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MANAGERS AND ANALYSTS: AN EXAMINATION OF MUTUAL INFLUENCE

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Securities analysts' predictions of firms' earnings per share constitute important performance targets for those firms. Firm managers attempt to both influence analysts' targets and achieve the targets. We draw on the impression management literature to offer hypotheses regarding how a firm's performance relative to prior targets influences the impression management activities of issuing forecast guidance, having conference calls with analysts, and issuing press releases. We also consider the influence of these impression management activities on subsequent analysts' targets. We test this dyadic representation of impression management activities using a longitudinal panel of large firms. Findings suggest managers take a variety of actions that vary with firm performance, and that some of those actions influence subsequent analyst targets under some conditions.

In April of 2008, Jeff Immelt, CEO of General Electric Company (GE) announced that earnings per share (EPS) would be seven cents lower than expected for the quarter. Following this announcement, the Dow Jones Industrial Average fell 241 points, and retired GE CEO Jack Welch went on public television decrying Immelt's credibility. Referring directly to Immelt, Welch claimed "You made a promise that you'd deliver . . . and you miss three weeks later" (Business Week, 2008). Both the market reaction and Welch's personal reaction reflect the attention and importance that managers and investors place on relations between analysts and managers when forecasting firms' earnings.

This anecdote illustrates a broader set of concerns. Based on a survey of corporate executives, Graham, Harvey, and Rajgopal (2005) describe financial markets' attention to earnings as a "near obsession" and found that managers pay more attention to quarterly earnings targets from stock analysts than any other performance metric. In addition to markets, researchers use analyst targets as proxies for firm performance targets (Bromiley, 1991; Chen, 2008; Wiseman & Bromiley, 1996) and boards of directors do the same (Farrell & Whidbee, 2003). To meet targets, Graham et al. (2005) have found that managers' report altering health benefits, cutting R&D spending, changing the timing of acquisitions or divestures, and overproduction. The authors find that managers believe missing EPS targets increases investor uncertainty, which damages firms' reputations and stock prices.

While a firm's success depends on its relations with numerous groups of stakeholders (Friedman & Miles, 2002), security analysts filter much of the information that firms release, using such information to forecast EPS and make recommendations to investors. Researchers find that ongoing relations between security analysts and firms' managers can significantly affect those firms' stock price (Bartov, Givoly, & Hayn, 2002; Brav & Lehavy, 2003; Fulkerson & Meek, 1998). In fact, revisions of analyst forecasts influence stock price and trading volume more than any single management announcement (Ryan & Taffler, 2004). In addition, the difference between analyst forecasts and firm earnings can influence managerial compensation (Matsunaga & Park, 2001), CEO dismissal (Wiersema & Zhang, 2011), managerial succession (Farrell & Whidbee, 2003), major strategic choices (Zhang & Gimeno, 2010), and firm structure (Zuckerman, 1999, 2000).

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Differences between earnings and analysts' forecasts influence firm outcomes.

While the connections between forecast differences and firm outcomes have received substantial attention, researchers know less about how managers and analysts interact. Researchers argue that managers and analysts engage in a form of exchange; either social exchange characterized by reciprocity (Westphal & Clement, 2008), or cognitive exchange (Bitektine, 2011) based on information asymmetry (Sanders & Carpenter, 2003) and signaling processes (Basdeo, Smith, Grimm, Rindova, & Derfus, 2006). However characterized, researchers largely agree that managers attempt to project positive impressions about their firms with regard to socially constructed assets such as legitimacy, reputation, and status (Pfarrer, Pollock, & Rindova, 2010; Rindova, Williamson, Petkova, & Sever, 2005). Bitektine (2011) suggests that this uni-directional view of impression formation underestimates the importance of collective social processing, and the active role of non-manager stakeholders. While managers often try to induce positive impressions, exceeding or falling below analyst earnings targets is likely to influence such efforts and the resulting impressions.

We focus in this paper on relations between managers and analysts as a particularly important dyadic relation in impression management partly because analysts hold a unique position as information intermediaries. Rindova et al. (2005) define intermediaries as entities specializing in disseminating information. Facing complex and uncertain information, external audiences look to intermediaries to infer the value of various activities (Rao, Greve, & Davis, 2001). Rindova, Pollock, and Hayward (2006) observe that, in providing information, intermediaries "seek to provide accounts that render [these] processes coherent and comprehensible," acting both as information broadcasters and information processors, filtering, ordering, and interpreting data. Jensen (2006) argues that, as intermediaries, analysts communicate firm-related information to stockholders but may also communicate investor concerns and values to managers. Given that analysts act as intermediaries, we assume (and test empirically) that managers and analysts pay attention to the methods and content through which they signal information to each other.

Impression management research typically assumes managers of firms want to build positive impressions, or at least mitigate negative ones. For example, a manager might attempt to generate positive effect by hoping to cause analysts to undervalue or discard negative information (Pfarrer, Pollock, & Rindova, 2010). However, in some situations a manager might want to lower analysts' impressions (and so forecasts) by emphasizing negative factors or obfuscating positive events with confounding information (Graffin, Carpenter, & Boivie, 2011). At the same time, impression management may include relevant information intended to aid analysts, who have less access to firm information than managers (Sanders & Carpenter, 2003). Thus, depending on the situation, impression management activities may include providing information desired by analysts (Sanders & Carpenter, 2003), activities that distort transmissions of useful information (Graffin et al., 2011), or some combination of each.

Both the content of communication and the process of communication can carry information. For example, voluntarily publishing evaluations of environmental performance signals a commitment to environmental responsibility (Philippe & Durand, 2011). Alternatively, the capital market responds quite negatively to delays in the presentation of financial results. Consequently, managerial decisions about how to communicate important aspects of the firm also provide information in their own right. Analysts may make inferences based on the content, channel, and timing that managers use to issue messages.

In this paper, we emphasize the process of communication, examining both firms' uses of differing media of communication and analysts' responses to such use. Our study examines multiple managerial influence behaviors associated with the quarterly earnings process. Specifically, we examine three mechanisms that managers may use to influence analysts and other observers: (i) making public forecasts of their firm's performance (termed "forecast guidance"), (ii) having conference calls between management and analysts, and (iii) issuing press releases. These cover many of a firm's most important, continuing influence mechanisms. We develop hypotheses to explain both the variation in firm activity across these outcomes and the influence of these firm behaviors on subsequent analyst forecasts. Thus, we model a recursive process where, by setting firm performance targets analysts influence the context within which managers have to operate; firms report performance versus such targets; managers attempt to influence analysts subsequent targets; analysts issue new targets; and so

on. This dyadic impression management process occurs quarterly with both parties reacting to the other and neither having full control of the process. We test hypotheses regarding these processes using data on large US firms.

PERFORMANCE TARGETS AND IMPRESSION MANAGEMENT

The impression management literature examines relations among managers, analysts, and other stakeholders that create reputation and legitimacy through a collective process (Elsbach, 2003; Fombrun, 1996; Kotha, Rajgopal, & Rindova, 2001; Mishina, Block, & Mannor, 2012; Rindova et al., 2005). The impression management literature generally either assumes or implies that influence efforts bias judgments. The term "influence" emphasizes the lack of direct control on both outcomes and processes (Elsbach, 2003). In practice, management might selectively release information to influence analysts. Every firm must choose what nonrequired information, if any, to release. While some may try to bias observers, some may simply convey information that the firm sees as important. Stakeholder differences in goals and beliefs about what is important or relevant can create disagreement about information management releases.

External actors also influence information and its interpretation. Elsbach and Kramer (1996) argue that *Business Week*'s school rankings based on student satisfaction threatened the salience of existing performance measures in many business schools. By emphasizing specific performance metrics with specific weights, *Business Week* changed how the market assesses business schools and shifted student applications. As an intermediary, *Business Week* reduced administrators' ability to influence the performance criteria that potential applicants attend to, and to influence the importance given to specific criteria. For example, by including a survey of student satisfaction in a ranking, an external evaluator encourages business schools to view students as customers. By making MBA starting salaries generally available, the *U.S. News & World Report* encourages students, schools, and researchers to compare business schools on this basis. In combining the measures into overall rankings, publishers impose a weighting on the relative importance of the different metrics. Here, intermediaries significantly influence both the information available, and how stakeholders view that information. Thus, influencing actions do not necessarily imply biased judgments, but instead may reflect how external stakeholders come to determine the measurement and importance of specific firm activities and outcomes.

For managers, external forces in the analyst and investing community have made meeting quarterly earnings targets a preeminent goal (Graham et al., 2005). However, this goal can conflict with other corporate objectives such as shareholder returns, return on assets, or growth. The tension between short-term and long-term goals increases the potential for goal divergence (Marginson & McAulay, 2008). Sanders and Carpenter (2003) argue long-term maximization of wealth often requires risky or ambiguous strategic moves that conflict with short-term pressures to meet observable performance targets. Managers and analysts may use influence processes as mechanisms for negotiating their differences in valuing short-term and long-term results.

Managers' influence efforts are filtered through intermediaries (analysts and the press) which interpret and transmit information. Rindova et al. (2006) describe a semi-cooperative process where journalists and firms contribute to the creation of images of firms. The relation is only semi-cooperative because managers and journalists vie for control of narrative content. To maintain credibility with public audiences, journalists must maintain some level of objectivity as separate from their information sources, acting as intermediaries (Dyck & Zingales, 2002; Miller, 2006; Wiesenfeld, Wurthmann, & Hambrick, 2008).

A similar process occurs with security analysts. Fanelli and Misangyi (2006) describe a process where firms initiate images that analysts adopt as simplifying mechanisms for complex information, both conveying and enhancing the images. Analysts add legitimacy to firms' messages and increase the persuasiveness of the impression management activity with larger audiences.

Given the importance of interpreting firms' information to analysts, we expect analysts are sensitive to managerial influence practices. Elsbach (2003) theorizes that the medium through which information is communicated influences its interpretation by intermediaries. Philippe and Durand (2011) find that decisions to present information through different media reflect both the content sent and the commitment of managers to particular goals.

Mishina et al. (2012) propose that when signals are being judged, path dependency implies that interpretations of signals may depend on prior im-

pressions. Thos authors' analysis implies that firms may create credibility through a stream of weak-to-moderate signals, as well as through a single, strong signal. Basdeo et al. (2006) argue that the total of firm communications is a more robust indicator of firm intent than any particular signal. This reasoning appears inconsistent with the view that a credible signal must be costly and hard to imitate (Rindova et al., 2005; Sanders & Carpenter, 2003). While the latter view might hold in unitary isolated transmission and exchange, it may not hold where the parties anticipate repeated interaction. In a game theory analogy, the prisoner's dilemma poses great difficulty in a one-time interaction, but becomes much less problematic if the players know they will play the game repeatedly (Axelrod & Hamilton, 1981). The need for continued interaction may encourage credibility even in low-cost communications.

The interaction of analysts and managers offers a dyadic system. Analysts care about the predictability of firm performance, because analysts' reputations and performance depend on their prediction accuracy (Hong & Kubik, 2003; Hong, Kubick, & Solomon, 2000; Jensen, 2006). Firm managers attempt to both influence analyst forecasts and achieve them. When a firm exceeds the target, the market generally has a modest reaction, but failure to meet analyst targets generally results in substantial reductions in the firm's stock price (Cornell, 2001). Survey data demonstrates the importance of these targets to managers. For example, Graham et al. (2005) find that more than 80% of the managers surveyed report believing that missing such targets "creates uncertainty about our future prospects," while 60% claim that missing targets makes "outsiders think there are previously unknown problems." Zuckerman (1999, 2000) finds that pressure to conform to analyst impressions causes managers to make strategic changes in firms. The reaction is so significant that managers who anticipate missing forecasts make frequent "pre-emptive" announcements to soften the impact of bad news (Kasznik & , 1995; Skinner, 1994, 1997). Thus, the influence of analysts is significant enough that managers adopt specific strategies to communicate with them.

Strategies to influence analysts are feasible partly because analyst behavior is somewhat predictable. Analyst interpretations of information appear to evidence a substantial asymmetry, since analysts tend to weight negative events more heavily than positive events (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Mishina, Dykes, Block, & Pollock, 2010). Rao et al. (2001) find that analysts mimic each other, creating what they describe as "information cascades", where analysts increasingly substitute consensus among themselves for information from the firm. Additionally, strong performance by a firm can lead to excessive analyst optimism resulting in increases in future targets that the firm may have difficulty meeting (Mishina et al., 2010). In general, analysts tend to be optimistic when forecasting, predicting earnings will grow more than they do (Brav & Lehavy, 2003; Chopra, 1998; Jacob, Rock, & Weber, 2007; Richardson et al., 2004). Hong and Kubik (2003) find that career incentives encourage analysts to be optimistic when forecasting; optimistic forecasters are higher paid and more likely to be promoted.

In sum, managers' and analysts' relations involve exchanges of information that influence reputations and legitimacy. The inherent information asymmetries between managers and analysts makes these relations especially valuable (Dowling & Moran, 2012). Managers and analysts rely on a variety of information signals to overcome these differences in values and incentives. We examine three methods of transmission and impression management—forecast guidance, press releases, and conference calls.

Forecast Guidance

Managers can voluntarily issue predictions of their firm's future performance, termed "forecast guidance". Managers issuing forecast guidance signal confidence in their ability to predict and deliver future firm outcomes. By making themselves personally accountable, firms' managers absorb some of the uncertainty that analysts normally face when predicting firm performance. Since managers have more information about their firms and those firms' prospects than analysts do, issuing forecast guidance greatly simplifies the analyst's job.

Managers have a substantial interest in offering reasonably accurate, if slightly low, predictions. Accurately predicting future earnings improves a manager's reputation and subsequent career prospects. Inaccurate predictions lower the ability of the manager to influence analysts in the future, damaging future impression management. While we might expect a slight negative bias on management's part to make the target easier to hit, reasonably accurate forecast guidance is generally in both the firm's and its management's interests.

Firms that issue forecast guidance tend to continue issuing it. Graham et al. (2005) found that some managers report avoiding the issuing of forecasts because analysts quickly become dependent on them. If a firm fails to meet a forecast, analysts and investors might question management's ability. Hughes and Sankar (2013) found that forecasts by managers increase the probability of shareholder litigation; when a firm misses its forecasts, litigants can argue that the firm mislead investors. This problem exists even if the firm's performance exceeds the forecast—that is, observers may question a firm's veracity and competence when its performance either substantially exceeds or falls below a target that the firm has offered.

A firm that has substantially exceeded analysts' forecasts has several reasons to avoid issuing forecast guidance. First, that analysts' forecasts deviated greatly from the firm's performance suggests that performance is difficult to predict. Yhim, Karim, and Rutledge (2003) found that firms with less volatile earnings are more likely to issue forecasts. Second, in some cases, a firm's high performance may reflect an abnormal event making it likely the firm will have lower performance in the next period. In this case, managers may refrain from issuing guidance, thinking that the firm's stock may be better off having one negative adjustment (when actual earnings fall short of analyst forecasts) than two (when the firm issues low guidance and when actual earning fall short of analyst forecasts). Third, refraining from issuing guidance lets managers avoid publicly acknowledging anticipated lower performance—a practice quite consistent with normal procrastination (Givoly & Palmon, 1982). Mishina et al. (2010) observe that firms exceeding targets make analysts excessively optimistic and, in the face of such high expectations, managers frame discussions of the future as risky or having a high probability of failure.

A firm with performance far below analysts' predictions has somewhat similar problems to the firm with performance far above the predictions. Again, the distance between the analyst prediction and actual performance may reflect basic uncertainty about the firm's income stream; managers may avoid risking their reputations by making predictions in such uncertain environments. If the firm's low earnings came from an abnormal event, the firm has already seen its stock price decline based on those earnings. Offering higher forecast guidance risks encouraging the analyst community to raise their predictions of firm performance to levels the firm cannot attain. Managers may see themselves as better off easily exceeding a low analyst forecast rather than risking missing a higher forecast. While analysts will generally adapt to recent performance, they may reflect anchoring and adjustment by not adapting all the way to recent performance if that performance was well below their predictions (Bromiley, 1987). Issuing forecast guidance predicting performance below analysts' predictions then risks negative market reactions to the guidance, the subsequent adjustment of analysts' forecasts, and, potentially, subsequent actual low performance.

In short, performance differing greatly from prior predictions should reduce the likelihood the firm will issue forecast guidance since such guidance puts management's reputations as competent managers and as information providers at risk. It can also create multiple opportunities for negative impressions, which are far more influential than positive ones.

Hypothesis 1. The extent earnings diverge above or below analyst forecasts decreases the likelihood managers issue forecast guidance.

Press Releases

Press releases cover a variety of topics with varying objectives. Some press releases simply provide routine information. Others offer information that would not otherwise be public regarding the firm. While few firms issue forecast guidance more than once in a quarter, and the median firm in our sample of large firms holds one conference call per quarter, the median firm in our sample issues 37 press releases in the same period. A press release can address outcomes already achieved or make claims that outsiders would have difficulty assessing. Thus, the press release does not inherently create risks for management that it may not deliver (as forecast guidance does). However, not inherently creating risks does not mean such actions lack effect. Discussing or releasing additional information increases perceptions of transparency and appropriateness (Kasznik & Lev, 1995; Skinner, 1994), and may influence capital market perceptions regarding a variety of capabilities within a firm, including technological progress.

Press releases differ from forecast guidance in important ways. Forecast guidance emphasizes a particular set of targets that directly relate to predictions that analysts will produce. After the quar-

ter, outsiders can readily judge the accuracy of a firm's forecast guidance. In contrast, many press releases deal with less well-defined outcomes and deal with current or past actions. Management has full control over the content and presentation of a press release (although not over interpretations of the press release). Management usually has time to employ experts who carefully construct the press release's message. The press release does not give analysts a chance to question or probe the release's content. Press releases offer the firm its best chance to put forward a particular vision of the firm—in order to make its case to analysts. Press releases give management an opportunity to explain results, whereas guidance alone does not.

Some firms aggressively provide information about themselves to reduce information-gathering costs (Aldrich & Fiol, 1994; Gamson, 1994). Managers provide press releases to reduce an outsider's cost of acquiring information, often portraying the firm as distinctive, proactive, and interesting (Rindova et al., 2006). Such voluntary information encourages analysts to broaden the data used to formulate forecasts. Westphal and Zajac (1998) find that firms benefit from announcing plans to adopt long-term incentive programs even if they never actually initiate such programs; managers can claim an intention to act that influences analysts, without subsequent action. Basdeo et al. (2006) argue that the total number of press releases reasonably indicates a firm's level of effort in influencing analysts.

Thus, the number of press releases that a firm issues should align with the firm's perception of the need to explain itself. Firms most need to explain themselves when data suggest a misunderstanding of the firm. One indication of such misunderstanding is a substantial difference between the analysts' predictions and the firm's actual performance, so the number of press releases should rise with extreme (high or low) performance relative to forecasts.

In addition, firms with low performance have a greater need to explain themselves than firms with high performance. While a firm with high performance may want to explain itself to help analysts understand why their perceptions differed from the outcome, high performance is overall a good thing; management does not have to apologize or find excuses for high performance. In contrast, a firm with low performance faces pressures to justify such performance (see, for example Barr, Stimpert, & Huff (1992)). Thus, performance relative to analyst forecasts should have a smaller influence on the number of press releases when performance exceeds the forecast than when it is below.

Hypothesis 2a. The extent that earnings diverge (above or below) analyst forecasts increases the number of press releases that managers subsequently issue.

Hypothesis 2b. The extent that earnings diverge from analyst forecasts should have a larger influence on the number of press releases that managers subsequently issue when earnings are below rather than above analyst forecasts.

Conference Calls

Elsbach (2003) notes the importance of verbal accounts as symbolic actions that organizations use to manage perceptions. In conference calls, the CEO or another senior manager participates in a conference call with the analysts who follow the firm. Brown, Hillegeist, and Lo (2004) find that firms hosting conference calls in conjunction with earnings announcements greatly reduce forecast errors and dispersion in subsequent forecasts. Conference calls often attempt to influence external perceptions of past events by shifting responsibility or by reframing events in positive terms (Wade, Porac, Pollock, & Graffin, 2006) or in a broader strategic perspective (Elsbach, 2003), or by providing justifications and explanations (Jensen, 2006). Brown et al. (2004) have found that managers seldom reveal new information in conference calls, but that the calls give analysts time to discuss existing information with managers. Furthermore, by making a call, managers demonstrate their personal commitment to attending to analysts' concerns.

As firm performance diverges from analyst targets, so the firm's need to explain itself increases. The divergence of performance from target indicates a lack of understanding of the firm by the analyst community. Conference calls serve to combat that lack of understanding, and so should increase with the divergence of firm performance from the target.

Although both press releases and conference calls offer a firm the opportunity to explain itself, they differ in one important aspect: the firm has full control over press releases, picking topics and presentation with great care, whereas, in contrast, management faces pressures to respond extemporaneously to questions in conference calls. Confer-

ence calls give analysts the opportunity to pressure management to clarify positions or address issues that management would rather avoid. Furthermore, a conference call makes the manager involved in the call directly responsible for any statements he or she makes. Personal responsibility and the lack of control therefore make conference calls riskier than press releases. Conference calls also require more of the manager's time. In contrast to approving a press release—usually a few hundred words at most—a manager must devote time to both preparing for and undertaking a conference call.

Within impression management, justifications are attempts to "minimize the perceived negativity of an event" (Elsbach, 2003: 307). Shapiro, Buttner, and Barry (1994) find that orally communicating negative information leads to more positive responses than written communication. While a firm with performance substantially above or below analysts' forecasts needs to explain itself, firms with low performance have a greater need to explain themselves than firms with high performance. Given the cost and risk of conference calls, the greater need to explain low performance should result in conference calls reacting more to negative events than positive ones. When performance is unexpectedly high, management should feel less reason to justify its behavior than when it unexpectedly low. Graham et al. (2005) find that when organizations miss targets, managers spend more time justifying past actions to analysts instead of promoting future opportunities. Consequently, we expect that deviations below analyst targets will have a greater influence on the conference calls than deviations above targets.

Hypothesis 3a. The extent that earnings diverge (above or below) from analyst forecasts should positively influence the number of conference calls that managers subsequently undertake.

Hypothesis 3b. The extent that earnings diverge from analyst forecasts should have a larger influence on the number of conference calls that managers subsequently make when earnings are below rather than above analyst forecasts.

Impact on Predictions

So far, we have addressed management's efforts to influence analyst impressions. Now we turn to the next obvious question: "Do these efforts to influence analysts actually work?"

Analysts are generally optimistic. Indeed, within our sample, the forecast for quarter *t* made in quarter *t*-1 is greater than the forecast for quarter *t* done in quarter *t*-2 more than 95% of the time, even though firms have performance below the target 29% of the time. This indicates that analyst forecasts generally increased over time regardless of prior target attainment. Consequently, even for firms with performance below target, the question is how the firm will influence the amount of increase in the target.

Analysts should view management's activities skeptically. As external commentators, analysts have different goals and incentives than managers. Analysts care little about the long-term performance of any one firm; most forecasts deal with earnings in the current quarter or year. While analysts prefer to cover successful firms, analysts can shift their attention from a failing to a prospering firm without incurring large costs. Analysts are rewarded for accurate short-term forecasts; even where they offer long-term predictions, these receive much less attention than the short-term predictions. In contrast, managers cannot switch from one firm to another as easily as analysts can change which firms they cover. Managers are not concerned so much about the accuracy of an analyst's forecast as about the firm's ability to attain or exceed it.

Managers are a primary source of information for analysts. Lim (2001) argues that managers can influence analysts using access to future information as leverage. By building relations with managers, analysts hope to gain insight into their values, characters, and priorities. A deeper understanding of managers allows analysts to read between the lines of official statements and infer valuable information from subtle phrases and actions. Analysts who build relationships with managers can improve their forecast accuracy with these additional insights. However, legal changes in the United States beginning in 2000 have reduced the ability of firms to discriminate among analysts. We discuss this further below.

Analysts face a complex, challenging task in discerning what information is salient. Their predictions reflect numerous biases (Zhang, 2010). In common with more general work on judgmental forecasting (Lawrence, Goodwin, O'Connor, & Önkald, 2006), greater complexity increases the likelihood that the forecasts will be influenced by factors

that the forecaster may not even consider germane. Tverksy and Kahneman (1974) offer a particularly stark example of this phenomenon. In their experiment, subjects watch the experimenter spin a wheel with numbers from 0 to 100. Subjects were asked to estimate the value of a quantity (e.g., percentage of African countries in the United Nations) by moving up or down from the number spun. The number spun significantly influenced the estimates. Rewards for accuracy did not reduce the effect.

Indeed, much of behavioral decision theory deals with the ability of experimenters to change subject behavior in gambles by modifying factors that do not change the gamble substantively, for example, by changing the reference point (Kahneman & Tversky, 1979). Management researchers have found similar effects in more complex situations (Holmes, Bromiley, Devers, Holcomb, & McGuire, 2011).

Recognizing that management has substantially better information about the firm and its prospects than any external observer, analysts must give serious attention to management communications whether forecast guidance, press releases, or conference calls. These impression management vehicles sometimes communicate information that heretofore the firm held in confidence.

The desire of analysts to build relations with managers combined with the difficulty of discerning relevant information suggests that managerial impression management may influence analysts. However, just as managers' decisions to engage in impression management vary with context, so should changes in analysts' forecasts.

We do not make a directional prediction for firms with performance near the analyst targets, but focus instead on firms with extreme performance. Firms with performance near the analyst targets might want to influence subsequent targets positively or negatively, or even not at all. However, for firms with high performance deviations from forecasts, we offer directional hypotheses.

If a firm greatly exceeds analyst forecasts, analysts generally increase subsequent forecasts substantially. Managers gain little from analysts making higher forecasts, but can lose substantially if the firm cannot meet such higher forecasts. Consequently, managers take preemptive actions to mitigate forecast increases (Cotter et al., 2006). They do so by offering conservative descriptions of the firm and its expected accomplishments and highlighting negative aspects of the firm's environment. Managers can remind analysts of earlier quarters, business cycles, or other external factors to diminish the effect of the most recent target on future targets (Brav & Lehavy, 2003; Chen, et al., 2002). When managers frame earnings announcements cautiously or conservatively, analysts are likely to factor such framing into their revisions of future forecasts. Caution from managers may signal a lack of confidence in firms' future prospects, which analysts would view as a relevant signal. Thus, analysts are likely to respond to cautionary framing by making smaller increases in forecast revisions than they would have in the absence of influencing actions.

The firm has a much greater need to frame the firm's prospects negatively if firm performance greatly exceeds analyst forecasts than when firm performance is near the analyst target. Such a large positive deviation is likely to cue analysts to forecast even higher, assuming that whatever resulted in the surprisingly high performance will continue. In addition, a single quarter of extremely high performance might derive from abnormal events. In this case, raising the target even to the abnormal performance level may make it infeasible for the firm to achieve the next quarter. Thus, impression management is most likely to reduce future targets when the current performance is substantially above the current target.

Hypothesis 4. For firms with earnings significantly above analyst targets, forecast guidance, press releases, and conference calls negatively influence the change in subsequent analyst forecasts.

Note that the immense majority of such changes (95%) are positive, so the impression management activities will reduce the magnitude of the increase of analyst forecasts.

As noted above, analysts tend to increase their targets over time, even for firms that miss their targets. In firms that have missed a target, managers may want to limit the amount analysts increase their forecasts. When firms miss targets, analysts often demand that managers explain what went wrong; yet while a missed target causes a negative reaction, analysts are still likely to be receptive to managers. Failure to achieve forecasts creates uncertainty, and analysts look to managers for information to reduce that uncertainty. Analysts ask for explanations or demand action, but in either case, missed targets cause analysts to focus more on managers than they would otherwise (Graham

et al., 2005). The increased focus of attention increases the opportunity for managers to engage in impression management. For instance, managers may increase press releases to create strategic noise (Graffin et al., 2011).

In addition, many observers claim analysts are predisposed to be optimistic even for firms that have missed forecasts. O'Brien, McNichols, and Lin (2005) show that analysts' affiliation with investment banks, independent of performance, partly drives optimism. Analysts have issued optimistic appraisals to facilitate perceptions of strong performance among investors of firms that their employers endorse (Ertimur, Sunder, & Sunder, 2007). A predisposition to optimism does not mean that analysts will not react to missed targets. However, it does mean that managers' efforts may moderate such reactions.

As with positive performance versus forecasts, we do not offer a directional prediction for firms with performance near to but slightly under the target, but focus instead on firms with performance well below target—the firms' objectives in communicating with analysts are not readily predictable for firms just below the forecast.

In firms with performance well below the target, managers want to encourage the analysts to lower targets as much as possible in order to increase the likelihood that the firm can meet the new targets. This is particularly problematic since analysts tend to increase forecasts over time, which would make future targets even more difficult than the current targets the firm has failed to meet.

Hypothesis 5. For firms with earnings significantly below analyst targets, forecast guidance, press releases, and conference calls negatively influence the change in subsequent analyst forecasts.

DATA AND METHODS

Sample

In October 2000, the U.S. Securities and Exchange Commission (2000) enacted the Regulation for Fair Disclosure (Reg. FD) that made material disclosures observable to the public. We began our sample in January of 2002 and ended in December 2007. This window avoids changes in communication that occurred during the transition to the new Reg. FD standards and the market instabilities that began in 2008.

Beginning with the firms in the Standard and Poor's (S&P) 500 at the start of the 2002 calendar year, we collected analyst quarterly forecast announcements and firm earnings announcements. The basic unit of analysis became the firm quarter. To accurately measure forecast error and dispersion, we followed Matsunaga and Park (2001) and Matsumoto (2002) by limiting the study to firms that had at least three different analyst forecasts available. We excluded firms from the financial industries (SIC 5999–7000) and unclassified (9999) because estimating some of the control variables is problematic for these industries. Following Sanders and Carpenter (2003), we chose a random sample of 120 firms on which we coded the number of press releases (which required manual collection). Due to missing data, the final random sample including press releases consisted of 116 firms. The period 2002–2007 provided 24 quarterly observations per firm, so the overall sample was roughly 2300 quarterly observations for the hand collected data and 7000 for the remainder (with differences due to some missing accounting and forecast data and estimation techniques).

The data come from several sources. Analyst forecasts came from the detailed recommendations of the Institutional Broker Estimate System (I/B/E/S). Information regarding forecast guidance came from the First Call database. At the time of data collection, BestCalls.com maintained a larger and more exhaustive database of corporate conference calls, which included calls unrelated to earnings announcements. Conference call data come from the BestCalls[1] database. Financial data came from the Compustat Fundamentals Quarterly database. Institutional ownership data came from Thomson Reuters CDA/Spectrum Institutional (13F) Holdings database. Data for the number of press releases and in relation to CEO succession were from Lexis Nexus, and verified through the Hoover's Pro Online database.

Timing

We identified earnings announcement dates by corroborating wire service/press release announce-

[1] BestCalls.com was acquired by Shareholder.com in 2003. While formerly operating as an independent subsidiary, its services are now no longer maintained on an independent website.

ment dates in the First Call database with I/B/E/S estimates and company press releases in Lexis Nexus. Firms typically announce quarterly earnings between two and three weeks after the financial quarter ends; for fiscal year end, announcements usually occur two to three months after the year's end. The delays between quarter-end and year-end announcements vary between firms and within firms over time. While discussing what happens in one quarter or the next, we refer to the periods between earnings announcements, not the calendar or fiscal quarter. The mean time between report dates was found to be 92 days, with a standard deviation of about 13 days.

The majority of analyst forecasts occurred shortly after managerial earnings announcements. In the sample, 43% of analyst forecasts happened in the three days after the prior period announcement and 51% happened within 10 days of the prior period announcement. The remaining forecasts were distributed evenly across the last approximately 80 days prior to the next announcement.

Most of our hypotheses use the difference between analyst targets and firm performance to explain subsequent impression management activities. We measured this difference by the difference between the last analyst forecast of earnings before an earnings announcement and the announced earnings (see DeFond & Park, 2001). Using the last analyst forecast issued before the earnings announcement minimized differences between forecasts and announced earnings, making the sample more conservative, while minimizing the potential for endogeneity. Control variables used information reported in conjunction with earnings announcements.

To assess whether managerial influence activities influenced changes in analyst forecasts, we relied on the fact that analysts forecast more than one period in advance. We averaged analyst forecasts made in a window immediately following an earnings announcement for performance two quarters into the future. We also averaged analyst forecasts made in the same window immediately following the next earnings announcement for performance one period into the future. Thus, we had the average analyst forecasts two periods (roughly six months) prior, and one period (roughly three months) prior to an earnings announcement. We were then able to take the difference between these two averages to examine the change in the forecast. For example, if a firm reported first-quarter earnings on April 15, we calculated the average of analyst predictions for third-quarter earnings generated on April 16 and 17. After the firm reported second-quarter earnings, assumed to be on June 15, we calculated the average of analyst predictions for third-quarter earnings generated on June 16 and 17. We then explained the difference in the two third-quarter predictions based on influence activities between April 17 and June 15. We estimated the model using various windows over which we averaged the analyst forecasts − 2 days 6 days 15 days and 90 days after an earnings announcement.

Measures: Dependent Variables

The variable known as *forecast guidance* was taken to equal unity if the firm provided point estimate forecasts, indicated an interval within which it expected future performance to lie, or made a material statement regarding an existing analyst forecast, and zero otherwise. This was the most explicit form of communicating with analysts. Approximately 44% of observations of quarterly figures included a forecast guidance.

The *conference calls* variable was defined as a count of conference calls between management and analysts. Conference calls are announced to the public, generally include statements by firm managers (either the CEO or COO or both), and management's responses to analyst questions. About three-quarters of conference calls occurred in conjunction with earnings announcements.

For the variable *press releases*, its distribution had an extremely long positive tail, with a mean of 37 and a maximum of 1,794. Consequently, we used the natural logarithm of the total number of firms' press releases in each period instead of the number of press releases.

To test Hypotheses 4 and 5, a second model examined the effect of impression management on changes in analysts' forecasts.

Variable *forecast change* was defined as the mean analyst earnings per share (EPS) as forecast for quarter t generated in quarter t-1, minus the mean analyst EPS as forecast for quarter t generated in quarter t-2. See the discussion above for additional explanation of the variable's construction.

Measures: Independent Variables

While we have discussed the three variables which are dependent variables in Hypotheses 1–3 and explanatory variables in Hypotheses 4 and 5

(forecast guidance, press releases, and conference calls), the two additional independent variables of theoretical interest deal with the difference between the analyst forecast of earnings and actual reported earnings.

Variable *above target* was defined as the EPS as announced by management minus the analyst consensus forecast when EPS exceeded forecasts (i.e. (Earnings − Forecast if Earnings − Forecast) > 0), and zero otherwise. High values of *above target* correspond to earnings far above forecasts. Differences greater than \$1 were excluded from our sample, but in fact more than 95% of the *above target* differences were smaller than \$0.15, with a mean difference of \$0.03.

Similarly, *below target* was defined as the analyst consensus forecast minus EPS as announced by management if the forecast exceeded EPS (i.e., (Forecast − Earnings) if (Earnings − Forecast) < 0) and zero otherwise. Note the reversal of variables as compared with *above target*. This reversal allows for consistency in interpretations of coefficients. High values of *below target* correspond to earnings far below forecasts. As with *above target*, differences greater than \$1 were excluded from the sample.

Our models also included several control variables. We estimated and reported results with the full set of control variables. Separate estimates without the controls gave similar results.

The variable *analyst consensus* as defined as the standard deviation of analyst forecasts in the previous reporting period. This continuous measure captured the level of disagreement or variation across analyst forecasts for each firm-quarter.

The variable known as *fourth quarter effect* was a binary variable equal to unity if the period fell at the end of the calendar year and zero otherwise.

That termed *change in number of forecasts* was defined as the number of analyst forecasts in the period minus the number of forecasts in the previous period. This measure captured the change in level of attention that analysts devoted to the firm. Since analyst attention associates with higher stock prices, managers may interpret a loss of analyst attention negatively.

Number of analyst forecasts equaled the number of forecasts that analysts issued during the period. The number of forecasts can affect dispersion in analyst forecasts. In addition, the number of forecasts analysts issue may increase managers' perceptions of the importance of impression management, as such activities would reach a larger audience.

Earnings management was the deferred component of each firm's income tax expense scaled by quarterly total assets. Deferred tax expense reflects managers' timing decisions of when to recognize expenses, and it is used in accounting research to detect earnings management.

Firm size was the natural log of the market capitalization of each firm in each period. We calculated market capitalization as the product of the number of shares outstanding multiplied by the share price at the close of the fiscal period. We measured firm size by market capitalization as this measure is more salient to analysts and institutional investors than assets.

The variable known as *institutional ownership* (*IO*) is the percentage of stock owned by large institutions. We relied on data from Bushee and Noe (2000) and Bushee (2001) to divide institutional investors into three sub-classifications based on prior investment behavior. "Transient IO" refers to institutions with high levels of portfolio turnover and a short-term focus. "Transient institutions" keep low stakes in many firms so that their trading does not adversely influence stock prices. "Dedicated institutions" have lower turnover and much larger stakes in firms; they tend to react less to public information disclosures because they take large stakes in firms and follow a buy-and-hold rather than an active trading strategy. "Quasi-indexers" have low portfolio turnover but high levels of portfolio diversification. Both dedicated institutions and quasi-indexers should react less to public disclosures than transient institutions. We sum total ownership in each category and divide by the total number of shares outstanding to get the percentage of stock ownership by type of institution for each firm period.

Estimation

The first part of this study (Hypotheses 1–3) uses differences between analyst forecasts and actual announced earnings to explain managers' impression management activities. The dependent variables are specific impression management activities by managers. We estimate separate models for each activity. The models allow for simultaneity among the impression management activities. We address three dependent variables: Forecast Guidance, Conference Calls, and Press Releases.

The models we use to test the hypotheses are similar to the causal models of risk taking developed by Bromiley (1991). The subscript ($_{t2}$) indi-

cates that influencing actions occur after determination of the differences between analyst forecasts and actual EPS. The amount of impression management activity undertaken by managers depends on the extent to which managers meet analyst targets. The models take the form:

$$\begin{aligned} &\textit{impression management activity}_{i,t2} \\ &\quad = b_0 + b_1\ \textit{above target}_{i,t1} + b_2\ \textit{below target}_{i,t1} \\ &\qquad + b_3\ \textit{control}1_{i,t1} + \ \ldots\ + b_{\mathrm{n}}\ \textit{control}N_{i,t1} + e_{i,t2} \end{aligned}$$

where the observations are for firms (i) over quarters (t).

We had roughly 2,400 observations for the hand-collected variable (*press releases*) and 7,400 for the variables readily available from archival sources (*forecast guidance* and *conference calls*). The estimation technique varies with the dependent variable. We discuss each in turn.

For the issuance of *forecast guidance*, we have a binary dependent variable. Consequently, we estimate it using a Probit model allowing for endogeneity of the log of *press releases* and number of *conference calls*. The model includes dummy variables for each firm. Because we hand-coded data on a random sample of firms, we have many observations with complete data except for the data on *press releases*. We handled this by using multiple imputations with 50 imputed data sets (Stata, 2007) to handle missing data for this variable. To identify outliers, we estimated a logit model of the exogenous variables, and calculated the dbeta indicator of influential observations (Stata, 2007). We dropped observations with dbeta values in the top 1% of the indicator's distribution. Since the dummy variables fully explained firms that either issued or did not issue guidance in all observed periods, with the imputed variables, the number of observations is approximately 6,664 (with variation of 1 or 2 observations across the various imputed datasets).

Variable *press releases* is countable, but neither the number of press releases nor its log was distributed appropriately in our sample for a Poisson or negative binominal estimator. For example, *press releases* has only 38 out of 2,800 observations with values below five, 867 values between 15 and 35, and a long positive tail with a maximum of 1,794 press releases in one quarter. To compensate for the long positive tail, we estimated a model of the log of *press releases* using a two-stage least-squares regression estimator with robust standard errors, fixed effects for firm, and allowing for endogeneity of *forecast guidance* and *conference calls*. Estimates using a random effects model gave similar results to fixed effects. To handle outliers, we dropped observations with Cook's D in the top 1% of the indicator's distribution.

Variable *conference calls* is also countable, and it that took values from 0 to 17 in our sample. However, *conference calls* is not distributed appropriately for a Poisson or negative binominal model in that our data included far fewer zeros than either distribution assumes. Furthermore, panel negative binominal estimators with endogenous regressors are not readily available. Consequently, we estimate a model for *conference calls* using a two-stage least-squares regression estimator with robust standard errors, fixed effects for firm, and allowing for endogeneity of *press releases* and *forecast guidance*. Estimates using a random effects model gave similar results to fixed effects. Because we have many observations with complete data except for the data on Press Releases, we used multiple imputations with 50 imputed data sets (Stata, 2007) to handle missing data for this variable. We dropped observations with Cook's *D*-values in the top 1% of the distribution.

In the analysis of the change in analyst forecasts, *forecast change* is a continuous dependent variable. Consequently, we estimated the model using regression with fixed effects for firms. Since Hypotheses 4 and 5 propose that the influence of impression management on analysts' forecasts differs depending on how much firms exceed forecasts or fall below prior targets, we interact each influence activity with *above target* and *below target.*

RESULTS

Hypotheses 1–3 propose that differences between analyst forecasts and reported earnings influence managers' impression management activities. Thus, the dependent variables of interest are *forecast guidance*, *conference calls*, and *press releases*.

Table 1 reports the descriptive statistics and correlations. Table 2 reports parameter estimates for each impression management dependent variable. Note that the estimation technique for *forecast guidance* differs from the technique used for the other dependent variables, as outlined above.

Hypothesis 1 proposes that the positive and negative amount that earnings diverge from the analysts' forecast negatively influences the level of

TABLE 1
Descriptive Statistics and Correlations

Variable	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 *above target*$_{t-1}$	0.03	0.06	1.00													
2 *below target*$_{t-1}$	0.01	0.05	−0.13	1.00												
3 *analyst consensus*$_{t-1}$	0.04	0.08	0.30	0.22	1.00											
4 *fourth quarter*$_{t-1}$	0.24	0.43	0.01	0.00	−0.00	1.00										
5 Δ *number of forecasts*$_{t-1}$	0.06	3.45	−0.01	0.02	0.02	0.09	1.00									
6 *number of forecasts*$_{t-1}$	13.97	7.35	−0.04	−0.00	0.03	0.03	0.23	1.00								
7 *earnings management*$_{t-1}$	0.04	0.06	0.06	0.08	0.10	−0.00	0.01	−0.07	1.00							
8 *Firm Size*$_{t-1}$	9.42	1.27	−0.06	−0.09	−0.07	−0.02	−0.01	0.47	0.09	1.00						
9 *IO − Transient*$_{t-1}$	0.09	0.11	−0.01	−0.02	0.01	0.08	0.02	−0.04	−0.09	−0.15	1.00					
10 *IO − Quasi-Indexer*$_{t-1}$	0.27	0.24	−0.01	−0.02	−0.01	−0.04	−0.01	−0.01	−0.02	−0.04	0.11	1.00				
11 *IO − Dedicated*$_{t-1}$	0.04	0.07	−0.03	0.04	0.02	0.02	0.01	0.09	0.00	−0.01	0.15	0.08	1.00			
12 *forecast guidance*$_{t}$	0.44	0.50	−0.12	−0.15	−0.15	−0.00	−0.00	0.06	−0.09	−0.01	0.04	0.03	−0.01	1.00		
13 *Log* (*press releases*$_{t}$)	3.77	1.23	−0.01	−0.02	−0.02	−0.01	0.00	0.45	−0.12	0.70	−0.08	−0.07	0.02	−0.02	1.00	
14 *Conference Callst*	1.71	1.19	−0.07	−0.04	−0.07	0.00	0.02	0.31	−0.12	0.29	−0.06	−0.01	0.02	0.08	0.32	1.00

Correlations larger than 0.04 are significant at the level of $p < 0.05$, and those larger than 0.05 are significant at the level of $p < 0.01$ (2-tailed probability).

$n = 2447$

forecast guidance. In Table 2, the data strongly supports Hypothesis 1 for firms with performance above the analyst forecasts (b = −2.72, $p < 0.001$) and for firms with performance below the analyst forecasts (b = −3.14, $p < 0.001$). To provide an indication of the size of the effect, we consider the change in expected probability of *forecast guidance* for different values of *above target* and *below target*. Moving from the 10th percentile of *above target* to the 90th percentile (*above target* of .01–.12) increases the probability of *forecast guidance* by 10% and moving from the 10th percentile of *below target* to the 90th percentile (*below target* of .01–.13) increases the probability of *forecast guidance* by 13%.

Hypothesis 2a proposes that the positive and negative amount that earnings diverge from the analysts' forecast positively influences the number of *press releases* a firm issues. The data supports Hypothesis 2a with parameters of 0.402 ($p < .01$) for *above target* and 0.55 ($p < .01$) for *below target*. The number of *press releases* increases with the amount that earnings diverge from analysts' forecast. Hypothesis 2b proposes that the influence of *below target* will be greater than the influence of *above target*. While the parameter attached on *below target* is greater than that for *above target*, the difference just misses statistical significance at the .10 level ($\chi^2(1) = 2.48$, $p = .12$). Moving from the 10th percentile of *above target* to the 90th percentile (*above target* of .01–.12) increases expected press releases by 2.1 or about 5.7% of the median number of press releases (37). Moving from the 10th percentile of *below target* to the 90th percentile (*below target* of .01–.13) increases expected press releases by 4.4 or about 11.8% of the median number of press releases (37).

Hypothesis 3a proposes that the amount earnings deviate from the analysts forecast positively influences the number of Conference Calls a firm undertakes. The results strongly support Hypothesis 3a for *below target* (b = .505, $p < .01$) but not for *above target* (b = −.039, n.s.). Hypothesis 3b proposes that the influence of *below target* will be greater than the influence of *above target*. The results strongly support H3b rejecting the hypothesis that the parameter on *above target* equals the parameter on *below target* in all 50 imputed dataset estimates (some $p < .05$ and some $p < .10$). Moving from the 10th percentile of *below target* to the 90th percentile (*below target* of .01–.13) increases expected press releases by .07 or about 7% of the median number of press releases (1).

Responding to a concern about routine conference calls, we explored the conference call results further. Many firms will have no conference calls or just one call in a quarter, and do this routinely. Then a set of firms has more than one call. We dropped all observations with zero or one conference call and reran the analysis using the same regression with dummy variables allowing for endogeneity as used above. In the new analysis, neither *above target* nor *below target* were statistically significant. We then created a dummy variable that

TABLE 2
How Differences Between Forecast and Actual Performance Affect Managers' Impression Management Activities

Variables	(1) *Forecast guidance*	(2) *Press releases*	(3) *Conference calls*
above target$_{t-1}$	−2.72***	0.40**	−0.04
	(0.38)	(0.13)	(0.19)
below target$_{t-1}$	−3.14***	0.55**	0.51**
	(0.55)	(0.20)	(0.24)
analyst consensus$_{t-1}$	−2.499***	−0.042	−0.031
	(0.38)	(0.16)	(0.14)
fourth quarter$_{t-1}$	−0.01	−0.01	0.03
	(0.04)	(0.02)	(0.03)
Δ *number of forecasts*$_{t-1}$	−0.00	−0.00	−0.01**
	(0.01)	(0.00)	(0.00)
number of forecasts$_{t-1}$	0.01**	0.01	0.03***
	(0.00)	(0.00)	(0.00)
earnings management$_{t-1}$	−1.49**	1.23	−0.69*
	(0.52)	(0.87)	(0.31)
Firm Size$_{t-1}$	−0.04	0.20***	0.07**
	(0.04)	(0.05)	(0.02)
IO − Transient$_{t-1}$	0.40*	−0.06	−0.50***
	(0.18)	(0.09)	(0.11)
IO − Quasi-Indexer$_{t-1}$	0.12†	−0.01	0.06
	(0.08)	(0.03)	(0.05)
IO − Dedicated$_{t-1}$	0.16	−0.19	0.00
	(0.30)	(0.16)	(0.19)
Forecast guidance$_t$		0.07	0.15***
		(0.17)	(0.06)
Log (*Press Releases*$_t$)	−0.03		0.14***
	(0.05)		(0.03)
conference calls$_t$	0.23***	0.16†	
	(0.07)	(0.08)	
N (Firm Quarters)	6664	2,422	7377
Number of Firms	381	116	416

Standard errors in parentheses. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.1$.

This table represents four different dependent variables. While all models utilize dummy variables for firms, estimation techniques vary. Please refer to the Methods section.

equaled one for firm-quarters with more than one conference call and zero otherwise. Using a probit analysis with dummy variables for firm allowing for endogeneity as used on the *forecast guidance* above, we found results that mirrored the initial results in Table 2; a statistically insignificant coefficient attached to *above target* and a positive, statistically significant, coefficient on *below target* ($p < .05$). Consequently, we conclude that *below target* had a significant role in determining whether a firm has more than one conference call, but does not differentiate among the population with more than one call.

Some of the control effects are worth noting. *Analyst consensus* reduces the issuance of *forecast guidance*—potentially, greater consensus may result in less need for guidance. The change in number of forecasts negatively influences *conference calls*. The number of forecasts increases two of three impression management activities: as more analysts follow a company, the company is more likely to offer forecast guidance and have more conference calls. Earnings management decreases the same two impression management activities: as the firm performs more earnings Management, the company is less likely to offer forecast guidance and hold conference calls. Firm size increases the number of Press releases and conference calls. Transient institutional ownership increases forecast guidance and decreases conference calls.

The analysis also supports the simultaneous modeling that included the other impression management activities as explanatory variables for each of the impression management activities. The statistically significant simultaneous influences are all positive. We suspect this means that a firm's desire for impression management influences all three dependent variables.

Table 3 examines the influence of impression management activities on changes in analyst forecasts. The results generally agree across all four windows over which we average analyst forecasts (ranging from 2 days to 90 days). For simplicity, we will discuss the 6-day change.

Since the hypotheses deal with the influence of impression management activities for extreme values of *above target* and *below target*, we will discuss the results in two steps. In Step 1, we will consider the significance of the parameters themselves. The parameter associated with the main effect tests whether an impression management activity influences the *forecast change* when *above target* and *below target* equal zero, and parameters on the interactions test whether the influence varies with *above target* and *below target*. In Step 2, we consider how the parameter on the influence of an impression management variable changes with values *above target* and *below target*. Our hypotheses deal with the influence of these impression management activities for large values of *above target* and *below target*.

The parameters on the main effect of *forecast guidance* and its interactions with *above target* and *below target* are all statistically insignificant. The effect of *forecast guidance* is also statistically insignificant for the higher values of *above target* and

TABLE 3
Impression Management Influences on Forecasts

Variables	(5) Forecast 2-day window	(6) Forecast 6-day window	(7) Forecast 15-day window	(8) Forecast 90-day window
forecast guidance$_{t-1}$	0.01	0.01	0.01	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Log (*press releases*$_{t-1}$)	−0.01*	−0.02*	−0.02*	−0.01†
	(0.01)	(0.01)	(0.01)	(0.00)
number of conference calls$_{t-1}$	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
above target$_{t-1}$	0.21	0.31	0.37	0.18
	(0.23)	(0.23)	(0.23)	(0.15)
below target$_{t-1}$	−0.31	−0.14	−0.08	−0.23
	(0.29)	(0.29)	(0.29)	(0.21)
forecast guidance$_{t-1}$ × *above target*$_{t-1}$	−0.15	−0.13	−0.17	0.07
	(0.12)	(0.12)	(0.12)	(0.08)
forecast guidance$_{t-1}$ × *below target*$_{t-1}$	−0.09	−0.28	−0.31	−0.20
	(0.29)	(0.28)	(0.28)	(0.17)
Log (*press releases*$_{t-1}$) × *above target*$_{t-1}$	0.06	0.06	0.04	0.04
	(0.06)	(0.06)	(0.06)	(0.04)
Log (*press releases*$_{t-1}$) × *below target*$_{t-1}$	0.08	0.17*	0.09	0.08
	(0.07)	(0.07)	(0.07)	(0.05)
# *Conference calls*$_{t-1}$ × *above target*$_{t-1}$	−0.18**	−0.20**	−0.16**	−0.13**
	(0.06)	(0.06)	(0.06)	(0.04)
# *Conference calls*$_{t-1}$ × *below target*$_{t-1}$	−0.18†	−0.37***	−0.15†	−0.06
	(0.10)	(0.09)	(0.08)	(0.07)
N (Firm Quarters)	2,380	2,545	2,577	2,565
Number of firms	117	117	117	117
R-squared	0.02	0.02	0.09	0.02

Standard errors in parentheses.
*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.1$

below target. Thus, the results do not support Hypotheses 4 and 5 for *forecast guidance*.

The influence of *press releases* is significant and negative over the entire range of *above target* and remains statistically significant until *above target* values exceed the 70th percentile. The interaction with *below target* is positive but only statistically significant for one of the four estimates, thereby not supporting a conclusion that the influence of *press releases* varies with *below target*. The influence is negative and significant until *below target* values exceed the 80th percentile.

While *press releases* negatively influences *forecast change* for firms with performance at the target, the positive parameters associated with the interactions result in the influence becoming statistically insignificant for higher values of either *above target* or *below target*. Thus, directly contrary to Hypotheses 4 and 5, *press releases* most strongly influence the *forecast change* when performance is near the target.

The parameter associated with the main effect of *conference calls* is positive and statistically insignificant, but the interactions with *above target* are negative and statistically significant in all four estimates. The parameter estimates on the interaction of *conference calls* and *below target* are all negative and statistically significant in three of the four estimates. The influence of *conference calls* is negative and statistically significant for values of *above target* greater than .045 (roughly 40% of the observations with non-zero values for *above target*). The influence of Conference Calls is also negative and statistically significant for values of *below target* greater than .026 (roughly 50% of the observations with non-zero values for *below target*). When *above target* is at the 90th percentile and *below target* equals zero, moving from the 10th percentile of Conference Calls to the 90th percentile (from 1 to 3 conference calls) decreases the predicted change in forecast by 4.0%. When *above target* equals zero and *below target* is at the 90th percentile, moving from the 10th percentile of *conference calls* to the 90th percentile decreases the predicted change in forecast by 8.2%. Recall that *forecast change* has a positive value 95% of the time. The negative sign

on both interactions indicates that *conference calls* has a smoothing effect, limiting the increase in analyst forecasts as the predicted date gets closer. Thus, consistent with Hypotheses 4 and 5, conference calls reduce the change in forecast for firms with performance significantly above or below the target.

DISCUSSION AND CONCLUSIONS

This study demonstrates that managers respond to deviations of performance from analyst targets using a variety of impression management behaviors, which we assume management intends to influence analyst forecasts. For example, as firm performance rises above analyst forecasts, managers are less likely to issue a forecast guidance and instead issue more press releases. Both positive and negative deviation in performance from analyst targets influence managers' decisions on whether to, and how to, attempt to influence analysts.

The results for the impact of specific impression management actions on analyst forecasts were less clear. The number of conference calls influenced the revision in forecasts for firms with performance well above or below target, as we predicted. However, the number of press releases negatively influenced the revision for firms near the target and became insignificant at more extreme values of performance versus target, a finding we did not anticipate.

While differences between forecast and actual earnings significantly influence managers' decisions to issue forecast guidance, we find little or no effect from forecast guidance on changes in analysts' forecasts. Given that firms seldom change whether they do or do not issue forecast guidance, and analyst forecasts typically converge to managerial estimates when provided (Graham et al., 2005), analysts may either not expect to receive guidance or simply wait for managers to announce their own numbers, rather than announcing and revising their own estimates.

The modest results related to the impact on revisions of analyst forecasts may reflect a problem in our ancillary assumptions in developing the theory. While a firm with extreme performance versus target seem obviously to need to justify itself, exactly how it wants to justify itself is less clear. We had hypothesized that firms with extreme performance versus aspirations would want to reduce the increase in forecasts. These hypotheses regarding the impact of such activities on forecast revision depended on the impression management activities sharing a common, directional impact. The inconsistent impact on forecast revision could reflect a combination of variation in the content or intent of the activities, and variation in the ability of analysts to discount such activities. It may be that extreme performance versus target performance increases efforts to influence analysts, but also reduces the sensitivity of analysts to be influenced by the firm. Absent measures of analyst sensitivity, our findings may imply that analysts' responses to managerial influence mechanisms are context specific: analysts might prefer more direct communication mechanisms (through conference calls) when surprised, and more routine communication mechanisms when their predictions are met.

Within the impression management literature, some observers recommend that firms focus on a broad impression across all stakeholders (Fombrun, 1996) while others recommend influencing stakeholder specific impressions (Deephouse & Carter, 2005; Mishina et al., 2012). Our indicators of impression management play to both broad and narrow impression management. For example, while forecast guidance clearly attempts to influence a very specific set of individuals' narrow impressions (i.e., analysts' forecasts of earnings per share), as noted in the example at the beginning of this article, how a firm performs relative to its own forecast guidance can influence investors' general impression of the firm's competence. Thus, while firms may want broad or narrow impression management, many of their tools may influence both.

While many impression management studies involve a one-way attempt to influence (e.g. Pfarrer et al., 2010), our analysis recognizes a two-way, continuing process of interaction between analysts and firms. This seemingly simple target attainment processes can result from continual interactions that encompass a variety of behaviors. Furthermore, while managers may want to influence targets in specific ways, examining these processes suggests that the system may react in complex ways. Given the social construction of impressions (Bitektine, 2011; Kotha et al., 2001; Rao, 1994; Rindova et al., 2005), we believe a relational approach emphasizing the ability to influence and persuade provides a novel and useful picture of how stakeholders negotiate the value of social assets and a firm's performance. Specifically, we find that the medium of transmission also conveys information. Our analysis did not consider the specific content of management's impression management activities. Our

findings suggest that how messages are communicated influences their reception.

This is consistent with the view that, in the absence of a crisis, routine, incremental, or microsocial processes can influence impressions of external stakeholder audiences (Elsbach, 2003). Additionally, if the medium of communication constitutes information, than multiple or even redundant information transmission may inform, as opposed to simply being attempts to create emotional bias (Pfarrer et al., 2010; Rindova et al., 2005) or obfuscate with noise (Graffin et al., 2011). Alternatively, in firms that issue large numbers of press releases, management may have the ability to target communications at specific stakeholders who are more receptive to particular signals or media than others (Mishina et al., 2012) or carry embedded signals about managerial intent and commitment (Philippe & Durand, 2011).

We emphasize three specific ways managers may attempt to influence impressions of their firms, but evidence demonstrates that firms also do other things in response to or in anticipation of earnings targets. Burgstahler and Dichev (1997) and Degeorge, Patel, and Zeckhauser (1999) note that firms appear to manipulate earnings or real business activities to beat analyst forecasts; far fewer firms miss their EPS target by 1¢ than hit it precisely or beat it by 1¢. Graham et al. (2005) find that managers report taking a wide variety of substantive business actions (e.g., decreasing discretionary spending, delaying projects even if they would generate value, providing customers incentives to buy this quarter, etc.) strictly to meet analyst forecasts. Our control variable for earnings management is statistically significant and negative for both forecast guidance and conference calls. The impression management framework does not preclude using accounting manipulation to achieve positive impressions. Earnings manipulation and impression management may interact. In deciding on forecast guidance, conference calls, or press releases, a firm would quite reasonably take into account any earning manipulation it was undertaking. Alternatively, prior research shows other stakeholders such as journalists and outside board members also act as intermediaries (Hillman, Cannella, & Paetzold, 2000; Rindova et al., 2006). As intermediaries pay attention to both the original message and how other intermediaries have interpreted it, future work could consider how the influence of firms' messages changes as it moves through intermediary networks to provide a more compete representation of managerial impression management.

This study stops short of making a normative argument about whether managers should attempt to influence forecasts. Such a determination would require a more complete analysis of the system. In particular, we assume that managers care about firm impressions, at least partially because such impressions reflect on themselves and their ability. As in many areas, the interests of the firm and managers may differ. Impression management activities often inherently involve risk, usually because they create expectations. If managers have different risk preferences than the firm, they could easily make choices that do not align with the interest of the firm. Normative analysis would need to allow for such variation in motivations. A normative analysis would also want to consider not just whether the impression management activities influence forecasts, but whether they systematically bias such forecasts, as well as the impact of such potential biases on the firm. We leave these issues to future research.

We demonstrate that some of the activities used to build impressions may differ in type and in context of use. These differences suggest that specific firm actions may associate closely with particular impressions. It is possible for managers to more effectively manage impressions if they systematically adapt their behavior to the performance context and target audience.

While analysts primarily monitor firm activities, they indirectly influence firms' access to external resources. By focusing solely on manager and analyst relations, we emphasize the first role while de-emphasizing the second. However, by influencing external perceptions of the firm on which the firm's stock price depends, analysts indirectly influence the firm's access to resources. Performance versus the target can directly influences a firm's stock price, and thus the proceeds available from issuing new equity issuance. Alternatively, for firms that want to use their shares in acquisitions or mergers, performance versus target again may influence the amount of the firm's equity required to reach a specific value.

This paper has demonstrated that managerial impression management activities react to the firm's performance against a target established by stock analysts' forecasts of firm earnings per share. It has also demonstrated that some such activities may influence analysts' future forecasts, creating a dyadic relationship between managers and analysts. We believe this paper opens the door to a variety of more detailed analyses of various aspects of managerial communi-

cation, and the impacts of the management-analyst interaction on firm performance and change.

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