

PSEUDO-PRECISION? PRECISE FORECASTS AND IMPRESSION MANAGEMENT IN MANAGERIAL EARNINGS FORECASTS

MATHEW L. A. HAYWARD
Monash University

MARKUS A. FITZA
Frankfurt School of Finance & Management and the University of Newcastle

We examine earnings guidance precision as a mechanism of organization impression management (OIM) and, specifically, suggest that strategic leaders use more precise earnings forecasts as an OIM tactic to convey a greater sense of authority and control over organizational performance after material organizational setbacks. Contributing to the OIM literature, we argue that the use of more precise judgment makes use of different psychological mechanisms compared to kinds of OIM that have been previously studied. The results presented here suggest that (a) OIM is an important motivation for more precise earnings forecasts, (b) precision as an OIM tactic is more likely to arise when managers convey impressions of brighter performance prospects, and (c) investors generally respond favorably to the tactic.

Forecasts of organizational performance are used by managers to shape impressions of capital budgeting decisions, sales projections, earnings per share (EPS), and so forth, and each of these forecasts is subject to varying levels of precision (Raju & Roy, 2000). This is reflected in statements such as, “We are 90% confident that acquiring XYZ will generate material net present value” or “Contingent on XYZ, sales will be 5–10% higher this fiscal year.” To be more precise is to express a matter more exactly (for example, forecasting earnings to be between 5 and 15 cents per share is less exact and less precise than forecasting them to be between 9 and 11 cents), and more exact or precise forecasts are more informative. For instance, a CEO or CFO who states that EPS will be \$1.10 is generally perceived as being more informative and authoritative than one stating that it will be between \$.90 and \$1.30.

Yet, there is a trade-off between being more precise and being more accurate, wherein forecast accuracy refers to whether the forecast is realized, *ex post*. Judgment with a high level of precision is more likely to be wrong since it leaves less room for error and the resultant errors can potentially diminish managerial credibility and reputation. Yet, in spite of such potentially negative consequences, evidence has suggested that leaders tend to be highly precise relative to the uncertainty surrounding forecasts, particularly in the domain of earnings guidance, where

firms meet their “annual earnings guidance [i.e., earnings per share projected by firm leaders] only approximately six percent of the time” (Hirst, Koonce, & Venkataraman, 2008: 326; see also Haran, Moore, & Morewedge, 2010). Such an empirical regularity poses intriguing questions about top managers’ motivations, considering that leaders can forecast sufficiently wide ranges of prospective outcomes so as to virtually assure accuracy (Sutton & Staw, 1995).¹ Thus, explaining and predicting the motivations for a given level of precision in forecasts would allow scholars and practitioners to better interpret precision in managerial judgments. Why would top managers issue very precise judgments, particularly in the crucial domain of earnings forecasts or guidance of next year’s earnings, given that such precise judgment potentially induces errors and erodes their credibility?

In this paper, we contribute to the understanding of organizational impression management (OIM) by examining forecast precision as a previously understudied form of OIM. While past OIM literature has focused mostly on qualitative attempts to sway the impression of firm stakeholders, we argue that precision is an example of a quantitative OIM tactic—a

¹ We define accuracy as whether a forecast matches the actual result. A forecast is accurate if it comes true. We define precision as the spread with which a forecast is given.

tactic that uses different cognitive mechanisms than more overt OIM interventions (Elsbach, 2003). The thesis explored here is that regardless of whether managers are mindful of the drawbacks of such errors, their motivation to regain favorable impressions after organizational setbacks through issuing very precise forecasts is instrumental. That is, issuing precise forecasts is an OIM tactic or an action that is carried out to influence stakeholders' perceptions of the organization and its leaders (Bolino, Kacmar, Turnley, & Gilstrap, 2008; Graffin, Carpenter, & Boivie, 2011; Graffin, Halebian & Kiley, 2015). To test this thesis, we select conditions that have been robustly found by OIM scholars to implicate OIM, and use these conditions to evaluate whether precision is an OIM tactic that conveys a sense of managerial control after material organizational setbacks, along with whether this tactic is effective.² We suggest that after events that contribute to negative impressions of their firms' managers use more precise forecasts to create the perception that they have control and authority over their organizations and their performance (Staw, McKechnie, & Puffer, 1983).³

We impose governing conditions of organizational setbacks not just to better explain and predict forecast precision, but also to contribute to the OIM literature, as leaders are particularly motivated to regain perceptions of authority and control after they have violated stakeholders' expectations, including by missing previous earnings expectations, underperforming relative to industry peers, and following value-destroying strategies, such as poorly perceived acquisitions (Graffin et al., 2015).

As we suggest below, forecasts using high levels of precision can not only be persuasive relative to the focal forecast, but can also allow those who issue them to be perceived by target audiences as more authoritative and in control. Whereas persuasion refers to the use of reason and logic to convince others about a focal action or representation (Westphal & Bednar, 2008), OIM refers to attempts to gain or regain favorable impressions of organizations and their leaders (Leary & Kowalski, 1990; Tetlock &

Manstead, 1985). We propose that when leaders make more precise representations about their organizations they convey control and authority and thus create favorable impressions about themselves and their organizations. Thus, we argue that being more precise is not only more persuasive, but can also serve OIM purposes.

The voluminous OIM literature has substantially advanced our understanding of the antecedents, characteristics, and consequences of OIM, and in this article we seek to further explain and predict the precision with which representations are made to investors. Elsbach (2003) categorized OIM tactics as involving verbal accounts, categorizations, labels, symbolic behavior and physical markers, each of which is undertaken with different intentions (see also Bolino et al., 2008; Gardner and Martinko, 1998). In light of psychology evidence that more precise judges are perceived as being more authoritative and perceive themselves to be more authoritative, we introduce judgment precision as a form of OIM for affecting the impressions of investors and other stakeholders who interpret and evaluate firm performance and leadership (Jerez-Fernandez, Angulo, & Oppenheimer, 2014; Mason, Lee, Wiley, & Ames, 2013; Thomas, Simon, & Kidiyali, 2011). However, we argue that as an OIM tactic, precision differs from other previously studied impression management tactics as it involves invoking numerical cues, rather than qualitative signals, that are processed more automatically or subconsciously. This is important in light of evidence that verbal and written accounts expressed in conference calls and annual reports can be counterproductive in swaying the quantitative mindsets and analyses of security analysts and investors (Hobson, Mayew, & Venkatachalam, 2012; Larcker and Zakolyukina, 2012). Potentially, leaders can offset or bypass such skepticism toward seemingly self-serving accounts, including self-serving attributions, by framing outcomes more precisely, and this could be especially instrumental after leadership and organizational impressions have been damaged (Kahneman, 2011; Staw et al., 1983).

In summary, the central research questions for this article are: How do OIM considerations explain the level of precision in managers' forecasts? and What are the effects of such precision? By examining these questions, we seek to contribute to the OIM literature by introducing a previously understudied method of OIM that relies on different psychological mechanisms than the OIM tactics studied in the past, as we shall elaborate. In the next section, we situate core

² These selected conditions also allow us to control for the prospect that managers are more precise because they are more confident. This is because after encountering such setbacks managers would—holding other factors constant—be less confident about making more precise predictions (Moore & Healy, 2008).

³ Within the earnings guidance context, precision refers to the range within which guidance is issued.

explanations of judgment precision within the underlying psychology literature.

THEORY AND HYPOTHESES

Explanations of Judgment Precision

Interrelated theories have been advanced to explain the level of precision used in forecasts. The first concerns *forecast predictability*, wherein greater *ability* to accurately predict the future fosters more precise forecasts. Put differently, the more predictable the earnings, the more precise top managers will be in forecasting earnings. However, while important, this perspective does not account for the widespread errors in forecast precision described above (Makridakis, Hogarth, & Gaba, 2009; Yaniv & Foster, 1995, 1997).

A related principal explanation that to some degree addresses this issue is *confidence*, wherein more confident people issue more precise forecasts (Moore & Healy, 2008). While this explanation of forecast precision has not been systematically applied to managerial and organizational settings, there is evidence that lab subjects provide narrow or precise confidence intervals if they feel more confident (Alpert & Raiffa, 1982; Klayman, Soll, Gonzalez-Vallejo, & Barlas, 1999; Soll & Klayman, 2004). Put differently, the observed error in earnings forecasts (i.e., the gap between actual earnings and earnings forecasts) could be a function of managerial overconfidence. We seek to control for this dynamic by (a) choosing organizational conditions that implicate our core theoretical mechanism (OIM) but not the confidence explanation, and (b) controlling for predictors of managerial confidence (Moore & Healy, 2008). Regarding the first point, we refer to evidence that managerial confidence is diminished or mediated after major organizational setbacks (Hayward & Hambrick, 1997; Hribar & Yang, 2015; Li & Tang, 2010; Malmendier & Tate, 2005) and then test the OIM perspective in the context of such setbacks.

A third principal explanation of higher forecast precision is *managerial persuasion*, wherein managers seek to use reason and logic to convince others about a focal action or representation (Westphal & Bednar, 2008). In this vein, there is a perception that precision and accuracy are positively correlated, even if this perception is flawed. This explanation also helps to explain errors associated with precision—in a bid to be more persuasive in the short term, top managers may seek to accept and manage

longer-term consequences. For instance, in a large survey of CFOs, Graham, Harvey, and Rajgopal (2005) found that managers routinely forsake value-creating projects in order to avoid short-term investment costs that lower share prices and CEO compensation. Likewise, managers extensively use questionable accounting techniques, including earnings manipulation, to bolster short-term earnings even if this can—in the long term—result in accounting restatements and investor-led litigation (e.g., Dechow, Sloan, & Sweeney, 1996).

In addition to these explanations, we introduce the *impression management* (in our case *OIM hypothesis*), which has not been directly tested in the psychology and organizational literature as an explanation of judgment precision. Whereas persuasion pertains to the focal representation (e.g., persuading an audience that the earnings forecast is going to come true) (Brass & Burkhardt, 1993: 447; Kipnis & Schmidt, 1988; Westphal, 1998; Westphal & Bednar, 2008: 29; Yukl & Tracey, 1992), impression management is designed to create favorable perceptions about the organizations and its leaders. According to psychologists, impression management refers to strategies used to create “desired social images” (Tetlock & Manstead, 1985: 59; see also Leary & Kowalski, 1990; Schlenker, 1980). OIM tactics are invoked *after, and conditioned upon, material organizational and managerial setbacks*, and are intended to convey global positive impressions (e.g., Westphal, Park, McDonald, & Hayward, 2012) including that organizational leaders are authoritative and in control. Thus, whereas persuasion is effective when it results in acceptance of the focal representation, impression management is intended to create favorable impressions and legitimacy around a series of organizational actions. This is particularly important when legitimacy has been badly damaged by adverse developments that undermine managerial credibility, especially missing earnings expectations (Cialdini, 2006; Staw et al., 1983). Accordingly, we seek to examine the use of precision over and above those relating to persuasion by governing results on conditions found by OIM scholars to implicate OIM. Such conditions can be events that have caused stakeholders to develop negative impressions of the firm, especially those that managers are responsible for and that point to a lack of managerial control over key firm outcomes. We argue that this perceived lack of understanding and control can be countered by the use of more precise guidance through core mechanisms.

First, psychology studies have shown that precise guidance strengthens forecasters' sense that they control prospective outcomes, relative to more vague and ambiguous representations that reflect and manifest uncertainty (Erev, Wallsten, & Neal, 1991). That is, whether the more precise forecast is justified or not, judges perceive that they have more control over outcomes by being more precise about them, a conviction that in turn affects investors and other stakeholders (Weick, 1979). Welsh, Navarro, and Begg (2011) showed, for example, that judges who use more precise representations (in terms of number of decimal places by which an outcome is represented) perceive themselves to be more confident and authoritative in general (i.e., not just with respect to the outcome that they project). It would follow that the act of issuing more precise earnings guidance will help convince leaders they have greater control over firm performance, and this would be more salient after material organizational setbacks. Teigen (1990) also showed that actors generally have a bias toward being more precise, even if this might come at the cost of being incorrect. Overall precision enables actors to gain or regain a sense of control over their environment, as a fundamental human motivation that surfaces in managerial interactions with stakeholders (Heider, 2013; Pfeffer & Salancik, 1978; Staw et al., 1983).

Second, precision not only affects one's self-image; audiences also perceive that more precise judges have greater control over the outcomes for which they are responsible (Yaniv & Foster, 1995). They may also infer that people who use more precision have a better understanding of the factors that influence the outcome. Studies of negotiations, for instance, have shown that negotiators who issue more precise offers are perceived as better informed, and even better negotiators, in a manner that transcends a focal offer or negotiation (Mason et al., 2013). By contrast, actors, and especially leaders, who represent outcomes vaguely and ambiguously are perceived as lacking control, a result that looms as problematic to leaders who have lost credibility after organizational setbacks (Haran et al., 2010; Soll & Klayman, 2004). Janiszewski and Uy (2008) found that the influence of an initial offer in a negotiation is stronger when the initial offer is precise, in part because others perceive that a more precise judge is more authoritative and better informed. Likewise, patients find doctors who issue more precise projections about treatment outcomes (e.g., 95% likelihood of success versus highly likely to succeed) to be more competent and authoritative, and this in turn

increases the likelihood that patients will accept doctors' procedures without checking base rates of failure or seeking a second opinion (Brun & Teigen, 1988; Michie et al., 2005). Leaders who sense this property of being precise are thus likely to issue more precise forecasts about organizational performance after they have lost credibility and authority (Salancik & Meindl, 1984).

The mechanisms described above suggest that precision operates as an OIM tactic—that it fosters the impression that the issuer of a forecast (e.g., a CEO or a firm) is authoritative and in control. While establishing such positive impressions is the expressed goal of OIM, we argue that precision as an OIM tactic differs from previously examined OIM mechanisms.

Psychological Processing of Precision differs from other Commonly Studied Forms of OIM

The psychological mechanism by which precision operates on audiences differs in form and function from cognitive adjustments that underpin other kinds of OIM tactics, including those that involve defensive, obfuscating and justifying accounts. Often, these latter tactics require significant cognitive processing by target audiences because they can confront and challenge preexisting beliefs and thus invoke cognitive dissonance (Festinger, 1962). Elsbach and Sutton (1992) found, for instance, that some organizations attain legitimacy through illegitimate actions. Cognitively, this requires that audiences assess whether the actions (e.g., the disruption of a church service or spikes left in trees that could injure lumber workers) are legitimate or illegitimate, and, if the latter, whether they are also acceptable and appropriate. Elsbach and Kramer (1996) showed that business school deans were cognitively distressed by what they perceived as inappropriate *Business Week* categorizations of their schools and thus issued statements to correct those categorizations. To ensure their statements were acted upon rather than ignored, the deans required that constituents assessed the schools' impression relative to that conveyed by *Business Week* (see also Pratt & Foreman, 2000).

Kahneman (2011) concluded that humans adopt two modes of thinking: Whereas Type 1 thinking involves fast, intuitive, unconscious thought, Type 2 thinking is predicated on slow, calculating, conscious thought. As the above examples suggest, OIM tactics often involve Type 2 cognitive processes that are conscious, effortful, and analytical (Kahneman,

2011). By contrast, precision has been found to invoke Type 1 processes or those that are subconscious, automatic and effortless (Jerez-Fernandez et al., 2014; Mason et al., 2013; Thomas et al., 2011).

Type 1 processes account for how greater precision conveys greater authority and control (e.g., Kahneman, 2011; Yaniv & Foster, 1995). In this vein, the time required to evaluate and recall numerical changes is positively related to wider numerical separation (e.g., a point estimate is assimilated more rapidly than a range, and narrower ranges are processed more rapidly than wider ranges) (Aiken & Williams, 1973; Moyer & Landauer, 1967; Parkman, 1971).⁴ From a practical standpoint, more precise guidance may be more readily incorporated into analysts' and investors' valuation spreadsheets compared to qualitative representations. When a CFO projects next year's guidance to be, say, \$10.23 per share, that number can be directly inserted into analytical instruments and formulae, including those contained in spreadsheets. By contrast, an entreaty such as "Fiscal year results were caused by unexpected cost overruns that have been corrected with new divisional leadership" requires greater sensemaking, including why the overruns occurred and how they could have been avoided (Weick, 1979).

Leaders assume greater authority and control by invoking in followers and audiences Type 1 cognitive processes that involve less questioning, resistance, and skepticism toward them (Bargh & Chartrand, 1999). This may be especially instrumental in defusing skepticism of professional investors and analysts who have been disappointed by lower-than-expected earnings and questionable strategic initiatives (Hobson, 2012; Westphal et al., 2012).⁵ For instance, in their study of the content of CEO and CFO conference calls with analysts, Larcker and Zakolyukina (2012: 495) found that CEOs were perceived by professional investors to

routinely use hyperbole and deceptive language in explaining performance and strategies in conference calls with analysts, and that this can in turn arouse investor skepticism and cynicism toward those CEOs.

While precision has been shown to have these physiological effects, it has not been established that individuals or organizations intentionally use precision to this end. However, taken together, these effects offer rationale for why precision may be a ubiquitous and perhaps effective means by which top managers try to create the impression that they understand what drives their firm's performance and are in a position to exercise control and authority over their firm's prospects. Building upon the OIM literature, a starting point for testing this proposition is to develop conditions under which top managers would seek to restore favorable OIM or to regain impressions that they are in control (Elsbach, 2003). Before elaborating further, however, it is important to provide additional background regarding the focal context undergirding this study—that is, earnings guidance precision.

Brief Literature Review of the Earnings Guidance Precision Quandary

Corporate earnings are influenced by many exogenous and uncontrollable factors, ranging from fashions and consumer tastes to the weather, and from changing political winds to the relative health of the broader economy. There is even uncertainty about how to account for earnings numbers because they are socially constructed or subject to changeable accounting conventions (Carruthers, & Espeland, 1991; Hines, 1989). Nevertheless, executives routinely exercise the discretion to issue precise quantitative forecasts of future earnings (i.e., earnings guidance). The accounting literature on such guidance has examined (a) antecedents of firms' decision to issue earnings guidance, (b) factors that explain the characteristics of such guidance and (c) implications of earnings guidance (Hirst et al., 2008). Explanations for these first two questions revolve around institutional considerations, information asymmetry, and uncertainty in the underlying information environment (Healy & Palepu, 2001).

To elaborate, legal and regulatory changes have shaped what can and must be disclosed, and to whom, although these changes have slowed recently and pertain to guidance and forecasts in general, rather than forecast precision in particular. Earnings guidance has also been extensively studied with

⁴ In the marketing literature, Thomas et al. (2011) found that buyers are more likely to accept offers that appear to be more precise even if they are more expensive because the appearance of greater precision conveys authority and eases cognitive processing (e.g., \$395,425 was perceived to be smaller than \$395,000).

⁵ Westphal et al. (2012) built upon such insight by underscoring that such persuasion attempts are less effective when they are perceived to be more self-serving. Therefore, CEOs in their sample worked to elicit and gain impression management support from peers who furnished the OIM intervention with journalists.

respect to the perceived asymmetry of information held by the firm relative to that which is publicly available. In general, more extensive and detailed earnings guidance is assumed to be desirable because it reduces stock price volatility and lowers firms' cost of capital (e.g., Leuz & Verrechia, 2000). Related to this is the "uncertainty or accuracy" thesis, wherein managers issue more precise guidance to reflect more predictable earnings. Factors thought to increase earnings certainty, such as superior corporate governance, greater analyst following, or stable industry conditions, tend to increase earnings guidance precision (Ajinkya & Gift, 1984; Baginski & Hassell, 1997).

A limitation of the above accounting perspectives, however, particularly as they pertain to the uncertainty or accuracy thesis, is that they fail to account for errors in forecast precision as discussed earlier. In light of the broader organizational drivers of guidance precision, we now consider *when* strategic leaders would seek to be more authoritative about their firms' performance prospects by being more precise about them. A starting point is the insight from OIM theory that impression tactics are invoked in the wake of negative triggers that threaten the reputation of top managers and their organizations (Bolino et al., 2008). As discussed above, OIM is concerned with fashioning and restoring favorable impressions, especially after they have been damaged, and missing earnings expectations is exceptionally damaging to managerial and organizational credibility. The follow section addresses and outlines conditions that implicate OIM, starting with the event of an earnings miss.

Organizational Setbacks and Earnings Guidance Precision

A robust result in the OIM literature is that leaders of organizations work to foster positive impressions after performance has not met expectations, including before, during, and after releasing a negative earnings surprise or "earnings miss"—the extent to which actual earnings fall short of the forecast (e.g., Westphal & Deephouse, 2011; Westphal et al., 2012). One study found that CEOs undertake extensive and calculated interactions with counterparts ahead of earnings misses so as to mitigate subsequent loss of journalist and investor support (Westphal et al., 2012). This result arises in part because earnings misses can adversely impact firms' share price and CEOs' compensation and tenure (Denis & Kruse, 2000; Matsumoto, 2002; Matsunaga & Park, 2001).

Earnings misses create negative impressions about CEOs by highlighting that they failed to realize forecasts, and lack control over and appreciation of the drivers of firm performance or the authority, control, and competence to realize outcomes. CEOs who seek to regain more favorable impressions, especially those of authority and control, after missing prior earnings expectations are thus likely to issue more precise and authoritative earnings forecasts. An important counterpoint, however, is that managers would seek to be less precise following an earnings miss so as to increase the likelihood of making accurate forecasts. In this reasoning, managers would be adverse to further disappointing stakeholders, including investors, by issuing an overly precise forecast of higher earnings, especially considering the additional scrutiny after an earnings miss. An OIM perspective, however, predicts the opposite—that the motivation to create the perception of being in control is stronger after setbacks. Thus:

Hypothesis 1a. After an earnings miss, earnings guidance will be expressed with higher precision.

Note that the above arguments are not qualified by the direction of the guidance—that is, whether the forecast represents a rise or fall in earnings relative to previous forecasts. Above, we suggest that in either case precision will strengthen the impression that leaders understand and control performance outcomes. In the following, we argue that forecasts of improved performance strengthen leaders' motivation to be more precise. That is, consistent with an OIM perspective of forecast precision, the relationship expressed in Hypothesis 1a would strengthen for higher earnings guidance. Holding other factors constant, after a material setback such as an earnings miss, stakeholders would tend to be more resistant and skeptical toward outcomes that are more incongruent with the beliefs shaped by the disappointing event—so that a prediction of higher earnings attracts greater cognitive dissonance (Festinger, 1962). In addition, projecting a rosier picture after setbacks is more likely to be perceived as managerially self-serving, invoking further skepticism. Put differently, being more precise in issuing higher guidance would tend to defuse investor questioning, resistance and skepticism toward the higher guidance (Bargh & Chartrand, 1999).

We therefore predict that when forecasting earnings increases after setbacks, managers are even more motivated to use precision to overcome

skepticism by stakeholders—precision can help to replace the perception that managers are acting in a self-serving manner by the impression that they are in control and authoritative in their predictions. Thus:

Hypothesis 1b. The positive relationship between a preceding earnings miss and the precision of subsequent earnings guidance will strengthen when that guidance represents an earnings increase.

Another central condition of OIM arises when firms report below-industry-average performance. In these cases, investors could have generated superior returns by investing in competitor companies in the same industry. Studies of the institutional bases of strategy have shown that analysts and other professionals develop normative expectations of firms within industries, and that strategic leaders closely track the performance of industry peers (Oliver, 1991; Westphal & Deephouse, 2011). When firms underperform according to industry expectations, their price–earnings (PE) ratio declines, limiting their prospects to raise capital on favorable terms and increasing the likelihood that their firms will be subject to takeovers (Baum & Oliver, 1996; Porac, Wade, & Pollock, 1999).

However, below-industry-average performance also points to the need for reforms required for organizational competitiveness (Quinn, 1978). Under these circumstances, leaders would benefit from stakeholders' impressions or perceptions that leaders understand what drives firm and industry performance, and that they have the authority and control to execute necessary change. Thus, an OIM perspective would predict that firms in this situation would formulate more precise earnings projections in order to create such impressions (Elsbach, 2006; Elsbach, Sutton, & Principe, 1998). Thus:

Hypothesis 2a. After a period of below-industry-average performance, earnings guidance will be expressed with higher precision.

And extending Hypothesis 1b, we also suggest that:

Hypothesis 2b. The positive relationship between a preceding period of below-industry-average performance and the precision of subsequent earnings guidance will strengthen when that guidance represents an earnings increase.

CEOs can also greatly disappoint stakeholders and create the impression that they lack understanding

and control after questionable mergers and acquisitions (M&As) (Graffin, Haleblan, & Kiley, 2015; Martin & McConnell, 1991). Organizational evidence has suggested that leaders closely monitor the market reaction to M&A announcements and engage in impression management to counter adverse sentiment (see Haleblan, Devers, McNamara, Carpenter, & Davison, 2009, for a review). For instance, Graffin et al. (2015) found that leaders undertake “offsetting impression management” wherein they announce good news contemporaneously with M&A announcements in a manner that can offset adverse reactions to these M&As. The scope for poorly perceived acquisitions to damage CEOs' credibility is reinforced by evidence that such acquisitions increase the likelihood of CEO dismissal and can trigger investor disagreement with leaders' strategies (Lehn & Zhao, 2006). In other words, such events raise questions about how well CEOs understand and can direct firm strategy and performance.

Thus, it would seem that managers who experienced a negative reaction to a major strategic initiative such as an M&A have reason to strengthen their own and their organization's credibility, and elicit stakeholders' impressions that strategies reflect understanding of and control over the drivers of performance. Thus, as argued above, leaders will issue more precise earnings forecasts, as follows:

Hypothesis 3a. After a negative market reaction to an M&A announcement, earnings guidance will be expressed with higher precision.

Furthermore, in keeping with Hypotheses 1a and 2b above, we also suggest the following:

Hypothesis 3b. The positive relationship between a preceding negative market reaction to an M&A announcement and the precision of subsequent earnings guidance will strengthen when that guidance represents an earnings increase.

Above, we drew from the OIM literature to elaborate upon adverse organizational developments that motivate strategic leaders to engage in OIM via more precise higher earnings guidance. While this is not a comprehensive and exhaustive set of such developments, the onset and enactment of these dynamics reflect important financial, institutional, and strategic considerations that implicate OIM.

Having examined OIM motivations for earnings guidance precision, we now examine the efficacy of such interventions.

Does Earnings Guidance Precision Result in More Favorable Organizational Impressions?

Above, we proposed that more precise guidance fosters impressions that top managers are in control of organizational performance. More precise guidance may also generate positive impressions because it conveys more authoritative outcomes that stakeholders can make organizational leaders accountable for. Carefully expressed data about organizational performance, exemplified in this case by narrow (precise) estimates, leaves less doubt in stakeholders' minds about forecasters' competence and control (Cialdini, 2006; Motowidlo, Dunnette, & Carter, 1990). Overall, it would seem that greater earnings guidance precision represents a subtle means to convey more favorable organizational impressions to quantitatively oriented stakeholders, especially investors. If this proposition were valid, we would expect that investors would respond positively to such guidance.

Moreover, more precise guidance offers a more concrete basis for leaders to be accountable to stakeholders relative to imprecise and vague guidance. In this vein, there is evidence that leaders who convey the willingness to be held accountable are perceived to have greater control over their organizations (Westphal, 2010). Tetlock (1985) described accountability as the nature and level of pressure upon individuals to justify choices and judgment; in this sense, precision confers the specificity of top managerial accountability.

There is some evidence that investors react negatively to signs that organizational leaders *lack* control and understanding (e.g., Staw et al., 1983; Villalonga & Amit, 2006; Westphal & Zajac, 1998). In an OIM framework, however, more precise forecasts would foster impressions that managers are in control and understand the drivers of firm performance, and that CEOs are prepared to provide tighter parameters that they are accountable for. Thus, we expect that investors would respond positively to more precise forecasts. Thus:

Hypothesis 4. The precision with which earnings guidance is expressed will be positively related to the stock market's reaction to the announcement of the guidance.

We posit this effect independently of whether the guidance purveys higher or lower earnings. That is, we suggest that precision conveys positive impressions about a firm's management and that this impression in itself should have a positive effect on the

share price that is in addition (over and above) the reaction to the direction of the forecast. In other words, holding the positivity or negativity of the forecast constant (i.e., by controlling for it) investors would respond positively to more precise guidance. Having developed hypotheses to test the two core propositions elaborated above, we now turn to the data and methodology to analyze such hypotheses.

DATA AND METHODS

We used the First Call database from Thomson Reuters as a source of annual company earnings guidance covering fiscal years 2005 through 2011. This database is commonly used in the accounting literature, where it was established that the First Call data are a representative subsample of Compustat firms (Anilowski, Feng, & Skinner, 2007; Hirst, Koonce, & Venkataraman, 2007). We chose the years 2005 to 2011⁶ as the timeframe for our analysis because First Call data are more reliable for more recent years (Glushkov, 2007).

The First Call database contains earnings guidance for publicly traded U.S. firms. Quantitative earnings guidance is measured as EPS and expressed in three major forms: (a) as a range, (b) as a point estimate, and (c) with an upper or lower bound (e.g., "above 15 cents"). A total of 10% of the guidance in our sample are points, 89% are ranges, and 1% involves a lower bound and 0.3% an upper bound (e.g., not more than 10 cents). Point estimates represent a maximum level of precision, but the third category of guidance is more difficult to interpret in terms of earnings precision. On the one hand, one could argue that these observations represent highly imprecise forms of guidance. On the other, we lack a basis on which to establish the level of imprecision relative to range forecasts, and thus we excluded all forecasts in the third category.

Another issue is that many companies frequently revise their guidance, leading them to issue earnings guidance more than once per fiscal year. This makes it necessary to delineate a single common point of comparison across the population of firms to avoid oversampling on firms that frequently update guidance.

To address this issue, we used the annual guidance (annual guidance is the most common form of guidance) provided by a company for a given year that was issued at least one month before the end of the

⁶ 2011 is our end point because it was when First Call was discontinued by Thomson Financial.

fiscal year.⁷ Thus, the measured guidance precision is not simply a function of firms approaching the end of a given fiscal year. As a robustness check, we tested the impact of setting the cutoff at different points in time and found that the effects are statistically indistinguishable, as we describe later in our discussion of the model's sensitivity. For hypotheses testing, the First Call database was augmented with annual accounting data from Compustat, data about CEO compensation from Compustat Executive, and share price data from the Center for Research in Security Prices (CRSP). For the timeframe covered by our dataset, the First Call database contains 3,901 companies that issued point or range estimates for 2,918 of these firms' data available on Compustat and CRSP. However, not all companies issue guidance in all years and some in our study issued them later than our observation window (30 days before the end of the fiscal year). Thus, our dataset contains 7,092 company-year combinations for which guidance was issued more than 30 days before the end of the fiscal year (see above) and for which Compustat and CRSP data are available. However, to test our hypotheses and to calculate some of our control variables, we require that each firm had released an estimate in the prior year. These requirements reduced the sample used to test our hypotheses to 4,728 observations.

Empirical Approach

We investigated firms' use of earnings guidance precision as a method of managing impressions, but not all firms issue such guidance each year. This represents a selection bias—we can only analyze the antecedents, as well as the consequences, of earnings guidance precision for firms that issue guidance. Hence, we employ a two-step Heckman model, wherein the first step uses a Probit procedure to estimate the probability of a firm issuing a guidance range in a given year (Heckman, 1979; Winship & Mare, 1992). The second model is an ordinary least square (OLS) procedure that controls for the selection effect estimated in the first equation. The dataset comprises a time series covering seven years of observations, with multiple observations for each firm. This allows us to take into account that different

firms might face different systematic uncertainty (uncertainty that does not change over time) or might prefer certain levels of guidance precision. Because of this time series structure of our dataset, we estimated our regression models with clustered errors (e.g., Andrews, 1991; Rogers, 1993; Thompson, 2011; Petersen, 2009; Williams, 2000; Wooldridge, 2010) along two dimensions, the first based on the guidance-issuing firm and the second based on the year the guidance is given, taking into account that the overall level of guidance precision might differ from year to year.⁸ To facilitate interpretation of the results, we standardize each continuous variable to z-scores with each variable's mean and standard deviation.

We test Hypotheses 1a to 3b with the following equation:

$$Prec_i = \beta_0 + \beta_1 EM_i + \beta_2 BIP_i + \beta_3 NMA_i + \gamma CV + \varepsilon_i \quad (1)$$

where $Prec_i$ is the precision with which earnings guidance i is announced, EM captures whether a firm missed its earnings guidance in the last fiscal year, BIP captures whether the a firm's market performance was below the industry average in the quarter leading up to the earnings guidance, NMA captures whether there was a negative stock market reaction to an M&A announcement in the quarter leading up to the earnings guidance, and CV is a vector of control variables that contain the inverse Mills ratio from the first step of the Heckman procedure, as well as the other control variables, as described below. Hypotheses 1a, 2a, and 3a imply that β_1 to β_3 are positive.

To test the hypothesized moderation relationships (Hypotheses 1b, 2b and 3b) we allow β_1 to β_3 to vary systematically based on whether the focal guidance represents a projected increase in earnings. This is represented by the following equation:

⁸ Clustered errors rely on less assumption about the structure of our data than do fixed effects. Fixed effects assume a particular structure of the error components: While every observation across the groups (firms and year) is assumed to be uncorrelated, every observation within each group is assumed to be equally well correlated to all other observations within that group. Clustered errors also make the first assumption but allow for flexibility of the structure within group correlations. Thus, the use of clustered errors leads to more robust results (e.g., Andrews, 1991; Cameron & Miller, 2011; Rogers, 1993; Thompson, 2011; Petersen, 2009; Williams, 2000; Wooldridge, 2010).

⁷ While this suggests that most of the estimates in our dataset are close to the end of the fiscal year, this is not the case since many firms do issue estimates early in the fiscal year. The average time between an estimate and the end of the fiscal year in our dataset is 116 days.

$$\begin{aligned}
 Prec_i = & \beta_0 + \beta_1 EM_i + \beta_{12} UP_i \times EM_i + \beta_2 BIP \\
 & + \beta_{22} UP_i \times BIP_i + \beta_3 NMA_i \\
 & + \beta_{32} UP_i \times NMA_i + \gamma CV + \varepsilon_i
 \end{aligned} \quad (2)$$

In this model, the primary null hypotheses of interest are that the coefficient estimates, β_{12} , β_{22} , and β_{23} , equal zero, which would indicate that the effect of earnings misses, below-industry-average performance, and negative reactions to M&A announcements on guidance precisions is not moderated by whether the focal guidance represents a projected increase in earnings, while Hypotheses 1b, 2b, and 3b imply that $\beta_{12} > 0$, $\beta_{22} > 0$ and $\beta_{32} > 0$.

Measures used in the Probit Regression

The dependent variable in the Probit model is whether a firm issued earnings guidance in a specific year. The independent variables for this model are based on findings from the accounting literature.

Prior forecasting behavior. We capture whether a firm issues earnings guidance in the prior year with a dummy variable with a value of 1 if it did so. Survey evidence from Graham et al. (2005), for instance, has shown that managers issue earnings guidance to develop and maintain a reputation for transparency, and thus, strategic leaders that issued prior guidance are more likely to engage in future guidance.

Information asymmetry. Firms that issue guidance may do so because outsiders lack information to make informed decisions about firm earnings—such information asymmetry increases the demand by analysts and potential investors for earnings guidance (Ajinkya & Gift, 1984; Verrecchia, 2001). Lowering information asymmetry may be desirable to managers because it is associated with higher liquidity (Diamond & Verrecchia, 1991) and lower cost of capital (Leuz & Verrecchia, 2000). We follow the accounting literature (e.g., Coller & Yohn, 1997) and measure information asymmetry as the *bid-ask spread of a company's stock price* (averaged by fiscal year). We also include firm size (the *log of the total assets*) as another measure of information asymmetries since larger firms are usually more closely scrutinized by the market compared smaller ones, which results in less information asymmetry (e.g., Aggarwal, Krigman, & Womack, 2002). We also include the *number of analysts covering* a firm in a given year as a measure of how much information about a firm is available.

Managerial incentives. More frequent guidance can reduce equity mispricing, and, as a result, firms

that are managed by CEOs with greater levels of equity-based compensation may issue guidance more frequently. Perhaps this is most obvious for guidance that is perceived to contain good news. Equally, however, the absence of guidance may be interpreted negatively. For example, when Merck CEO Kenneth Frazier revealed that the firm would discontinue earnings guidance, sell-side analysts called the choice “disingenuous” and “befuddling,” and Merck stock fell 3% based on the news. To control for this, we include performance-based CEO compensation as a control variable, representing nonsalary CEO remuneration that is tied to company performance (Bergstresser & Philippon, 2006).

Year and industry. We include year and industry (based on the Standard Industrial Classification system at the 3 digit level [SIC 3D]) dummies in the estimation procedures because firms' tendency to issue guidance changes over time and might differ between industries (e.g., Graham et al., 2005).

Dependent Variables Used in the Second Set of Regressions

The dependent variable for the first set of hypotheses is the *precision of firms' annual earnings guidance*. We measure precision as the range in which guidance is expressed (in cents). Because this range will depend in part on the size of the guidance (a 4-cent range for a 5-cent-per-share midpoint is less precise than a 4-cent range for a 50-cent-per-share midpoint), we combine this dependent variable with a control variable for the midpoint of the guidance range. Larger guidance ranges represent lower precision. Therefore, to facilitate interpretation of coefficients (i.e., higher coefficients connote higher precision), we create our measurement of *precision* by multiplying this variable by -1 .

As the dependent variable for Hypothesis 4, we use the *cumulative abnormal market adjusted returns* of a firm's share price based on a window of one day before the announcement until one day after the announcement, along the lines of prior studies in finance and management (Hayward & Hambrick, 1997; McWilliams & Siegel, 1997). We calculate the expected return (in percent) based on a market model that assumes a stable linear relation between the market return (value weighted, based on CRSP) and return of the shares of the focal firm. The window in which the market model is estimated is one year, ending a week before the earnings guidance announcement, helping to ensure that the estimation window is not unduly influenced by premature

release of information. To ensure that we are only capturing the effect of guidance announcements, we use the Raven Pack dataset of company press releases and announcements to exclude all observations for which confounding other announcements were made during the announcement window. This results in 541 observations being excluded from the analysis.

Independent Variables Used in the Second Set of Regressions

Prior year's earnings miss. This variable measures whether a firm missed its earnings guidance in the prior year, coded 1 if the guidance was missed and 0 otherwise.

Below-industry-average market performance. This variable captures whether a firm underperformed its industry peers (based on three-digit SIC) in the quarter before earnings guidance was given, coded 1 if a firm was underperforming and 0 otherwise. This choice of measure follows evidence that professional investors examine the performance of focal firms in an industry relative to peers when arriving at expected returns that cover the cost of capital of investing in the industry (e.g., Fama & French, 1997), and that security analysts are usually assigned to industry groups (Barber, Lehavy, McNichols, & Trueman, 2001).

Negative reaction to an M&A. This measures whether there was a negative reaction (abnormal return, see above) to an M&A announcement made by the focal firm in the quarter before the focal earnings guidance (if no M&A announcement was made, the variable is set to 0).

Upward guidance. This measures the degree (as a proportion) to which the focal guidance is higher than the previous year's EPS.

Control Variables Used in the Second Set of Regressions

We incorporate a variety of additional control variables in the OLS procedure. As described above, we include the midpoint of the focal guidance to control for smaller guidance ranges around lower midpoints. Based on the two-stage regression model, we also include the inverse Mills ratio from the Probit regression to control for the selection bias (Heckman, 1979; Winship & Mare, 1992). We also include the time in *days between the earnings guidance and the end of the fiscal year* as a control variable, assuming that guidance becomes more accurate

and potentially more precise the closer it is to the end of the financial period.

The precision of earnings guidance might result from stable firm practices. We seek to capture such relatively time invariant processes through clustered errors (e.g., Andrews, 1991; Cameron and Miller, 2011; Petersen, 2009; Rogers, 1993; Thompson, 2011; Williams, 2000, Wooldridge, 2010). However, we also control for time-variant changes in such practices by including the *average precision with which forecasts were announced the year prior to the focal year* as a control.

Another factor that can influence guidance precision involves the uncertainty faced by the focal firm—more uncertainty increases the difficulty of being more precise (Ajinkya & Gift, 1984; Baginski & Hassell, 1997; Baginski, Hassell, & Kimbrough, 2004). We seek to use control variables to reflect this uncertainty, starting with the *average precision used by all firms in a focal firm's industry* in every year (based on three-digit SIC codes), which is an indicator of industry patterns of earnings guidance precision, as well as of the general uncertainty faced by an industry. We also include a measure of firm-specific risk in our analysis. We calculate the *coefficient of share price variation* as a risk measure for each company in our dataset by dividing the yearly variance of a company's share price (adjusted for splits) by the average yearly share price of that company (Brown, Hillegeist, & Lo, 2005; Field, Lowry, & Shu, 2005; Rogers & Stocken, 2005).

In a similar vein, we control for the *number of forecasts* a firm makes in each fiscal year in light of the variation in the frequency of guidance updates and the prospect that more frequent guidance is a sign of changing conditions or uncertainty.

We also include control variables for a firm's ability to engage in earnings management. Healy and Wahlen (1999: 368) described earnings management as "judgment in financial reporting and in structuring transactions to alter financial reports to mislead some stakeholders about the underlying economic performance of the company." It follows that firms with greater ability to make such a judgment will be better able to attain earnings targets, which can make it easier for them to release more precise guidance.

To control for this effect, we include a variety of measures shown to influence firms' ability to manage earnings. First, we control for firm size by including the natural log of a *firm's assets*, since larger firms tend to have a greater ability to manage their earnings (Hall & Weiss, 1967). Second, because depreciation charges involve a substantial amount of

judgment, we use the reported amount of *depreciation and amortization* in a given year as a control (Beaver, McNichols, & Rhie, 2005). Third, earnings manipulation often occurs through discretionary accruals involving accounting treatments of balance sheet items in accrual-based accounting. Thus, we include *current assets* (including accounts receivable and inventory holdings) and *current liabilities* as control variables (Barton & Simko, 2002; see Cohen, Dey, & Lys, 2008; Oyer, 1998; Roychowdhury, 2006).

Finally, we control for the effect of *extraordinary items*, an accounting category that consists of one-time expenses and noncash charges, including items such as goodwill from M&As, restructuring reserves, and losses from assets that have been adversely marked to market. There is evidence that analysts pay less attention to such nonrecurring charges because they are typically unrelated to a firm's ongoing operations (Bernstein & Siegel, 1979; Bradshaw & Sloan, 2002; DeGeorge, Patel, & Zeckhauser, 1999). Because the treatment, timing, and magnitude of these items is at least somewhat discretionary, firm-to-firm practices pertaining to extraordinary items have the potential to be highly heterogeneous. Firms who have the ability to account for extraordinary items in a given year might be able to manage their earnings, and thus can issue more precise earnings, making it useful to control for them (Bernstein & Siegel, 1979; Bradshaw & Sloan, 2002; DeGeorge et al., 1999).

In a similar vein, the interpretation of favorable earnings guidance may be influenced by self-serving practices by CEOs, who may be motivated to manipulate earnings numbers to obtain higher compensation. In fact, the earnings guidance literature has suggested that variable compensation is a very significant predictor of whether strategic leaders engage in earnings management. For instance, Cheng and Warfield (2005) reported that over the 1993–2000 timeframe, strategic leaders with higher stock-based compensation that was heavily influenced by earnings performance were more likely to engage in earnings management. Similarly, Bergstresser and Philippon (2006: 511) reported that “the use of discretionary accruals to manipulate reported earnings is more pronounced at firms where the CEO's potential total compensation is more closely tied to the value of stock and option holdings,” in other words, where the value of such stock is closely tied to earnings performance. Accordingly, we include the amount of *variable (performance-based) CEO compensation* as a control

variable, representing nonsalary CEO remuneration that is tied to company performance (Bergstresser & Philippon, 2006).

As in the Probit model, we include a measure of *information asymmetry*—the bid–ask spread average of a company's stock price in the fiscal year in which the guidance is issued (Ajinkya & Gift, 1984; Verrecchia, 2001). We also include the *number of analysts covering* a firm in the focal year, since a larger analyst following will reduce information asymmetry (Aggarwal, Krigman, & Womack (2002). As argued above, information asymmetry leads analysts and potential investors to seek additional earnings guidance (Ajinkya & Gift, 1984; Verrecchia, 2001), and perhaps more precise guidance is a means of reducing such information asymmetry.

The precision with which earnings forecasts are issued could also be influenced by managers' confidence in their ability to make precise forecasts. With a stronger history of accurate guidance, such managers may be more confident in this ability (e.g., Camerer & Lovallo, 1999; Hayward & Hambrick, 1997). To exclude this alternative explanation for more precise guidance, we employ an additional control variable. We examine the *history of accuracy* of a firm's earnings guidance activities in the last two years, which we measure as the percentage of accurate annual and quarterly guidance. We determine guidance to be accurate when real earnings match the midpoint of the guidance range; by defining accuracy in this way, our measure is independent of the precision with which past guidance was issued on the basis that being accurate within a wider range will instill less confidence. (We also include a measure for *post hoc* accuracy of forecasts in a sensitivity analysis, see below.)

Lastly, we control for the firm's *PE ratio* (based on the projected earnings). Higher PE ratios imply growth potential relative to current earnings. As an indication of the firm's future potential, including a PE variable allows us to control for the extent to which growth expectations may discount the importance of focal earnings guidance (Fama, 1991).

RESULTS

The average precision in our sample is -8.01 —this means that the average range surrounding guidance is 8.01 cents (as describe above, we multiply the range by -1 to ease interpretation of our results, so that larger numbers indicate more precision). In our sample, precision is positively correlated to an earnings miss in the prior year ($p < 0.05$),

to a negative market reaction to an M&A announcement ($p < 0.05$), and to performing below industry average before the guidance ($p < 0.05$). The full set of descriptive statistics and first-order correlations can be found in Table 1.

As explained above, we can only examine the antecedents of earnings precision for firms that choose to issue guidance, and we correct for this selection bias when we test our hypotheses, using a Heckman two-staged procedure.

Table 2 summarizes the results of the first step of this procedure. As described above, our combined dataset contains all firms covered in the First Call database for which Compustat and CRSP data were available. However, the firms covered in the First Call database do not necessarily issue earnings guidance every year. Thus, our dataset contains 19,424 firm-year observations, while, on average, firms issue guidance in only 38% of the years. However, we find that more firms issue guidance in the early years of our sample (e.g., 40% in 2005) than in the later years (e.g., 34% in 2011).

The first step of this analysis addresses the question of what influences whether a firm issues earnings guidance in a given year. To examine this question, we conduct a Probit regression containing, as independent variables, factors that have been found in past studies to influence a firm's propensity to issue earnings guidance (Heckman, 1979; Winship & Mare, 1992). Table 2 summarizes the results of this analysis. The results indicate that the level of information asymmetry ($p < 0.001$), the size of the firm's CEOs variable compensation ($p < 0.001$), as well as the fact that a firm issued guidance in the prior year ($p < 0.001$) all increase the probability that firms will issue guidance in the focal year.

The second step of the Heckman procedure is summarized in Table 3. It tests Hypotheses 1a through 3a. Model 0 examines the effect of only the control variables on guidance precision. We find significant negative coefficients for the absolute value of the guidance midpoint ($p < 0.001$), whether the guidance represents an upward guidance ($p < 0.05$), the time between the guidance and the end of the year ($p < 0.001$), as well as a firm's total assets (log) ($p < 0.001$). Significant positive coefficients are found for the number of forecasts ($p < 0.01$), the average precision with which guidance was issued in the previous fiscal year ($p < 0.001$), current assets ($p < 0.001$), CEOs' variable compensation ($p < 0.01$), number of analysts covering the firm ($p < 0.001$), the PE ratio ($p < 0.05$), and the inverse Mills ratio ($p < 0.01$).

Model 1 tests Hypotheses 1a, 2a, and 3a, wherein the coefficient for "previous year earnings miss," "negative performance relative to industry," and "negative reaction to M&A announcements" are all significant and positive. The results are thus consistent with the OIM perspective embedded in Hypotheses 1a, 2a and 3a. In Model 2, we test whether this direct relationship is moderated by whether the focal guidance represents a projected increase in earnings (upward guidance). The coefficient for upward guidance is negative and significant ($p < 0.05$), which indicates that upward guidance is on average issued with less precision (perhaps this is driven by caution, to reduce the risk of being wrong). However, the interaction between "previous year's earnings miss" and upward guidance is significant and positive, lending support to Hypothesis 1a: after an earnings miss, upward guidance is issued with more precision than upward guidance that does not follow an earnings miss. The interaction between "negative reaction to M&As" and upward guidance is also significant and positive, lending support to Hypothesis 3b. However, the interaction between "below-industry-average performance" and upward guidance is not significant. Thus, Hypothesis 2b is not supported.

The results of the analysis to test Hypothesis 4 are presented in Table 4.

This analysis is based on standard event study, as discussed earlier. The key independent variable in this analysis is the precision of the focal guidance. We use the same controls as before, but adding our upward guidance measure, as discussed in the measures section, to control for whether the guidance represents good (or bad) news in relation to the previous guidance. We follow most event studies and do not use standardized coefficients, since the dependent variable is market reaction in percent—a variable that can be easily interpreted and compared to similar studies (see the discussion section below). As Table 4 indicates, precision has a positive effect on a firm's abnormal return ($p < 0.05$), lending support to Hypothesis 4.

Sensitivity Analyses and Robustness Tests

Industry measurement. In our main analysis, we use three-digit SIC codes to identify a firm's industry membership. To check whether our results are robust across different industry specifications, we also conduct our analysis using two-digit SIC codes. Doing so yields similar results to those reported above for coefficients of interest.

TABLE 1
Descriptive Statistics, Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 Precision	-8.01	9.05	1.00																						
2 Guidance announcement abnormal announcement return	-0.25	9.04	0.03	1.00																					
3 Previous year earnings miss	0.51	0.50	0.03	0.01	1.00																				
4 Negative M&A announcement return	0.26	0.44	0.05	0.00	0.01	1.00																			
5 Return below industry average	0.29	0.45	0.04	-0.00	0.02	0.02	1.00																		
6 Upward guidance	0.30	0.46	-0.01	0.01	-0.10	-0.04	-0.02	1.00																	
7 Guidance midpoint	187.61	145.80	-0.31	0.04	0.15	0.10	-0.01	-0.03	1.00																
8 Firm risk	1.50	5.89	-0.04	0.02	0.05	0.04	-0.01	-0.02	0.18	1.00															
9 Time until fiscal year end	116.10	77.41	-0.12	-0.02	-0.05	-0.14	-0.01	0.02	-0.04	-0.04	1.00														
10 Industry precision	-0.07	8.08	0.08	0.02	0.06	-0.03	0.01	-0.03	0.18	0.03	0.02	1.00													
11 Number of forecasts	4.11	1.76	-0.02	0.03	0.04	0.13	0.00	-0.03	0.23	0.05	-0.32	0.06	1.00												
12 Previous year precision	-5.96	10.74	0.11	0.01	0.08	0.06	-0.01	-0.03	0.30	0.04	-0.01	0.20	0.10	1.00											
13 Total assets (log)	7.36	1.65	-0.21	0.04	-0.00	0.17	-0.04	-0.01	0.57	0.04	-0.06	0.08	0.28	0.21	1.00										
14 Depreciation & amortization	211.00	550.90	-0.09	-0.01	-0.01	0.12	-0.02	0.00	0.28	-0.01	-0.01	0.01	0.12	0.08	0.59	1.00									
15 Current assets	1971.00	5066.00	-0.06	-0.00	-0.00	0.18	0.00	-0.01	0.32	0.02	-0.02	0.01	0.14	0.09	0.56	0.80	0.94	1.00							
16 Current liabilities	1450.00	4134.00	-0.06	-0.01	0.02	0.17	-0.00	-0.01	0.30	0.02	-0.02	0.02	0.14	0.09	0.56	0.80	0.94	1.00							
17 Extraordinary items	0.12	12.02	-0.01	0.00	0.01	-0.01	0.03	-0.00	0.01	0.01	-0.01	0.01	0.02	0.00	0.03	0.02	0.00	0.01	1.00						
18 Leverage	1.68	40.53	0.02	-0.04	-0.03	-0.00	0.02	0.00	-0.03	0.00	-0.02	-0.00	0.01	-0.01	0.00	0.00	0.00	0.00	-0.00	1.00					
19 Information asymmetry	0.94	0.63	-0.21	0.07	0.15	0.04	-0.00	-0.03	0.61	0.23	-0.03	0.09	0.13	0.18	0.21	0.04	0.09	0.08	-0.00	-0.01	1.00				
20 Variable CEO compensation	6614.00	6890.00	-0.02	0.02	0.03	0.07	-0.01	0.01	0.21	0.05	-0.02	0.02	0.09	0.05	0.25	0.17	0.24	0.24	-0.00	0.00	1.00				
21 Number of analysts following	5.33	6.68	0.06	0.02	0.00	0.08	0.02	-0.01	0.17	0.02	-0.07	0.02	0.08	0.10	0.27	0.25	0.27	0.23	-0.01	0.02	0.11	0.09	1.00		
22 Past accuracy	-0.33	0.75	0.06	0.01	0.05	-0.01	0.03	-0.00	0.03	-0.07	-0.03	0.00	0.01	0.05	0.00	0.08	0.08	0.06	-0.01	0.02	0.03	0.01	0.54	1.00	
23 Price earnings ratio	16.98	83.30	0.05	0.02	0.02	0.01	0.03	0.00	-0.01	0.01	0.00	0.04	0.00	0.06	-0.02	0.00	0.00	0.00	0.00	0.00	-0.03	-0.01	0.02	0.01	1.00

Note: Correlations with an absolute value of 0.03 or greater are significant at 5%.

TABLE 2
Probit Regression, Probability Modeled for Firm Issuing Earnings Guidance in a Given Year

Intercept	1.57 (9.95)
Information asymmetry	0.28*** (0.05)
Number of analysts following	0.00 (0.01)
Assets (log)	0.00 (0.00)
Performance-based CEO compensation	0.01*** (0.00)
Guidance issued in previous year	0.60*** (0.05)
Pseudo R-squared	0.20

Notes: Standard errors are in parentheses; year and industry dummies are not shown; $n = 19,424$.

* $p < .05$

** $p < .01$

*** $p < .001$

Time between earnings guidance and end of fiscal year. In our main analysis, we choose the last earnings guidance a firm provides before the last month of the fiscal year. As a check of whether our

results are driven by this choice, we also estimate the complete model using the last guidance before the last quarter of the fiscal year. Coefficients of interest remain significant, with the same sign as those in the main analysis.

As discussed above, some firms issue guidance more than once in a fiscal year. We therefore also include a sensitivity analysis where we use the cumulative precision of all guidance issued after our events of interest, but before 30 days before the end of the fiscal year. The two events for which we can do this are “after an earnings miss” and “after a negative reaction to an M&A announcement.” We cannot use this cumulative approach for “below-industry-average performance,” because there we look at a firm’s performance relative to its industry in the quarter before individual guidance was issued. Results from these analyses do not change the significance of the coefficients of interest.

TABLE 3
Results of OLS Regression Analysis in Predicting Earnings Precision

	Model 0 (controls only)	Model 1 (direct effects)	Model 2 (interactions)
Previous year earnings miss		0.30** (0.11)	0.30** (0.11)
Return below industry average		0.20* (0.10)	0.21* (0.10)
Negative M&A announcement return		0.42*** (0.12)	0.43*** (0.11)
Upward guidance * previous year earnings miss			0.64** (0.19)
Upward guidance * Return below industry return			0.31 (0.26)
Upward guidance * negative M&A announcement return			0.54* (0.25)
Upward guidance	-0.58* (0.21)	-0.52* (0.21)	-0.51* (0.21)
Guidance midpoint	-3.19*** (0.57)	-3.29*** (0.58)	-3.42*** (0.58)
Firm risk	0.13 (0.10)	0.13 (0.10)	0.15 (0.10)
Time until fiscal year end	-0.98*** (0.14)	-0.92*** (0.14)	-0.88*** (0.14)
Industry precision	0.54 (0.30)	0.54 (0.30)	0.53 (0.30)
Number of forecasts	0.41** (0.13)	0.40** (0.13)	0.40** (0.13)
Previous year precision	1.54*** (0.20)	1.52*** (0.20)	1.50*** (0.19)
Total assets (log)	-1.35*** (0.22)	-1.33*** (0.22)	-1.21*** (0.22)
Depreciation and amortization	-0.70 (0.39)	-0.63 (0.38)	-0.61 (0.38)
Current assets	0.95*** (0.28)	0.94*** (0.28)	0.90*** (0.27)
Current liabilities	0.09 (0.26)	-0.01 (0.25)	-0.02 (0.26)
Extraordinary items	-0.03 (0.05)	-0.03 (0.04)	-0.03 (0.04)
Leverage	0.05 (0.14)	0.05 (0.14)	0.04 (0.14)
Information asymmetry	-0.57 (0.30)	-0.60* (0.30)	-0.61* (0.31)
Performance-based CEO compensation	0.48** (0.16)	0.46** (0.16)	0.47** (0.15)
Number of analysts following	0.68*** (0.12)	0.67*** (0.12)	0.63*** (0.12)
Past accuracy	0.10 (0.12)	0.10 (0.12)	0.12 (0.12)
Price earnings ratio	0.26* (0.11)	0.25* (0.11)	0.23* (0.10)
Inverse Mills ratio from probit regression	0.72** (0.23)	0.72** (0.23)	0.70** (0.23)
R-squared	0.21	0.22	0.24

Notes: Standardized coefficients, standard errors in parentheses; $n = 4728$.

* $p < .05$

** $p < .01$

*** $p < .001$

TABLE 4
The Effect of Precision on a Firm's Abnormal Returns on the Day the Earnings Forecast was Announced

	Model 3 (Controls only)	Model 4 (market reaction)
Intercept	-1.859 (1.269)	-1.895 (1.278)
Precision		0.058* (0.023)
Upward revision relative to last guidance	0.044 (0.049)	0.054 (0.053)
Guidance midpoint	-0.004** (0.002)	-0.003* (0.002)
Firm risk	0.012 (0.026)	0.006 (0.026)
Time until fiscal year end	-0.002 (0.002)	-0.002 (0.002)
Industry precision	0.013 (0.018)	0.004 (0.018)
Number of forecasts	0.074 (0.079)	0.061 (0.081)
Previous year precision	-0.005 (0.018)	-0.013 (0.018)
Total assets (log)	0.386** (0.132)	0.435** (0.134)
Depreciation and amortization	0.000 (0.000)	0.000 (0.000)
Current assets	0.000 (0.000)	0.000 (0.000)
Current liabilities	0.000 (0.000)	0.000 (0.000)
Extraordinary items	0.002 (0.006)	0.003 (0.006)
Leverage	-0.008 (0.008)	-0.008 (0.008)
Information asymmetry	0.839* (0.348)	0.827* (0.349)
Performance-based CEO compensation	0.000 (0.000)	0.000 (0.000)
Number of analysts following	-0.007 (0.023)	-0.017 (0.024)
Past accuracy	0.225 (0.219)	0.204 (0.220)
Price earnings ratio	0.002 (0.002)	0.002 (0.002)
Inverse Mills ratio from probit regression	-0.590* (0.287)	-0.802* (0.304)
R-square	0.02	0.03

Notes: Since market movements of the course of one day are relatively small we present the coefficients with three digits. Standard errors in parentheses; $n = 4187$.

* $p < .05$

** $p < .01$

*** $p < .001$

Managers' confidence in their forecasting ability. As we elaborated above, managers that are more confident in their ability to forecast future earnings might issue guidance with more precision. Our context limits this effect to some degree, since the organizational setbacks we study should in fact reduce such confidence. In addition, we control for managers' confidence in their forecasting ability in our main analysis. However, this control is based on historical performance. As a sensitivity analysis, we add an additional control: A measure of *ex post* accuracy to account for guidance accuracy in the focal year as the absolute value of the distance between the guidance midpoint and the firm's actual earnings as a percentage of the guidance midpoint. This measure

captures managers' forecasting ability, which can be a measure of their *ex ante* confidence if we assume that leaders have some degree of understanding of their forecasting abilities. Doing so leads to similar results as those reported above (the measure of focal year guidance error itself has a negative and significant [$p < 0.001$] coefficient, suggesting that firms with larger guidance errors issue less precise guidance). This further indicates that the results of interest are not driven by managers' confidence about their guidance abilities.

Estimation method. In our main analysis, we estimate our models with the use of clustered errors. We also conduct an analysis using fixed firm and year effects. Doing so results in similar coefficient sizes and significance as those in our main analysis.

Event window. To test Hypothesis 4, in our main analysis we use a short event window to reduce the noise in our measurement, since information other than announcements of earnings guidance might be released in larger windows, making it harder to capture the effect of the guidance announcement on a firm's stock market performance. However, information about an upcoming announcement might leak before the actual announcement itself—a fact that justifies the use of a larger window. We therefore also conduct a set of sensitivity analyses using three, four, five, and six days before the announcement as the start of the event window; in all these analyses, precision remains a significant and positive predictor of the cumulative abnormal return.

Controlling for downside risk as predicted by a given forecast. A narrower range in earnings guidance could be perceived as a sign of lower downside risk in actual earnings. A larger range suggests that the actual earnings could be lower (or higher) than for a narrower range (e.g., 5 to 15 cents vs. 9 to 11 cents). The market may react positively to a narrower range because it implies less downside risk. In our main analysis, to test Hypothesis 4, we control for the midpoint of the guidance. We conduct an additional sensitivity analysis in which we replace this control with the lowest point of the guidance, which represents the lowest possible value that a firm predicts the earnings to be. Doing so leads to similar results as found in our main analysis (precision remains a significant predictor of the abnormal return surrounding a guidance announcement).

Direction of guidance. As suggested, more precise forecasts can be motivated by an interest to be more persuasive, and by OIM motivations. Could our result that precision has a positive effect on a firm's share price be driven by persuasion? Past studies

have indicated that upward guidance—that is, guidance that represents an increase over past guidance—has a positive effect on a firm's share price, while downward guidance has a negative effect (Anilowski et al., 2007; Atiase, Li, Supattarakul, & Tse, 2005; Kasznik & McNichols, 2002). If precision is more persuasive, then precision will have a positive effect on share prices for upward guidance, but a negative effect for downward guidance (it would persuade the market that the up- or downward guidance is realistic). However, if precision creates generalized positive impressions about a firm and its leaders (as we suggest), then that effect should be independent of the direction of the guidance.

While we control for the direction of the guidance in our analysis, we seek to examine this matter further. To do so, we split our sample into two subsamples. One contains all observations in which the focal guidance represents upward guidance, and one has all observations that represent downward guidance. In both subsamples, precision has the same positive effect (although in both samples the effect of precision is only significant at $p < 0.071$). This provides additional evidence that precision has a positive effect on the share price independent of the direction of the guidance—precision seems to create overall positive impressions.

DISCUSSION

We presented three sets of results that support the proposed theoretical framework linking OIM to forecast precision. The first set of results suggests that forecast precision can result from three distinct antecedents of OIM: earnings guidance misses, earnings that are below industry average, and poorly received M&As. These results underscore general antecedent conditions that prompt firm leaders to convey a greater sense of control through more precise forecasts. The effect sizes we find in this analysis are quite substantial; after an earnings miss, precision increases by 0.3 standard deviation points, which represents an overall increase of 2.9 cents (the average precision is an 8 cent spread). After a period with below-industry-average returns, precision increases by 1.9 cents, and after a negative reaction to an M&A announcement it goes up by 4 cents—a 50% increase from the average level of precision. The second set of results shows that in this context, forecast precision is more pronounced when firm leaders seek to convey brighter organizational prospects, indicating that the need to communicate control is even more pronounced when stakeholders

are asked to accept upward guidance. The third set shows that forecast precision has a direct effect on a firm's share price movement on the day the forecast is announced, which indicates that the market values the sense of control that more precise guidance suggests.

Contributions to OIM Theory

First, we introduced precision as an OIM tactic, which could be used not just by strategic leaders but also by salespeople and other organizational forecasters. Elsbach (2003) showed that leaders use verbal accounts, category labels, symbolic behaviors, and physical markers to respond to a variety of threats: identity, image, and reputation. These approaches, while varying in their respective foci, highlight that impression managers are often motivated to recover social support either because their organizations' legitimacy is threatened or weak (e.g., Elsbach & Kramer, 1996), or because their organizations have adopted a controversial policy or received a negative appraisal (e.g., Westphal & Graebner, 2010).

Complementing these prior studies, we examined an ongoing manifestation of the management of stakeholder perceptions regarding firms' performance by analyzing how leaders use quantitative guidance to shape performance perceptions. As discussed, we observe a tendency in the organizational impression management literature to address either qualitative responses to deficits in organizational performance (e.g., verbal accounts) or certain kinds of compensatory organizational initiatives (e.g., making changes to a board of directors, intervening with journalists and security analysts). However, it is common, and perhaps even necessary sometimes, for strategic leaders to also offer more precise framing of guidance as a means of shaping performance expectations. For instance, during the global financial crisis of 2008, bank leaders sought to assure investors that their firms were solvent by making increasingly precise representations about the adequacy of their capital reserves (Chami, Hakura, Cosimano, & Barajas, 2010; Lapavitsas, 2009).

Kahneman (2011) concluded that humans adopt two modes of thinking: Type 1 thinking involves fast, intuitive, unconscious thought, while Type 2 thinking is based on slow, calculating, conscious thought. We suggest that much of the OIM literature is predicated on Type 2 thinking; however, Type 1 would be effective as an OIM tactic because the fast, intuitive,

and subconscious reactions it involves (Kahneman, 2011) could reduce the likelihood that target audiences would raise questions about strategic leaders' motivations. There is strong evidence from psychology studies that precision operates as a Type 1 process (e.g., Jerez-Fernandez et al., 2014; Mason et al., 2013). We therefore suggest that other tactics that invoke Type 1 processes—grounded in the literature on heuristics and biases—are also worthy avenues for further OIM research.

In addition to contributing to OIM theory, this paper adds a fresh perspective to existing accounting explanations of earnings guidance precision by positioning OIM explanations of more precise judgment relative to other explanations. Hypotheses based on uncertainty or accuracy theory tend to examine the level of uncertainty in earnings guidance when the guidance is made in order to predict forecast precision (e.g., Choi, Myers, Zang, & Ziebart, 2010). In addition, "managerial confidence" theory predicts that managers whose earnings are more predictable and managers who have more confidence in their ability to predict earnings tend to be more precise. We extensively controlled for these aspects, yet our coefficients of interest were significant even with these controls. Our context also limits confidence as an explanation, since managers will be more likely to be less confident after any of the negative events we examined. Thus by imposing conditions of organizational setbacks, our study indicates that OIM plays a role in precision.

On the surface, the presented results might seem surprising: When managers have experienced an organizational setback, they could be expected to exercise greater care in forecast accuracy. However, the results presented here are consistent with the OIM-based theory developed earlier—the motivation to establish or reestablish greater authority with stakeholders is salient and instrumental after organizational setbacks. The results are also consistent with the evidence of widespread errors in earnings guidance, and evidence of managerial short-termism, wherein the motivation to be seen as being in control could trump that of being accurate. An unresolved question that is beyond the scope of this article is whether more precise judgment ultimately "catches up" with top managers in the sense that investors lose confidence and faith in top managers who miss targets.

Second, there is strong support from our estimation procedures that managerial attempts to establish a greater sense of control are stronger when managers forecast a brighter future (when they issue upward

guidance) after organizational setbacks. In fact, our results indicate that managers are careful when they issue upward guidance; on average, they do so with less precision in order to reduce the risk of being wrong. However, when they forecast a rosier picture after setbacks, they do so with more precision. Such setbacks foster negative impressions, after which the prediction of higher earnings invokes even greater cognitive dissonance. Therefore, in this context managers would be even more motivated to overcome skepticism by using more precise forecasts to strengthen impressions that they control firm strategy and performance. We note, however that these results were sensitive to the type of organizational setback, with previous years' earnings miss and negative M&A announcement returns implicating the effect strongly.

Third, we provide evidence regarding the efficacy of forecast precision as an OIM tactic, underscoring managers' rationale for being more precise. In fact, this effect of precision of a firm's share price is quite substantial. The average precision of earnings forecasts is 8 cents. Our analysis indicates that an increase in precision of 1 cent results in an abnormal return on the day the guidance is announced of about 0.06%. Thus, an increase from the average precision to the maximum possible precision (a range of 0) will result in an abnormal return of about half a percent (0.48%). Given that the average market capitalization in our sample is \$1.9 billion, this suggests that if firms with an average market cap announce their earnings guidance with maximum precision, instead of with average precision, they will increase their market value on the announcement day by \$9.18 million. Our analysis also suggests that this result is not simply attributable to precision being more persuasive, insofar as the results are independent of whether the guidance represents good or bad news (up- or downward guidance).

Generalizability to Other Domains of Managerial Precision

Theory and evidence has suggested that managers are motivated to be precise to manage impressions of stakeholders in the crucial domain of earnings guidance, and there is every reason to believe that precision would be used as an impression management tactic well beyond this domain. We argue that precision creates the impression that a forecaster is authoritative and in control—an impression that would be desirable in a variety of situations. In an organizational setting, any prediction of the impact

of a planned strategy or action can be expressed with varying levels of precision and the theory presented here suggests that the more motivated the forecaster is to be perceived as authoritative and in control, the greater the precision they will use. In turn, this points to testable relationships, including that prospective outcomes of more challenging strategic initiatives, such as M&As or new market entries or business plans in entrepreneurial settings, would be framed with a high level of precision.

Similarly, salespeople might use precision to gain authority with, and overcome skepticism of, new customers. By contrast, they would be predicted to be less precise in representations to existing and more satisfied customers, where credibility is already established. In the context of new products, companies would tend to make strong and precise representations about defect rates or performance because of their managers' bias toward stronger impression management. The same mechanisms would be manifested outside the organizational context, including when politicians forecast the costs of policies or actions and their likely outcomes. Finally, the theory developed here also suggests that researchers across scholarly disciplines might use more precision than justified when they present results or when they discuss implications of their work in an attempt to convey that they are authoritative in the subject matter. In each case, the theory here suggests that the use of precision may have favorable effects on audiences and stakeholders, but the longer-term implications of such judgment remains an important avenue for scholarly inquiry.

Limitations and Suggestions for Future Research

Limitations of this study include the prospect that other factors impact stakeholder responses to earnings releases, including qualitative statements about earnings guidance. We recognize that management statements that accompany earnings guidance—such as additional explanation of the numbers, verbal statements about the firm's prospects, and strategic intent—are also used to augment the precision of the estimate. The manner and the effectiveness with which quantitative and verbal representations are used in tandem remains a fruitful area of research.

Similar to prior research on OIM, we have not directly observed CEO or CFO intentions through, say, survey instruments (see Graffin, Haleblan, & Kiley, 2015, for an approach that is related to ours), although the setbacks that implicate OIM have been substantiated through survey data in other research (e.g., Westphal et al., 2012). Overall, then, we present

a robust pattern of results wherein each adverse organizational development positively affects precision for subsequent guidance. Likewise, we did not observe the time taken for investors and analysts to cognitively process precise earnings guidance; instead, we rely on evidence from the psychology literature to account for these processes.

The study also has limitations with respect to the scope of research questions asked. Other aspects of guidance precision remain important, including factors that explain when managers' credibility is sufficiently impaired that any forecasts are unpersuasive. Various questions emerge for future research. For instance, have professional investors become more sophisticated over time in learning about and interpreting the level of precision in guidance? Moreover, what are the costs to managers of issuing precise forecasts with a level of precision that is not warranted by the underlying uncertainty of their firms? Past research has suggested that managers often fail to deliver on their forecasts. While our results, to some degree, help to explain this finding, questions about the consequences of such failures, including any fallout from stakeholders that affects their willingness to trust subsequent forecasts, remain. Could it be that earnings guidance precision is a precursor to earnings management that has been associated with fraudulent earnings reporting?

As a brief conclusion, we remain intrigued by (a) the further potential to investigate the antecedents, nature, and implications of precision as an impression management tactic in other domains of organizational inquiry, and (b) the scope for other kinds of numerical representations to serve as a powerful OIM tactic. Whether for scholars who make claims about the significance of coefficients or managers who make representations about prospective earnings, the motivation and consequences of using a high level of precision in judgments warrants closer investigation.

REFERENCES

- Aggarwal, R. K., Krigman, L., & Womack, K. L. 2002. Strategic IPO underpricing, information momentum, and lockup expiration selling. *Journal of Financial Economics*, 66: 105–137.
- Aiken, L. R., & Williams, E. N. 1973. Response times in adding and multiplying single-digit numbers. *Perceptual and Motor Skills*, 37: 3–13.
- Ajinkya, B. B., & Gift, M. J. 1984. Corporate managers' earnings forecasts and symmetrical adjustments of market expectations. *Journal of Accounting Research*, 22: 425–444.

- Alpert, M., & Raiffa, H. A. 1982. Progress report on the training of probability assessors. In Kahneman, D., Slovic, P. & Tversky, A. (Eds.), *Judgment Under Uncertainty: Heuristics and Biases*. Cambridge, UK: Cambridge University Press.
- Andrews, D. W. K. 1991. Heteroskedasticity and autocorrelation consistent covariance matrix estimation. *Econometrica*, 59: 817–858.
- Anilowski, C., Feng, M., & Skinner, D. 2007. Does earnings forecasts affect market returns? The nature and information content of aggregate earnings forecasts. *Journal of Accounting and Economics*, 44: 36–63.
- Atiase, R.K., Li, H., Supattarakul, S., & Tse, S. 2005. Market reaction to multiple contemporaneous earnings signals: Earnings announcements and future earnings forecasts. *Review of Accounting Studies*, 10: 497–525.
- Baginski, S. P., Conrad, E. J., & Hassell, J. M. 1993. The effects of management forecast precision on equity pricing and on the assessment of earnings uncertainty. *The Accounting Review*, 48: 913–927.
- Baginski, S. P., & Hassell, J. M. 1997. Determinants of management forecasts precision. *The Accounting Review*, 72: 303–312.
- Baginski, S. P., Hassell, J. M., & Kimbrough, M. D. 2004. Why do managers explain their earnings forecasts? *Journal of Accounting Research*, 42: 1–29.
- Barber, B., Lehavy, R., McNichols, M., & Trueman, B. 2001. Can investors profit from the prophets? Security analyst recommendations and stock returns. *The Journal of Finance*, 56: 531–563.
- Bargh, J. A., & Chartrand, T. L. 1999. The unbearable automaticity of being. *The American Psychologist*, 54: 462–471.
- Barton, J., & Simko, P. 2002. The balance sheet as an earnings management constraint. *The Accounting Review*, 77(Supplement): 1–27.
- Baum, J. A., & Oliver, C. 1996. Toward an institutional ecology of organizational founding. *Academy of Management Journal*, 39: 1378–1427.
- Beaver, W., McNichols, M., & Rhie, W. 2005. Have financial statements become less informative?—Evidence from the ability of financial ratios to predict bankruptcy. *Review of Accounting Studies*, 10: 93–122.
- Bergstresser, D., & Philippon, T. 2006. CEO incentives and earnings management. *Journal of Financial Economics*, 80: 511–530.
- Bernstein, L., & Siegel, J. 1979. The concept of earnings quality. *Financial Analysts Journal*, 4: 72–75.
- Bolino, K., Kacmar, M., Turnley, W. H., & Gilstrap, J. B. 2008. A multi-level review of impression management motives and behaviours. *Journal of Management*, 34: 1080–1109.
- Bradshaw, M., & Sloan, R. 2002. GAAP versus the Street: An empirical assessment of two alternative definitions of earnings. *Journal of Accounting Research*, 40: 41–66.
- Brass, D. J., & Burkhardt, M. E. 1993. Potential power and power use: An investigation of structure and behavior. *Academy of Management Journal*, 36: 441–470.
- Brown, S., Hillegeist, S. A., & Lo, K. 2005. *Management forecasts and litigation risk*. Working Paper, Goizueta Business School, Emory University.
- Brun, W., & Teigen, K. H. 1988. Verbal probabilities: ambiguous, context-dependent, or both? *Organizational Behavior and Human Decision Processes*, 41: 390–404.
- Camerer, C., & Lovallo, D. 1999. Over-confidence and excess entry: An experimental approach. *The American Economic Review*, 89: 306–318.
- Carruthers, B., & Espeland, W. 1991. Accounting for rationality: Double-entry bookkeeping and the rhetoric of economic rationality. *American Journal of Sociology*, 97: 31–69.
- Chami, R., Hakura, D., Cosimano, T., & Barajas, A. 2010. U.S. bank behavior in the wake of the 2007–2009 financial crisis. *IMF Working Papers*, 10(131): 1–30.
- Cheng, Q., & Warfield, T. D. 2005. Equity incentives and earnings management. *The Accounting Review*, 80: 441–476.
- Choi, J. H., Myers, L., Zang, X., & Ziebart, D. 2010. The roles that forecasts surprise and forecasts error play in determining management forecasts precision. *Accounting Horizons*, 24: 165–188.
- Cialdini, R. B. 2006. *Influence: The psychology of persuasion*, New York, NY: Harper Business.
- Cohen, D., Dey, A., & Lys, T. 2008. Real and accrual based earnings management in the pre and post Sarbanes Oxley periods. *The Accounting Review*, 83: 757–787.
- Coller, M., & Yohn, T. 1997. Management forecasts and information asymmetry: An examination of bid-ask spreads. *Journal of Accounting Research*, 35: 181–191.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. 1995. Detecting earnings management. *The Accounting Review*, 70: 193–225.
- DeGeorge, F., Patel, J., & Zeckhauser, R. 1999. Earnings management to exceed thresholds. *The Journal of Business*, 72: 1–33.
- Denis, D. J., & Kruse, T. A. 2000. Managerial discipline and corporate restructuring following performance declines. *Journal of Financial Economics*, 55: 391–424.
- Diamond, D. D., & Verrecchia, R. E. 1991. Disclosure, liquidity and the cost of capital. *The Journal of Finance*, 46: 1325–1359.

- Elsbach, K. 2003. Organizational perception management. *Research in Organizational Behavior*, 25: 297–332.
- Elsbach, K. D. 2006. *Organizational perception management*. Mahwah, NJ: Lawrence
- Elsbach, K. D., & Kramer, R. M. 1996. Members' responses to organizational identity threats: Encountering and countering the *Business Week* rankings. *Administrative Science Quarterly*, 41: 442–476.
- Elsbach, K. D., & Sutton, R. I. 1992. Acquiring organizational legitimacy through illegitimate actions: A marriage of institutional and impression management theories. *Academy of Management Journal*, 35: 699–738.
- Elsbach, K. D., Sutton, R. I., & Principe, K. E. 1998. Averting expected challenges through anticipatory impression management: A study of hospital billing. *Organization Science*, 9: 68–86.
- Erev, I., Wallsten, T. S., & Neal, M. M. 1991. Vagueness, ambiguity, and the cost of mutual understanding. *Psychological Science*, 2: 321–324.
- Fama, E. 1991. Efficient capital markets. *The Journal of Finance*, 46: 1575–1617.
- Fama, E., & French, K. 1997. Industry costs of equity. *Journal of Financial Economics*, 43: 153–193.
- Festinger, L. 1962. *A theory of cognitive dissonance*, vol. 2. Stanford, CA: Stanford University Press.
- Field, L., Lowry, M., & Shu, S. 2005. Does disclosure deter or trigger litigation? *Journal of Accounting and Economics*, 39: 487–507.
- Gardner, W. L., & Martinko, M. J. 1988. Impression management in organizations. *Journal of Management*, 14: 321–338.
- Glushkov, D. 2007. *Working with analyst data: Overview and empirical issues*. Working Paper, Wharton Research Data Services.
- Graffin, S. D., Carpenter, M. A., & Boivie, S. 2011. What's all that strategic noise? Anticipatory impression management in CEO succession. *Strategic Management Journal*, 32: 748–770.
- Graffin, S., Haleblan, J., & Kiley, J. T. 2015. Ready, AIM, acquire: Impression offsetting and acquisitions. *Academy of Management Journal*, 59: 232–252.
- Graham, J., Harvey, C., & Rajgopal, S. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40: 3–73.
- Haleblan, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. 2009. Taking stock of what we know about mergers and acquisitions: A review and research agenda. *Journal of Management*, 35: 469–502.
- Hall, M., & Weiss, L. 1967. Firm size and profitability. *The Review of Economics and Statistics*, 49: 319–331.
- Haran, U., Moore, D. A., & Morewedge, C. K. 2010. A simple remedy for overprecision in judgment. *Judgment and Decision Making*, 5: 467–476.
- Hayward, M. L. A., & Hambrick, D. C. 1997. Explaining the premiums paid in large acquisitions: Evidence of CEO hubris. *Administrative Science Quarterly*, 42: 103–127.
- Healy, P. M., & Palepu, K. G. 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31: 405–440.
- Healy, P. M., & Wahlen, J. M. 1999. A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13: 365–383.
- Heckman, J. J. 1979. Sample selection bias as a specification error. *Econometrica*, 47: 153–161.
- Heider, F. 2013. *The psychology of interpersonal relations*. New York, NY: Psychology Press.
- Hines, R. 1989. Financial accounting knowledge, conceptual framework projects and the social construction of the accounting profession. *Accounting, Auditing & Accountability Journal*, 2: 72–92.
- Hirst, D. E., Koonce, L., & Venkataraman, S. 2008. Management earnings forecasts: A review and framework. *Accounting Horizons*, 22: 315–338.
- Hirst, D. E., Koonce, L., & Venkataraman, S. 2007. How disaggregation enhances the credibility of management earnings forecasts? *Journal of Accounting Research*, 45: 1–27.
- Hobson, J. L., Mayew, W. J., & Venkatachalam, M. 2012. Analysing speech to detect financial misreporting. *Journal of Accounting Research*, 50: 349–392.
- Hribar, P., & Yang, H. 2015. CEO overconfidence and management forecasting. *Contemporary Accounting Research*, 33: 204–227.
- Janiszewski, C., & Uy, D. 2008. Anchor precision influences the amount of adjustment. *Psychological Science*, 19: 121–127.
- Jerez-Fernandez, A., Angulo, A. N., & Oppenheimer, D. M. 2014. Show me the numbers precision as a cue to others' confidence. *Psychological Science*, 25: 633–635.
- Kahneman, D. 2011. *Thinking fast and slow*. New York, NY: Farrar, Straus, and Giroux.
- Kaszniak, R., & McNichols, M. 2002. Does meeting earnings expectations matter? Evidence from analyst forecasts revisions and share prices. *Journal of Accounting Research*, 40: 727–759.
- Kipnis, D., & Schmidt, S. M. 1988. Upward-influence styles: Relationship with performance evaluations,

- salary, and stress. *Administrative Science Quarterly*, 33: 528–542.
- Klayman, J., Soll, J. B., González-Vallejo, C., & Barlas, S. 1999. Overconfidence: It depends on how, what, and whom you ask. *Organizational Behavior and Human Decision Processes*, 79: 216–247.
- Lapavitsas, C. 2009. Financialised capitalism: Crisis and financial expropriation. *Historical Materialism*, 17: 114–148.
- Larcker, D. F., & Zakolyukina, A. A. 2012. Detecting deceptive discussions in conference calls. *Journal of Accounting Research*, 50: 495–540.
- Leary, M. R., & Kowalski, R. M. 1990. Impression management: A literature review and two-component model. *Psychological Bulletin*, 107: 34–47.
- Lehn, K. M., & Zhao, M. 2006. CEO turnover after acquisitions: Are bad bidders fired? *The Journal of Finance*, 61: 1759–1811.
- Leuz, C., & Verrechia, R. E. 2000. The economic consequences of increased disclosure. *Journal of Accounting Research*, 38: 91–124.
- Li, J., & Tang, Y. I. 2010. CEO hubris and firm risk taking in China: The moderating role of managerial discretion. *Academy of Management Journal*, 53: 45–68.
- Makridakis, S., Hogarth, R. M., & Gaba, A. 2009. Forecasting and uncertainty in the economic and business world. *International Journal of Forecasting*, 25: 794–812.
- Malmendier, U., & Tate, G. 2005. CEO overconfidence and corporate investment. *The Journal of Finance*, 60: 2661–2700.
- Martin, K. J., & McConnell, J. J. 1991. Corporate performance, corporate takeovers, and management turnover. *The Journal of Finance*, 46: 671–687.
- Mason, M. F., Lee, A. J., Wiley, E. A., & Ames, D. R. 2013. Precise offers are potent anchors: Conciliatory counteroffers and attributions of knowledge in negotiations. *Journal of Experimental Social Psychology*, 49: 759–763.
- Matsumoto, D. A. 2002. Management's incentives to avoid negative earnings surprises. *The Accounting Review*, 77: 483–514.
- Matsunaga, S. R., & Park, C. W. 2001. The effect of missing a quarterly earnings benchmark on the CEO's annual bonus. *The Accounting Review*, 76: 313–332.
- McWilliams, A., & Siegel, D. 1997. Event studies in management research: Theoretical and empirical issues. *Academy of Management Journal*, 40: 626–657.
- Michie, S., Lester, K., Pinto, J., & Marteau, T. M. 2005. Communicating risk information in genetic counseling: An observational study. *Health Education & Behavior*, 32: 589–601.
- Moore, D., & Healy, P. 2008. The trouble with overconfidence. *Psychological Review*, 115: 502–545.
- Motowidlo, S. J., Dunnette, M. D., & Carter, G. W. 1990. An alternative selection procedure: The low-fidelity simulation. *The Journal of Applied Psychology*, 75: 640–647.
- Moyer, R. S., & Landauer, T. K. 1967. Time required for judgments of numerical inequality. *Nature*, 215: 1519–1520.
- Oliver, C. 1991. Strategic responses to institutional processes. *Academy of Management Review*, 16: 145–179.
- Oyer, P. 1998. Fiscal year ends and non-linear incentive contracts: The effect on business seasonality. *The Quarterly Journal of Economics*, 113: 149–185.
- Parkman, J. M. 1971. Temporal aspects of digit and letter inequality judgments. *Journal of Experimental Psychology*, 91: 191–205.
- Petersen, M. A. 2009. Estimating standard errors in finance panel data sets: comparing approaches. *Review of Financial Studies*, 22: 435–480.
- Pfeffer, J., & Salancik, G. R. 1978. *The external control of organizations: A resource dependence perspective*. New York, NY: Harper & Row.
- Porac, J. F., Wade, J. B., & Pollock, T. G. 1999. Industry categories and the politics of the comparable firm in CEO compensation. *Administrative Science Quarterly*, 44: 112–144.
- Pratt, M. G., & Foreman, P. O. 2000. Classifying managerial responses to multiple organizational identities. *Academy of Management Review*, 25: 18–42.
- Quinn, J. B. 1978. Strategic change: Logical incrementalism. *Sloan Management Review*, 20: 7–19.
- Raju, J. S., & Roy, A. 2000. Market information and firm performance. *Management Science*, 46: 1075–1084.
- Rogers, W. 1993. Regression standard errors in clustered samples. *Stata Technical Bulletin*, 13: 19–23.
- Rogers, J. L., & Stocken, P. C. 2005. Credibility of management forecasts. *The Accounting Review*, 80: 1233–1260.
- Roychowdhury, S. 2006. Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42: 335–370.
- Salancik, G. R., & Meindl, J. R. 1984. Corporate attributions as strategic illusions of management control. *Administrative Science Quarterly*, 29: 238–254.
- Schlenker, B. R. 1980. *Impression management: The self concept, social identity, and interpersonal relations*. Pacific Grove, CA: Brooks/Cole Publishing Company.
- Soll, J. B., & Klayman, J. 2004. Overconfidence in interval estimates. *Journal of Experimental Psychology. Learning, Memory, and Cognition*, 30: 299–340.

- Staw, B. M., McKechnie, P. I., & Puffer, S. M. 1983. The justification of organizational performance. *Administrative Science Quarterly*, 28: 582–600.
- Sutton, R. I., & Staw, B. M. 1995. What theory is not. *Administrative Science Quarterly*, 40: 371–384.
- Teigen, K. H. 1990. To be convincing or to be right: A question of preciseness. In K. Gilhooly, M. Keane, R. Logie & G. Erdos (Eds.), *Lines of thinking: Reflections on the physiology of thought*: 299–313. Chichester, UK: John Wiley.
- Tetlock, P. E. 1985. Accountability: The neglected social context of judgment and choice. *Research in Organizational Behavior*, 7: 297–332.
- Tetlock, P. E., & Manstead, A. S. 1985. Impression management versus intrapsychic explanations in social psychology: A useful dichotomy? *Psychological Review*, 92: 59–73.
- Thomas, M., Simon, D. H., & Kadiyali, V. 2010. The price precision effect: Evidence from laboratory and market data. *Marketing Science*, 29: 175–190.
- Thompson, S. B. 2011. Simple formulas for standard errors that cluster by both firm and time. *Journal of Financial Economics*, 99: 1–10.
- Verrecchia, R. E. 2001. Essays on disclosure. *Journal of Accounting and Economics*, 32: 97–180.
- Villalonga, B., & Amit, R. 2006. How do family ownership, control and management affect firm value? *Journal of Financial Economics*, 80: 385–417.
- Weick, K. E. 1979. *The social psychology of organizing (topics in social psychology series)* (2nd ed.). Boston, MA: Addison-Wesley Longman.
- Welsh, M., Navarro, D., & Begg, S. 2011. Number preference, precision and implicit confidence. *Paper presented at the Annual Meeting of the Cognitive Science Society*, Boston, MA.
- Westphal, J. D. 1998. Board games: How CEOs adapt to increases in structural board independence from management. *Administrative Science Quarterly*, 43: 511–537.
- Westphal, J. D. 2010. An impression management perspective on job design: The case of corporate directors. *Journal of Organizational Behavior*, 31: 319–327.
- Westphal, J. D., & Bednar, M. K. 2008. The pacification of institutional investors. *Administrative Science Quarterly*, 53: 29–72.
- Westphal, J., & Deephouse, D. 2011. Avoiding bad press: Interpersonal influence in relations between CEOs and journalists and the consequences for press reporting about firms and their leadership. *Organization Science*, 22: 1061–1086.
- Westphal, J. D., & Graebner, M. E. 2010. A matter of appearances: How corporate leaders manage the impressions of financial analysts about the conduct of their boards. *Academy of Management Journal*, 53: 15–44.
- Westphal, J. D., Park, S. H., McDonald, M. L., & Hayward, M. L. 2012. Helping other CEOs avoid bad press social exchange and impression management support among CEOs in communications with journalists. *Administrative Science Quarterly*, 57: 217–268.
- Westphal, J. D., & Zajac, E. J. 1998. The symbolic management of stockholders: Corporate governance reforms and shareholder reactions. *Administrative Science Quarterly*, 43: 127–153.
- Williams, R. A. 2000. Note on robust variance estimation for cluster-correlated data. *Biometrics*, 56: 645–646.
- Winship, C., & Mare, R. D. 1992. Models for sample selection bias. *Annual Review of Sociology*, 18: 327–350.
- Wooldridge, J. M. 2010. *Econometric analysis of cross section and panel data*. Cambridge, MA: The MIT Press.
- Yaniv, I., & Foster, D. 1995. Graininess of judgment under uncertainty: An accuracy–informativeness trade-off. *Journal of Experimental Psychology*, 124: 424–432.
- Yaniv, I., & Foster, D. 1997. Precision and accuracy of judgmental estimation. *Journal of Behavioral Decision Making*, 10: 21–32.
- Yukl, G., & Tracey, J. B. 1992. Consequences of influence tactics used with subordinates, peers, and the boss. *Journal of Applied Psychology*, 77: 525–535.



Mathew L. A. Hayward (Mathew.Hayward@Monash.edu) is professor of strategy in the Department of Management of Monash Business School. He received his PhD from Columbia University's Graduate School of Business. His research interests include the role of managerial cognitive processes and hubris in strategic decisions; the role of organizational vulnerability in eliciting strategic action; and determinants of the performance of M&As.

Markus A. Fitza (m.fitza@fs.de) is an associate professor of strategy and entrepreneurship at the Frankfurt School of Finance & Management as well as a conjoint Professor at the University of Newcastle (Australia). He received his PhD in strategy and entrepreneurship from the University of Colorado at Boulder. His research interests include corporate governance and top executives, the origins of firm performance, as well as innovation and entrepreneurship.



Copyright of Academy of Management Journal is the property of Academy of Management and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.