscal 2005					
Guidance			0.12		
Actual EPS	0.21	0.25	0.16	0.18	0.80
Fiscal 2006					
Guidance					
Actual EPS	0.19				