4-2012

Guidance Frequency and Guidance Properties: The Effect of Reputation-Building and Learning-by-Doing

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April 2012

[*] An earlier version of this paper was circulated under the title "Analyzing guidance at the firm level: The effect of reputation-building and learning-by-doing on guidance frequency and guidance properties." We gratefully acknowledge the insightful comments and suggestions made by Julia D'Souza, Amy Hutton, Craig Nichols, Doug Skinner, Shankar Venkataraman, Robert Verrecchia, Nir Yehuda, Vic Anand, Tim Brown, Young-Jun Cho, Scott Asay, and seminar participants at Cornell University, MIT, Tilburg University Fall Camp, and the University of Minnesota Empirical Accounting Conference. We thank James Traina for providing excellent research existence.

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Abstract:

Different firms issue earnings guidance at dramatically different rates. We suggest that frequent guiders more likely represent a type of firm that is attempting to develop a reputation for enhanced disclosures through their guidance issuances. Furthermore, the desire to build a reputation and the opportunities to learn provided by issuing more frequent guidance should translate into frequent guiders providing higher quality guidance than occasional guiders. We examine our hypotheses in three stages. First, we find that guidance frequency is positively correlated with variables associated with reputation with capital market participants and reputation in product and labor markets. Second, our cross-sectional analysis shows that frequent guiders provide guidance that is more accurate and specific, timelier, and less optimistically biased. Third, controlling for overall time trends, we find that firms display improvements over time in their guidance properties. Overall, our results are consistent with the reputation-building and learning-by-doing arguments.

Key Words: Voluntary Disclosure, Earnings Guidance, Management Forecasts, Guidance Frequency, Disclosure Reputation, Learning

I. Introduction

Prior research has examined several aspects of earnings guidance including factors that influence the propensity to issue guidance, properties of the guidance issued, analysts' and market responses to guidance, and reasons why firms stop issuing guidance.[1] Little is known, however, about the extent to which a firm's guidance frequency is related to the properties of the guidance issued. In this paper, we argue that guidance frequency is an important variable for two reasons: reputation-building and learning-by-doing. We suggest that frequent guiders are more likely to represent a type of firm that is attempting to develop a reputation for enhanced disclosures through their guidance issuances. Consistent with this view, 92% of surveyed CFOs state that developing a reputation for transparent reporting is the key factor motivating voluntary disclosures (Graham, Harvey, and Rajgopal 2005). As a consequence of the desire to build a reputation, frequent guiders are likely to expend greater time and resources on the guidance effort, which in turn will affect the properties of the guidance.[2] In addition, frequent guiders enjoy the benefits of learning-by-doing, and therefore are likely to have forecast properties that are different from occasional guiders, and their guidance properties are also likely to evolve over time. Classifying based on guidance frequency also furthers our understanding of the conflicting results documented in prior studies on whether firms guide to disclose good news or bad news.

[1] We define earnings guidance as all management earnings forecasts issued after the start of and before the end of a fiscal quarter. See Hirst, Koonce, and Venkataraman (2008) for a recent review of the literature on management earnings forecasts.

[2] The choice of firm type (frequent vs. occasional) is influenced by several factors including the manager's ability to generate high quality guidance and the cost of developing processes to provide guidance (which are affected by the size of the firm, volatility of earnings, etc.). These factors are discussed in more detail in section 2.

Reputation is the outcome of a competitive process in which firms signal their key characteristics to different constituents to maximize their social status (Spence 1974). These constituents include current stakeholders (i.e. customers, employees, investors, suppliers) and other players such as analysts, regulators, and the media (Fombrun and Shanley 1990).[3] While a firm's reputation is multi-dimensional, reputation in our setting is disclosure transparency by issuing guidance. Prior research shows that establishing a guidance reputation enhances management credibility, which allows guidance news to be more quickly impounded into analysts' stock revisions and stock prices (Williams 1996; Hutton and Stocken 2009). Firms with more transparent disclosures also attract greater analyst coverage and institutional ownership (Lang and Lundholm 1996; Bushee and Noe 2000). However, despite the benefits, reputation-building and maintenance can be costly (Wilson 1985). Survey evidence suggests that firms desirous of building a reputation for transparency are likely to expend greater resources (primarily in the form of managerial and employee time and effort) on the guidance process (McKinsey 2006). In addition to investing in reputation-building, firms are also likely to benefit from repetition and feedback from providing guidance. Prior research shows that learning occurs through the experience of performing a task when the frequency and immediacy of feedback are high (Arrow 1962; Huber 1991; Zollo and Winter 2002). Both the reputation-building and learning factors should translate into frequent guiders issuing guidance with properties

[3] Reputation is an important concept that has been studied extensively in several streams of literature. Early economic theories define reputation as the updated assessment of a player's signal or trait (Kreps and Wilson 1982; Milgrom and Roberts 1982; Wilson 1985; Diamond 1989). In marketing, reputation is used interchangeably with image, identity, and brand (Fombrun and Van Riel 1997). In management, reputation is rooted in the sense-making of employees and the firm's self-image affects how it interacts with external stakeholders to establish an overall corporate reputation (Lange, Lee, and Dai 2010).

that are systematically different from those issued by occasional guiders who do not have the opportunity to practice and learn.

We test our theory in three stages. We first validate guidance frequency as a proxy for a desire to build a reputation for reporting transparency by testing whether it is correlated with variables associated with reputation with capital market participants and indicators of a firm's overall concern for public reputation that have been studied in research on product and labor markets (Fornell, Johnson, Anderson, Cha, and Bryant 1996; Lang and Lundholm 1996; Ajinkya, Bhojraj, and Sengupta 2005; Feng, Li, and McVay 2009; Edmans 2011). The results from this analysis suggest that guidance frequency is associated with greater institutional ownership, greater analyst following, lower analyst dispersion, and a lower likelihood of reporting internal control weaknesses. Frequent guiders also score higher on the American Customer Satisfaction Index (ACSI) and are more likely to be on Fortune's list of "100 Best Companies to Work For." This suggests that frequent guidance is part of a strategy aimed at reputation-building.

We then analyze the association between guidance frequency and guidance properties and provide results that are consistent with the reputation and learning arguments. We find that firms that guide more frequently provide guidance earlier in the period, with lower error, less optimistic bias, and more specificity than occasional guiders.[4] We also examine whether reputation-building affects firms' propensity to disclose good and bad news. Prior work suggests that firms often disclose bad news to prevent litigation (Skinner 1994). However, frequent guiders, motivated by the desire to

[4] We define precision as the range-width of guidance and specificity as an ordinal variable that gives the highest value to the most specific guidance form. Point, range, open-ended, and qualitative guidance issuances are coded as 4, 3, 2, and 1, respectively.

build or maintain a reputation for transparency are likely not to limit themselves to disclosures aimed at reducing litigation but also focus on trying to better inform capital markets. We find that frequent guiders are more likely to issue both good and bad news guidance compared to occasional guiders who are significantly more likely to disclose only bad news. However, the ratio of good to bad news issuances for frequent guiders suggests that these firms are still more likely to disclose bad news than good news. These results are robust to a two-stage least squares analysis that controls for various firm characteristics correlated with guidance properties.

The discussion so far has focused on what can be determined by comparing frequent guiders to occasional guiders. While both the reputation and learning arguments suggest that guidance properties should differ for frequent and occasional guiders, only the learning hypothesis suggests that guidance properties should improve over time with experience.[5] Therefore, we also conduct within-firm time-series analyses to examine whether learning occurs over time as guidance experience increases. Consistent with the effect of learning, we find that firms' guidance issuances become more accurate, less optimistically biased, more specific, and more timely using a traditional Heckman two-stage selection model that controls for the propensity to issue guidance. The results of this analysis support the idea that the guidance properties of frequent guiders are attributable in part to learning over time.

Our paper contributes to the literature in the following ways. First, we provide evidence that the desire to build a reputation for transparent disclosure is one aspect of a

[5] The reputation hypothesis argues that frequent guiders will provide guidance with different properties than occasional guiders to build a favorable reputation, but does not imply that their guidance properties will improve over time compared with their own past guidance issuances.

firm's overall strategy to build a favorable reputation with its different constituents. Guidance frequency, our proxy for reputation-building through guidance, is positively associated with customer and employee satisfaction, analysts' information environments, and institutional ownership, and negatively associated with internal control weaknesses. Second, we examine whether the properties of guidance vary based on whether a firm reveals a preference towards developing a reputation for greater disclosure through frequent guidance.[6] Therefore, we complement contemporaneous work by Hutton and Stocken (2009) which provides evidence that the investor reaction to guidance news is affected by the accuracy and frequency of recent prior guidance. While their study provides evidence of the benefits of having a guidance reputation, we complement their study by showing the process through which firms attempt to build such a reputation, which is by issuing more accurate, specific, timely, and less optimistically biased guidance. Third, we argue that in addition to reputation-building, repetition and learning-by-doing are important factors that affect guidance properties. We find that firms' guidance properties evolve over time. This result supports practitioners' claims that forecasting is a rolling process which organizations must constantly adapt to and learn from (Hope 2006) as well as theoretical work on the determinants of organizational learning. Lastly, using the reputation-building and learning arguments and focusing on guidance properties allows us to reconcile conflicting results in past work on whether firms guide to disclose good news or bad news. For example, early work on guidance

[6] In their review of the literature on management forecasts, Hirst et al. (2008) highlight the lack of research on the determinants of firms' guidance choices. They also argue that more multi-period studies on management guidance will further our understanding of firms' guidance choices since the outcome of guidance issuance in the current period becomes the antecedent for subsequent periods.

found that firms are more likely to issue good news guidance (e.g. Patell 1976; Penman 1980; Lev and Penman 1990) while more recent work has documented a greater likelihood of guidance in the face of bad news (e.g., Francis, Philbrick, and Schipper 1994; Skinner 1994; Kasznik and Lev 1995; Skinner 1997). Our results show that, compared to occasional guiders, frequent guiders are more likely to issue good news guidance. However, the likelihood of bad news (to good news) issuances is still higher for both frequent and occasional guiders, consistent with litigation concerns contributing to decisions by both groups.

The rest of the paper is organized as follows. Section two discusses the background literature and develops the empirical predictions. Section three describes the data and sample selection. Section four defines the variables and provides results of the association tests between guidance frequency and measures of reputation while section five provides the results of the association tests between guidance frequency and guidance properties. Section six examines whether firms exhibit learning in the properties of the guidance issued and section seven summarizes the paper.

2. Prior Research and Empirical Predictions

2.1 Guidance Frequency and Disclosure Reputation

We suggest that frequent guiders, through their revealed preference for issuing guidance, represent a class of firms that seeks to build a reputation for enhanced disclosure.[7] Research and anecdotal evidence suggest that building a reputation for enhanced disclosure is beneficial to a firm. Hutton and Stocken (2009) provide evidence

[7] The concept of reputation-building is different from commitment. Wilson (1985) suggests that a key ingredient of reputation is an inability to commit in advance to a strategy. Each period players optimize their strategy over the rest of the periods based on the reputation built until that period.

that the investor reaction to guidance news is affected by the accuracy and frequency of recent prior guidance. Firms with more transparent disclosures also attract greater analyst following and institutional investors (Lang and Lundholm 1996; Bushee and Noe 2000; Ajinkya et al. 2005). In addition, establishing such a reputation could result in reduced information asymmetries with capital market participants and lower forecast dispersion among analysts (King, Pownall, and Waymire 1990). Similarly, a McKinsey (2006) survey found that perceived benefits of providing guidance include maintaining a channel of communication with investors, intensifying management's focus on achieving financial targets, moderating volatility, achieving higher valuations, building a wider shareholder base, and increasing liquidity.[8] As a consequence, we expect an association between guidance frequency and related measures of capital market benefits that have been used in prior literature to determine individual guidance issuances (Ajinkya et al. 2005).

However, building and maintaining a reputation is a costly process which is presumably justified by the long-term benefits that accrue from the reputation. The costs can vary depending on the attribute over which reputation is being built. One example involves underpricing high quality products (Shapiro 1983) and investing in advertising and marketing expenditures (Milgrom and Roberts 1986) to build a reputation for product quality. Other settings include different costs involved in building a reputation for being a good employer, or even overall corporate reputation.[9]

[8] https://www.mckinseyquarterly.com/Corporate_Finance/Performance/Weighing_the_pros_and_cons_of_earnings_guidance__A_McKinsey_Survey_1752?pagenum=3#Exhibit3

[9] The process of building corporate reputations is tedious and time-consuming. Jack and Suzy Welch in their BusinessWeek column: the Welch Way state "[t]hat's just the way it is with corporate reputations. They're built annual report by annual report, career by career, crisis by crisis (because every company has

Prior literature has recognized the existence of proprietary costs to additional voluntary disclosures (Bamber and Cheon 1998). In the case of reputation for transparency through frequent guidance issuance, additional costs incurred include management and employee time allocated to the process of generating and conveying the guidance and the costs of improved information systems necessary to support effective forecasting. The same McKinsey (2006) survey of executives (mostly consisting of regular guiders) found that that over three-quarters of the executives stated that management time allocated to the guidance process was a significant cost (with over half responding that it was very time consuming). While some might believe that the internal forecast generation process is similar across firms and therefore all firms have the same information to disclose, the data suggests otherwise. The McKinsey (2006) survey suggests that there is cross-sectional variation in the amount that firms spend on their information systems to generate forecasts and the forecasting approach taken.[10] Overall, firms seem quite different in their approach and commitment to generating forecasts. Furthermore, many forecasts designed for internal use do not include all elements necessary to forecast net earnings. Particularly important among these are many of the accruals and deferrals recorded at the end of the period. This suggests that firms must make additional investments in time and systems beyond that necessary for internal forecasting in order to regularly issue early, precise, and accurate forecasts.

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one or two of them), and recovery by recovery."
http://www.businessweek.com/mediacenter/podcasts/welchway/welchway_09_04_06.htm?chan=search

[10] Hope (2006) discusses alternative approaches to generating forecasts and makes the case for why firms should adopt a rolling approach. He also discusses Proctor and Gamble's 'stretch' forecast approach as well as Tomkins' "flash" forecasts and American Express' use of rolling forecasts. He points to Borealis's post-mortems of forecasts to learn from the errors and how to improve them.

While the costs discussed above are also likely to vary by firm, they are difficult to measure. We include traditional measures of proprietary costs in our analysis. As a rough measure of investments of management effort and costs of information system development, we suggest that firms making greater investments should have fewer material weaknesses in controls over financial reporting. These investments in the firm's information environment are also likely to result in better mandatory disclosure quality such as a lower likelihood of earnings restatements and greater compliance with SEC reporting requirements, both of which are also likely to affect a firm's reputation with capital markets participants.[11] We also include these variables in our analysis.

While there are other variables that could explain variation in reputation building efforts (e.g., corporate culture, accidental or historical reasons, management philosophy, etc.), these are even more difficult to directly measure. However, if reputation-building via disclosure transparency is part of a strategy to build overall corporate reputations, then firms that provide frequent guidance are likely to be concerned about their reputation in labor and product markets (Lange et al. 2010). Therefore, we use measures of labor and product market reputation to capture other cross-sectional differences in determinants of guidance strategy choice, and examine whether guidance frequency is associated with indicators for a firm's reputation with its employees and customers, as well as capital markets participants.

Based on the discussion above, the decision to build a reputation for transparency is determined by both the benefits and costs of providing guidance. However, prior research suggests that the relation between the determinants of reputation-building and

[11] Consistent with this view, prior research suggests that there is an association between internal control quality and reported earnings (Doyle, Ge, and McVay 2007a, 2007b).

firms' disclosure choices is likely to be endogenous. For example, while one of the benefits of increased disclosure is increased analyst following and institutional ownership, one can also argue that firms increase disclosure due to demands from these information intermediaries. Since a complete structural model based on the costs and benefits associated with disclosure choice has not been developed in the literature, it is difficult empirically to identify *why* firms desire to build a reputation for transparency. Similarly, while reputation concerns with employees and customers are unlikely to directly affect firms' disclosure choices, they are likely to be associated with the desire to build an overall corporate reputation. To summarize, if frequent guidance is a revealed preference for transparent disclosure, it should be correlated with variables associated with reputation with capital market participants and reputation in labor and consumer markets. Therefore, our first hypothesis is stated as follows:

H1: Disclosure frequency is positively correlated with variables associated with reputation with capital market participants and indicators of reputation with its employees and customers.

We also expect these reputation variables to be closely related to the disclosure issuance decision in each period. As a consequence, in addition to our reputation variables, we also include established determinants of individual forecast issuances studied in prior work in our analysis. We discuss these in more detail in section 4.1.

2.2 Guidance Frequency and Cross-Sectional Differences in Guidance Properties

The prior section argues that frequent guiders are different from occasional guiders because of their desire to build a reputation for transparency. The desire to build a reputation should influence guidance properties because firms that are likely to issue

regular guidance have a greater incentive to expend effort and invest resources in the guidance issuance process to achieve reputational benefits, and to protect their reputation once it is established. These firms are also more likely to incorporate and benefit from feedback they receive from markets on the guidance issued. As a consequence, the guidance properties of frequent guiders are likely to be different from those of occasional guiders.

Prior work indicates that investors and analysts respond more to accurate guidance as well as guidance with a tighter range (Hutton and Stocken 2009; Libby, Tan, and Hunton 2006). These studies show that firms with a more favorable guidance reputation experience a stronger reaction to their guidance issuances (Williams 1996; Hutton and Stocken 2009). In addition to the effects of issuing more accurate and specific guidance, a more timely disclosure allows the manager's private information to be more quickly incorporated into prices and consequently reduces information asymmetries (King et al. 1990). Therefore, we suggest that timelier guidance (without sacrificing guidance accuracy) would be preferred. Given that frequent guiders desiring to build a reputation for transparency are likely to commit more resources to the guidance process and have the opportunity to learn from past guidance issuances, we expect these guiders to issue more accurate, specific, and timely guidance.

H2: Compared to occasional guiders, frequent guiders issue more accurate and specific guidance, and issue that guidance earlier in the period.

Prior work has also found that firms enjoy a premium for beating earnings forecasts (Bartov, Givoly and Hayn 2002; Kasznik and McNichols 2002; Bhojraj, Hribar, McInnis, and Picconi 2009), that analysts' forecasts follow an optimistic-pessimistic

pattern over time (Richardson, Teoh, and Wysocki 2004; Ke and Yu 2006; and Libby, Hunton, Tan, and Seybert 2008), and that bias in short-term management guidance contributes to this pattern (Baik and Jiang 2006; Cotter, Tuna, and Wysocki 2006). These streams of work suggest that a pessimistic bias in short-term management guidance is desirable and advantageous. Despite these findings, prior work using a similar sample period shows that management guidance is on average optimistic (Bamber, Jiang, and Wang 2010), suggesting a natural tendency to be optimistic. The reputation-building argument would suggest that frequent guiders would be more likely to temper this observed average optimism. Frequent guiders are therefore likely to generate less optimistically biased guidance. The above discussion leads to our third hypothesis:

H3: Compared to occasional guiders, frequent guiders issue less optimistic guidance.

When deciding to issue guidance, frequent guiders, trying to build a reputation for transparency, are less likely to be constrained by the nature of news being disclosed. Skinner (1994) and Kasznik and Lev (1995) argue that one reason a firm issues guidance is the preemptive dissemination of bad news, thereby fending off potential litigation. Under this scenario firms are more likely to communicate bad news through guidance issuances. In this setting, non-disclosure is likely to be interpreted as good news, though there is still uncertainty about the extent of good news, which the markets have to infer. But firms that are trying to build a reputation for transparency are likely not to limit themselves to disclosures aimed at reducing litigation but also focus on trying to better inform capital markets. Consistent with this argument, surveyed managers indicate that they will not initiate voluntary disclosures that are difficult to maintain in the future,

because the market expects firms to commit to the disclosure precedent (Graham et al. 2005). Therefore, as a consequence of the desire to enhance their reputation for transparent reporting, frequent guiders are less likely to limit themselves to bad news guidance as compared with occasional guiders.[12] This leads to our fourth hypothesis:

H4: Compared to occasional guiders, frequent guiders issue a greater proportion of guidance announcing good news.

2.3 Learning and Improvement in Guidance over Time

We also argue that frequent guiders are likely to be different from occasional guiders due to the benefits of learning from their history of guidance. Research in economics (Arrow 1962), psychology (Einhorn and Hogarth 1978), and management (Huber 1991; Zollo and Winter 2002) finds that individuals and organizations learn through experience when frequency and immediacy of feedback are high. Moreover, the learning-by-doing (LBD) model argues that the effort involved in executing a task is decreasing in cumulative experience. Mikhail, Walther, and Willis (1997) incorporate assumptions of the Learning-by-Doing model to show that analysts' forecast accuracy improves with experience. Measures to improve the guidance process include (but are not limited to): hiring new talent with better experience, adopting new forecasting models, and carrying out periodic reviews (Hope 2006). Hope (2006) summarizes this argument succinctly when he states:

[12] Early theories on discretionary disclosure suggested that firms will only disclose good news above a certain threshold (Verrecchia 1983; Dye 1985). A pooling mechanism enables managers to withhold news below the threshold because investors are uncertain about the managers' information endowment and the proprietary costs of disclosure. In this setting, non-disclosure is likely to be interpreted as bad news. While more recent works suggests a predilection to issuing bad news forecasts, if this argument holds true we would expect occasional guiders to focus on good news forecasts and frequent guiders to not limit themselves to good news forecasts. Our evidence, discussed later, is consistent with the litigation hypothesis.

"Indeed, the only certainty about a forecast is that it will be wrong. The question is by how much. Narrowing that variation comes from learning, experience, decent information systems, and ultimately, judgment. The more practice managers have at preparing short term forecasts, the better they will become."

While both the reputation and learning hypotheses suggest that frequent guiders should have different guidance properties from the occasional guiders, only the learning hypothesis, which is by nature a dynamic concept, implies that firms' guidance properties should improve over time with experience. Consistent with this view, prior research in strategic management and organizational studies argues that organizational learning generally results in positive consequences for firms (Levitt and March 1988; Teece, Pisano, and Shuen 1997). On the other hand, reputational considerations alone could lead to cross-sectional differences in firms' guidance properties that are consistent with frequent guiders issuing higher quality guidance, but does not suggest that guidance properties should also evolve over time for firms that routinely provide guidance. Therefore, we also conduct within-firm time series analyses to examine whether the act of issuing guidance provides learning benefits beyond the reputation effect. Using each firm's prior guidance as its own comparison, we conjecture that guidance is likely to become more accurate, specific, timely, and less optimistic as guidance experience increases. This leads to our final hypothesis:

H5: Firms' guidance issuances will become more accurate, specific, timely, and less optimistic over time.

3. Sample Selection

We begin with a sample of quarterly earnings forecasts in the First Call Company Issued Guidelines (CIG) file. The CIG file includes both quarterly and annual forecasts but we limit our sample to quarterly EPS guidance because feedback is more immediate in this setting. We identify each estimate as point, range, or open-ended following the guidelines in Anilowski, Feng, and Skinner (2007). We include only forecasts issued during the period from 1995 to 2005 and further restrict our observations to the first guidance issued if a firm guides more than once for a given quarter.[13] After deleting all guidance revisions and earnings preannouncements, we merge the CIG file with Compustat and only retain firms with available data on Compustat and firms that are in existence (on Compustat) the entire period from the end of fiscal years 1995 to 2005. This requirement eliminates the possibility that our findings are attributable to a survival bias where poor performers are subsequently dropped out of our sample in later periods and therefore appear as occasional guiders.[14] We then measure firms' guidance frequency percentage (*Frequency*) by calculating the number of quarters in which a firm has issued quarterly guidance, divided by the number of quarters since their first guidance issuance to the end of our sample period. For example, if a firm issued guidance ten times since it first issued guidance in the first quarter of 2001, then their *Frequency* ratio would be 0.5. This results in a sample of 1,750 firms.

[13] We do not consider revisions in our sample as we are interested in the number of "quarters" rather than the number of "times" a firm guides during 1995-2005. Our results are also similar when we use the last guidance issued each quarter.

[14] A recent study by Chuk, Matsumoto, and Miller (2009) finds that the CIG file may be incomplete. We examine the robustness of our results to alternative sample selection specifications. For example, we also conducted our analyses using the entire sample on the CIG file as well a restricted sample conditional on the firm issuing at least three forecasts in the past. The results using these alternative specifications are similar to those described in the main results.

We also collect data from CRSP (returns data), IBES (analyst variables), Thomson (institutional ownership data), Audit Analytics (data on restatements and SEC comment letters), ACSI (customer satisfaction variable), Fortune (employee satisfaction variable), and data on internal control weaknesses. Of the 1,750 firms in our sample, 1,501 firms have complete analyst and institutional ownership data, and is the main sample used in most of our analyses.

Table 1 provides the number of management forecasts in our sample by sequence and year. The minimum (maximum) guidance frequency is 1 (32). 141 firms issued their first forecast in 1995 compared with 11 firms in 2005. The last row provides the total number of forecasts issued per year.

[Insert Table 1]

4. Variable Definitions and Descriptive Statistics

4.1 Measures of Reputation-building

We describe below the variables we use to examine our first hypothesis that guidance frequency is correlated with indicators of a firm's reputation with its employees and customers, and variables associated with reputation with capital market participants.

Employee Satisfaction (*BestCompanies*): Our proxy for firm reputation with employees is from Fortune's list of "100 Best Companies to Work for in America (hereafter Best Companies)." The data begins in 1998 and is published in the first issue of Fortune magazine each year. The list is compiled from both employee responses to a 57-question survey and annual evaluations conducted by the Great Place to Work Institute in San Francisco. Factors that are considered include company demographics, employee benefits, culture, attitudes towards management, job satisfaction, and camaraderie. Fortune

magazine has no involvement in the selection decision and firms must apply to be considered on the list.[15] *BestCompanies* is the number of years a firm is on the list during our sample period.[16]

Customer Satisfaction (*ACSI*): Following prior studies on customer satisfaction (Fornell et al. 1996; Fornell, Mithas, Morgeson, and Krishnan 2006), we use data from the American Customer Satisfaction Index (ACSI) to proxy for a firm's reputation with its customers. The ACSI covers more than 200 companies and 45 industries each year, and the scores range from 0 to 100. Firms are selected based on total sales and represent a significant market share of the industry. The index adjusts the companies and industries covered based on changes in a firm's market share and overall economy trends. The scores are calculated based on customer interviewing and econometric modeling. If a firm in our sample is not covered by the index, then we assume the industry score.[17]

Internal Information Systems (*MW*): Firms that desire to build a reputation for providing quality forecasts are likely to invest more in their information systems, which should lead to better internal controls. Feng et al. (2009) find that firms with internal control weaknesses provide guidance with greater error because management relies on poor-quality inputs to generate forecasts. We merge data on material weakness disclosures

[15] Edmans (2011) examines the relation between employee satisfaction and long-run stock returns using the Best Companies list and finds that employee satisfaction is positively associated with long-run stock returns. See Edmans (2011) for further details about the list.

[16] Since Fortune.com only provides rankings for the last five years, we download the list from FACTIVA and manually match them with our sample firms based on TICKER. In untabulated results, we also use an indicator variable where *BestCompanies* equals 1 if the firm is on the list once during the sample period (zero otherwise) and find similar results.

[17] We download ACSI scores from their website and manually match them with our sample firms based on TICKER (http://www.theacsi.org/index.php?option=com_content&view=article&id=12&Itemid=110.) In addition, because *ACSI* covers mainly business-to-consumer industries and services, we assign a value of zero for firms in industries that are not covered by *ACSI*. Moreover, the inferences of our results remain when we exclude *ACSI* from our analyses.

under Sections 302 and 404 from Doyle et al. (2007a, 2007b) with our sample firms and code firms that report at least one material weakness disclosure during 2002 to 2005 as *MW* equal to one, zero otherwise.[18]

Reporting Quality (*Comments* and *Restatements*): Investments in information systems are also likely to result in better financial reporting quality, which should lead to a lower likelihood of receiving SEC comment letters and earnings restatements, both of which are likely to affect a firm's reputation with capital market participants. The goal of SEC comment letters is to improve the quality of material disclosures to investors and whether or not a company receives a letter is likely a strong signal of its reporting quality (Chen and Johnston 2010). We merge in data on comment letters from Audit Analytics using the CIK code and identify firms that receive at least one letter as *Comments* equal to one, zero otherwise. Since SEC only releases comments with filing dates after August 2004, we complement this measure with restatement data from Audit Analytics. *Restatements* is the number of filings during 1995 to 2005. Hennes, Leone, and Miller (2008) maintain that it is important to distinguish between restatements due to intentional irregularities and unintentional errors. They also show that restatements due to errors do not result in a significant negative market reaction during the 15-day announcement window. Therefore, we exclude filings due to errors, reclassifications, leases (SFAS 5), and derivatives (SFAS 133) because these filings are less likely to affect a firm's financial reporting reputation.

[18]We use CUSIP to merge in internal control data (http://faculty.washington.edu/geweili/ICdata.html). As mentioned in Doyle et al. (2007a, 2007b), material weaknesses in internal control have only been disclosed widely in SEC filings since August 2002.

Because each of the variables above is associated with a firm's overall reputation, we compute a reputation score for each firm using the variables discussed above. This also increases the power of our analysis because each measure by itself covers a small group of companies. *RepScore1* is the sum of *BestCompanies* and an indicator variable equal to one if *ACSI* is greater than the industry average, minus *MW*, *Comments*, and *Restatements*. For robustness, we also compute *RepScore2* which is similar to *RepScore1* but excludes *MW*.

Moreover, we also examine established determinants of firms' disclosure decisions, which we also expect to affect the desire to build a reputation via guidance.

Institutional Ownership (*Inst*): Firms' incentives to build a reputation are likely to be affected by the degree of institutional ownership as institutional investors prefer firms with greater disclosure transparency. Ajinkya et al. (2005) examine the effect of institutional ownership on management guidance and find that firms with larger institutional ownership issue guidance more frequently. Therefore, we also control for institutional ownership (*Inst*) using the Thomson 13F file where institutional ownership is the percentage of common shares held by institutional owners in quarter t. We take the average of *Inst* across 44 quarters for our firm-level regressions.

Analysts' Information Environment (*Num and Disp*): We include the number of analysts following (*Num*) and the dispersion in analysts' consensus forecasts (*Disp*) because we expect firms with reputational incentives to have higher analyst following and lower analyst dispersion (Ajinkya and Gift 1984; Lang and Lundholm 1996). *Num* and *Disp* are measured prior to guidance issuance (at the end of the quarter) for guidance (non-

guidance) quarters, as reported on IBES. We take the average of *Num* and *Disp* across 44 quarters for our firm-level regressions.

Proprietary Costs (*M/B*): The costs of developing a reputation for disclosure transparency are likely to increase with proprietary costs. Therefore, we follow Bamber and Cheon (1998) and include market to book (*M/B*) as a proxy for proprietary costs.

Size (*Size*): We proxy for size using the natural log of the market value of firm equity because prior studies find a positive association between firm size and firms' disclosure decisions (Lang and Lundholm 1996; Ajinkya et al. 2005).

4.2 Measures of Guidance Properties

We examine the association between guidance frequency and several guidance properties including error, bias, specificity, and horizon. *Error* is the absolute difference between guidance and actual earnings, scaled by beginning assets-per-share.[19] *Bias* is guidance minus actual earnings, scaled by beginning assets-per-share.[20] Therefore, a positive value of *Bias* suggests that managers were optimistic in their forecasts. The *Error* and *Bias* variables are calculated using actual earnings reported in the First Call Actuals file to ensure consistency between management guidance and EPS realizations. *Specificity* is an ordinal variable for guidance specificity where point, range, open-ended, and qualitative guidance are coded as 4, 3, 2, and 1, respectively. *Horizon* is the number of days between guidance issuance and the fiscal period end. *PosNeg* is the ratio of

[19] The value of the guidance is either the point or open-ended estimate given by the manager or the mid-point of the range estimate. We use the mid-point for range estimates because prior research suggests that investors use the mid-point when forming their expectations of earnings (Baginski, Conrad, and Hassell 1993).

[20] Following Feng et al. (2009), we use beginning assets-per-share as our scalar. Our results do not change when we use beginning share price as an alternative scalar.

positive to negative guidance issuances for a firm during our sample period.[21] We conjecture that this ratio will be lower for occasional guiders who are more likely to provide guidance in the event of bad news and closer to unity for frequent guiders who are more likely to guide independent of news type.

4.3 Explanatory and Control Variables

We measure firms' guidance frequency percentage (*Frequency*) by calculating the number of quarters in which a firm has issued quarterly guidance, divided by the number of quarters since their first guidance issuance to the end of our sample period. In our analysis, we use the frequency ratio of guidance issued as the quintile classification variable. This variable is chosen to best reflect the underlying constructs of our study, reputation-building and learning. Firms could decide to begin building a reputation at any time during the sample period, and therefore it is the proportion of times they guide once they begin guiding that would better reveal their preference for reputation-building. Our main independent variable, *FreqQuintile*, is the quintile rank of *Frequency* over our sample period, and we refer to firms in *FreqQuintile5* as frequent guiders throughout the paper. We use several control variables drawn from prior research in our analysis.

Analysts' Expectations (*MBAnalyst*): Feng and Koch (2010) find that firms that disappointed analyst expectations in the past are more likely to stop issuing future guidance. Similarly, Cheng, Subramanyam, and Zhang (2006) find that frequent guiders are more likely to meet or beat analysts' contemporaneous forecasts. Therefore, we also include an indicator variable equal to one if the firm meets or beats analysts' consensus forecasts in the prior quarter.

[21] Guidance issuances are classified as positive, negative, or no guidance surprises using the "CIGCODE_DESC" variable on First Call.

Industry Classification (*HighTech*): HighTech is an indicator variable equal to one if a firm is in the biotech, retailing, electronics, or computer industry. This variable is included to control for industry-specific information environments that affect firms' disclosure decisions (Kim and Skinner 2011).

Firm Performance (*AnnRet* and *Loss*): We proxy for performance using market-adjusted buy-and-hold returns for the twelve months ending in the prior fiscal period (*AnnRet*) as Chen, Matsumoto, and Rajgopal (2011) find that firms with poor stock performance in the past are more likely to discontinue guidance. We also control for whether a firm reported a loss in a specific quarter (*Loss*) because managers of loss firms have greater difficulty estimating earnings (Ajinkya et al. 2005).

Economic Uncertainty (*RetVol* and *EarnVol*): Waymire (1985) finds that firms with volatile earnings issue forecasts less frequently. Earnings volatility (*EarnVol*) is defined as the volatility of seasonally adjusted earnings over twelve quarters ending in the current fiscal quarter, divided by median assets over the period. Following Hui, Matsunaga, and Morse (2009), we also use the standard deviation of twelve-month returns ending in the current fiscal period (*RetVol*) as a proxy for performance uncertainty. However, firms with high variability in their performance are also likely to disclose more frequently to assist investors' valuations.

Growth (*P/E*): We control for growth by including price to earnings (*P/E*) since it is possible that frequent guiders are more stable and mature firms.

Conservatism (*Cons*): We also control for a firm's financial reporting conservatism because Hui et al. (2009) find that firms with more conservative financial statements and variability in their performance issue guidance less frequently in subsequent periods. Our

measure of conservatism (*Cons*) is total accruals scaled by total assets in the prior fiscal period (Givoly and Hayn 2000).

Firm Complexity (*Segments*): The number of business segments (*Segments*) proxies for firm complexity because firms with multiple product lines and subsidiaries are more likely to benefit from increased disclosures that help investors analyze the firm (Nagar et al. 2005).

Market Risk (*Beta*): Following Bushee and Noe (2000), we also include a firm's equity beta (*Beta*) as a proxy for market risk.

4.4 Descriptive Statistics

Panel A of Table 2 provides univariate descriptive statistics on the determinants of reputation for the firms in the various quintiles. The average guidance frequency ratio is 0.05 for firms in *FreqQuintile1* while firms in *FreqQuintile5* are likely to guide three out of four quarters once they start issuing guidance. *Forecasts* is the number of times a firm issues guidance during the sample period. Firms in *FreqQuintile1* on average issue one forecast during the sample period while this number is 17 for firms in *FreqQuintile5*. In terms of the relation between guidance frequency and the reputation variables, we find that more frequent guiders are more likely to be on Fortune's list of "Best Companies to Work For", score higher on the ACSI, and are less likely to disclose material internal control weaknesses.[22] The difference in means between firms in *FreqQuintile1* and *FreqQuintile5* is significant for *BestCompanies* ($p<0.05$), *ACSI* ($p<0.01$), and *MW* ($p<0.05$). The results for the composite reputation scores (*RepScore1* and *RepScore2*) also suggest that firms in *FreqQuintile1* and *FreqQuintile5* are significantly different

[22] Firms with missing *ACSI* scores are excluded from the univariate analysis of *ACSI*.

with frequent guiders scoring significantly higher on both metrics ($p<0.01$ and $p<0.01$). The results for institutional ownership and analysts are also consistent with the findings in prior research. Firms that issue guidance more frequently have higher institutional ownership ($p<0.01$) and greater analyst coverage ($p<0.01$). Frequent guiders also enjoy higher multiples ($p<0.01$), have lower analyst dispersion ($p<0.01$), and are larger in size ($p<0.01$).

Panel B provides the pairwise correlation matrix for *Frequency* and the reputation variables. The univariate relation is significant for all but one of the reputation variables. Combined with the results discussed above, these findings suggest that *Frequency* is an appropriate proxy for the desire to build a reputation for disclosure transparency, as it is associated with other determinants of a firm's reputation with capital market participants and indicators of reputation with its employees and customers.

Panel C of Table 2 provides univariate descriptive statistics on the firm characteristics for the firms in the various quintiles. We find that several firm characteristics are significantly related to *Frequency*. Firms that issued guidance more frequently are more likely to meet or beat analysts' consensus forecasts. Frequent guiders also have better performance with higher prior year returns and a lower likelihood of losses. The proxies for economic uncertainty also suggest that frequent guiders have lower economic uncertainty with lower return and earnings volatility. While these findings are consistent with frequent guiders being more mature and stable firms, their growth ratios suggests otherwise. Firms in *FreqQuintile5* have significantly higher P/E ratios. We find that frequent guiders have more business segments but their reporting conservatism and market beta are not significantly different from that of occasional

guiders. Consistent with prior research, the findings from this analysis suggest that firms with reputational incentives are different from firms that issue guidance occasionally across several dimensions.

[Insert Table 2]

4.5 Guidance Frequency and Reputation-building

Hypothesis 1 predicts that guidance frequency is positively correlated with indicators of a firm's reputation with its employees and customers, and variables associated with reputation with capital market participants. Table 3 provides results for the multivariate analysis of this hypothesis. Our main variable of interest *RepScore1* is positively related to guidance frequency ($p<0.01$) in column 1. In column 2, we control for established determinants of firms' disclosure decisions and find that *RepScore1* continues to be significantly positive ($p<0.01$). We also examine whether guidance frequency is negatively associated with the costs of investments in reputation-building, proxied by *MW*. Consistent with our prediction, we find that *MW* is negatively associated with frequency ($p<0.01$) while *RepScore2* continues to be positively associated with frequency ($p<0.01$) in all specifications. The coefficients on the established determinants of disclosure are all consistent with prior research. We find that firms with greater institutional ownership and greater analyst following are more likely to disclose frequently. Frequent guiders also have lower analyst forecast dispersion. Overall, the results in table 3 are consistent with guidance frequency being associated with measures of a firm's reputation with its different constituents, the costs of investing in better information systems, and well-known determinants of firms' disclosure decisions.

[Insert Table 3]

5. Guidance Frequency and Guidance Properties

Section four provides strong evidence that frequent guiders are different from occasional guiders on many dimensions. In this section, we examine the relation between guidance frequency and the properties of the guidance.

Table 4 provides univariate statistics on the properties of guidance issued by firms in each quintile.[23] The frequent guiders (*FreqQuintile5*) display higher guidance accuracy with an average guidance error of 0.7% of beginning assets-per-share which is approximately one-sixth the level for firms in *FreqQuintile1*. Frequent guiders are also less optimistically biased than the occasional guiders even though they provide their guidance earlier in the quarter. *Bias* for firms in *FreqQuintile5* is 0.2% as compared to 3.6% of beginning assets-per-share for firms in *FreqQuintile1*. The statistics for *Horizon*, defined as the number of days between guidance issuance and the end of the fiscal period show that frequent guiders on average provide their first guidance 55 days prior to the end of the fiscal period as compared 36 days prior to the end of the fiscal period for the occasional guiders. Frequent guiders appear more likely to understand the earnings generation and disclosure process and therefore are willing to issue guidance earlier. While only suggestive of occasional guiders issuing guidance in the event of bad news, the ratio of positive to negative guidance surprises (*PosNeg*) is also significantly higher for firms in *FreqQuintile5*. While all groups are more likely to guide during periods of bad news (*PosNeg*<1), the ratio of 0.028 for *FreqQuintile1* suggests that occasional guiders are thirty-five times more likely to guide during periods of bad news than periods

[23] To ensure that our results are not driven by extreme outliers in the CIG dataset, we winsorize *Error* and *Bias* at the 1 and 99 percent levels.

of good news. Frequent guiders, however, are only twice as likely to guide in periods of bad news as periods of good news.

[Insert Table 4]

We carry out regressions at the firm level to test our second and third hypotheses that frequent guiders are likely to be less optimistic, more accurate and specific, and issue guidance earlier in the period compared to occasional guiders. The specifications are as follows (firm subscripts and intercept terms have been suppressed):

$$Error = \beta_0 + \beta_1 Frequency + \beta_2 MBAnalyst + \beta_3 HighTech + \beta_4 AnnRet + \beta_5 Loss + \beta_6 RetVol + \beta_7 EarnVol + \beta_8 P/E + \beta_9 Cons + \beta_{10} Segments + \beta_{11} Beta + \varepsilon \quad (1a)$$

$$Specificity = \beta_0 + \beta_1 Frequency + \beta_2 MBAnalyst + \beta_3 HighTech + \beta_4 AnnRet + \beta_5 Loss + \beta_6 RetVol + \beta_7 EarnVol + \beta_8 P/E + \beta_9 Cons + \beta_{10} Segments + \beta_{11} Beta + \varepsilon \quad (1b)$$

$$Horizon = \beta_0 + \beta_1 Frequency + \beta_2 MBAnalyst + \beta_3 HighTech + \beta_4 AnnRet + \beta_5 Loss + \beta_6 RetVol + \beta_7 EarnVol + \beta_8 P/E + \beta_9 Cons + \beta_{10} Segments + \beta_{11} Beta + \varepsilon \quad (1c)$$

$$Bias = \beta_0 + \beta_1 Frequency + \beta_2 MBAnalyst + \beta_3 HighTech + \beta_4 AnnRet + \beta_5 Loss + \beta_6 RetVol + \beta_7 EarnVol + \beta_8 P/E + \beta_9 Cons + \beta_{10} Segments + \beta_{11} Beta + \varepsilon \quad (1d)$$

Hypothesis 4 suggests that the incentives to develop a reputation for transparent reporting should lead frequent guiders to issue guidance when there is good news. This suggests that conditional on firms having good or bad news, the propensity to provide guidance in a given quarter should vary for frequent and occasional guiders. Therefore, we examine whether the ratio of positive to negative surprises during the sample period is higher for frequent guiders using the following specification:

$$PosNeg = \beta_0 + \beta_1 Frequency + \beta_2 MBAnalyst + \beta_3 HighTech + \beta_4 AnnRet + \beta_5 Loss + \beta_6 RetVol + \beta_7 EarnVol + \beta_8 P/E + \beta_9 Cons + \beta_{10} Segments + \beta_{11} Beta + \varepsilon \quad (1e)$$

One potential issue with examining the effect of frequency on guidance properties is that the coefficients on *Frequency* could be biased and inconsistent if *Frequency* is endogenous (i.e. correlated with the error term). For example, there might be omitted correlated variables (such as managerial talent) that affect both the decision to guide frequently and the properties of guidance issued. To mitigate this possibility, we carry out a two-stage least squares (2SLS) analysis wherein the first stage involves a regression of guidance frequency on *RepScore1*, *Inst*, *Num*, *Disp*, *M/B*, *Size*, and an indicator variable for the year in which a firm begins issuing guidance.[24] The predicted value from the first stage serves as an instrument for *Frequency* in the second stage. Table 5 provides results of the 2SLS regressions explaining guidance properties. The analysis is done using firm-level average values.[25] The univariate associations documented earlier continue to hold in the multivariate setting. Consistent with hypothesis 2, *Frequency* is negatively associated with *Error* (β_1 = -0.010, p < 0.01) and positively associated with *Horizon* (β_1 = 0.080, p < 0.05) and *Specificity* (β_1 = 0.876, p < 0.01). Consistent with hypothesis 3, *Bias* is negatively associated with *Frequency* (β_1 = -0.010, p < 0.01). Finally, consistent with

[24] Firms that begin forecasting later in our sample period will have a higher *Frequency* ratio due to sample truncation. As such, we control for the year in which a firm begins forecasting to reduce the effect of overall time trends. Moreover, in untabulated analyses, we do not find any systematic differences in the year in which firms begin issuing guidance across the different *Frequency* quintiles. The average beginning year is either 1997 or 1998 for all quintiles, which suggests that the results are unlikely to be driven by a disproportionate number of late guidance-initiators falling into the top quintiles.

[25] The analysis is also carried out using firm-level median values with similar results.

occasional guiders being more likely to guide in the event of bad news (hypothesis 4), we also find a positive association between *Frequency* and *PosNeg* ($\beta_1 = 0.495$, $p < 0.01$).

The results for the control variables are generally consistent with prior studies. In particular, we find that firms with greater return volatility issue more inaccurate guidance. Firms that meet or beat analysts' forecasts also tend to issue less optimistically biased guidance. We also find that firms with higher prior annual returns and loss firms issue guidance earlier in the period.[26]

Overall, we present evidence that frequent guiders provide guidance of higher quality. Consistent with frequent guiders aspiring to build a reputation for enhanced disclosures and learning from their guidance experience, we find that their guidance issuances are more accurate, less optimistically biased, more specific, and issued earlier in the period. Frequent guiders are also more likely to provide guidance independent of news type, consistent with their incentives to build a reputation for transparent reporting.[27]

[Insert Table 5]

6. Learning over Time within Firms

The analysis thus far provides evidence of differences between frequent and occasional guiders using a cross-sectional design. Hypothesis 5 examines whether firms exhibit improvements in their guidance properties over time, which would be consistent with the effects of organizational learning. We utilize the traditional two-stage Heckman

[26] We also carried out our analysis using a dichotomous variable *OPT*, where *OPT* is coded as equal to one if the management estimate is optimistically biased. The logit results are similar to the *Bias* findings.

[27] We use the ivregress command in STATA to estimate the regressions simultaneously and to generate correct residuals in the second stage.

procedure to control for a self-selection bias because guidance issuance is voluntary, and whether a firm discloses in a specific quarter is likely to be driven by time-varying factors, particularly for the occasional guiders. The analyses in this section are conducted at the firm-quarter level because we are interested in within-firm time-series changes. The Heckman two-stage approach is applied using the following specifications (firm and time subscripts have been suppressed):

$$\begin{aligned}\Pr(Occur) = {} & \beta_0 + \beta_1 Size + \beta_2 HighTech + \beta_3 AnnRet + \beta_4 Loss + \beta_5 RetVol + \beta_6 EarnVol \\ & + \beta_7 M/B + \beta_8 P/E + \beta_9 Cons + \beta_{10} Segments + \beta_{11} Beta + \beta_{12} Inst + \beta_{13} Num \\ & + \beta_{14} MBAnalyst + \beta_{15} Disp + \varepsilon \end{aligned} \quad (2)$$

$$\begin{aligned} Error = {} & \beta_0 + \beta_1 Sequence + \beta_2 Size + \beta_3 AnnRet + \beta_4 Loss + \beta_5 RetVol + \beta_6 EarnVol \\ & + \beta_7 M/B + \beta_8 P/E + \beta_9 Cons + \beta_{10} Beta + \beta_{11} Inst + \beta_{12} Disp + \beta_{13} InvMills \\ & + Industry\ and\ Time\ Fixed\ Effects + \varepsilon \end{aligned} \quad (2a)$$

$$\begin{aligned} Specificity = {} & \beta_0 + \beta_1 Sequence + \beta_2 Size + \beta_3 AnnRet + \beta_4 Loss + \beta_5 RetVol + \beta_6 EarnVol \\ & + \beta_7 M/B + \beta_8 P/E + \beta_9 Cons + \beta_{10} Beta + \beta_{11} Inst + \beta_{12} Disp + \beta_{13} InvMills \\ & + Industry\ and\ Time\ Fixed\ Effects + \varepsilon \end{aligned} \quad (2b)$$

$$\begin{aligned} Horizon = {} & \beta_0 + \beta_1 Sequence + \beta_2 Size + \beta_3 AnnRet + \beta_4 Loss + \beta_5 RetVol + \beta_6 EarnVol \\ & + \beta_7 M/B + \beta_8 P/E + \beta_9 Cons + \beta_{10} Beta + \beta_{11} Inst + \beta_{12} Disp + \beta_{13} InvMills \\ & + Industry\ and\ Time\ Fixed\ Effects + \varepsilon \end{aligned} \quad (2c)$$

$$\begin{aligned} Bias = {} & \beta_0 + \beta_1 Sequence + \beta_2 Size + \beta_3 AnnRet + \beta_4 Loss + \beta_5 RetVol + \beta_6 EarnVol \\ & + \beta_7 M/B + \beta_8 P/E + \beta_9 Cons + \beta_{10} Beta + \beta_{11} Inst + \beta_{12} Disp + \beta_{13} InvMills \\ & + Industry\ and\ Time\ Fixed\ Effects + \varepsilon \end{aligned} \quad (2d)$$

Equation 2 is a probit model that estimates the likelihood of guidance occurrence where the dependent variable *Occur* is equal to one if the firm issues guidance in a given

quarter during the sample period. The explanatory variables include all of the firm characteristics (control variables) discussed in section 4.3 as well as *Ins*t, *Num*, *Disp, M/B, and Size*. The variables are measured in the beginning of the quarter and the estimated parameters from this model are then used to calculate the inverse mills ratio (*InvMills*).[28] Equations 2a to 2d examine whether guidance properties improve over time, conditional on guidance issuance. *Sequence*, the main independent variable of interest, is the sequential order of guidance issuance. If firms learn to improve their guidance quality with repetition, then we expect guidance error and bias to decrease and specificity and timeliness to increase with *Sequence*. One issue with using the *Sequence* variable is that time trends are likely to play a role in the analysis since higher values of *Sequence* would occur in more recent time periods. Time trends are particularly important because changes could occur in guidance properties due to time-related factors that are not related to learning, such as change in accounting methods, improved computing power and information systems, and more general awareness of the guidance process.[29] To control for overall time trends in the properties of guidance, we regress *Sequence* on a time effect to extract overall time trends, and then use the residual from this estimation as the main independent variable of interest in equations 2a to 2d. We also include industry fixed

[28] We follow prior studies on earnings guidance and include the inverse mills ratio in the second stage. The inverse mill ratio approach is used to address self-selection issues due to unobservable effects by estimating a bias correction term in the first-stage through the guidance choice model and adding it to the second-stage outcome model. For example, if occasional guiders choose not to guide when managers have information that earnings uncertainty is high, then we would only observe guidance when firms have earnings that are easier to predict. Because the unobservable term is correlated with *Sequence*, this selection issue would bias the coefficients on *Sequence*, and lead us to conclude that learning occurs.

[29] While this is an issue to consider, it must also be noted that the time-related changes could occur both ways (i.e., improve or worsen guidance properties). To have a confounding effect on our results, the net effect of the time-related changes will have to result in an improvement in guidance properties.

effects and time indicators for the year in which a firm begins forecasting to control for industry-specific and time-related factors.[30]

Results for this analysis are presented in Table 6. As expected, *Sequence* is negatively associated with *Error* (β_1 = -0.001, p < 0.01) and *Bias* (β_1 = -0.001, p < 0.01), and positively associated with *Specificity* (β_1 = 0.006, p < 0.01) and *Horizon* (β_1 = 0.543, p < 0.01). This is consistent with frequent guiders issuing guidance with greater accuracy, specificity, and timeliness, and less optimistic bias over time. The coefficients on the control variables suggest that loss firms issue guidance with greater error, less specificity, and more optimistic bias while firms with greater analyst dispersion issue guidance with lower accuracy and specificity. Overall, the results in Table 6 suggest that firms' guidance properties exhibit patterns that are consistent with the effect of learning.[31]

[Insert Table 6]

7. Summary

This paper attempts to further our understanding of guidance behavior by firms. The study differs from previous and contemporaneous work in several ways. First, we draw on research on corporate reputation in several streams of literature and provide evidence that guidance frequency is associated with variables related to a firm's reputation with its different constituents. Second, unlike most prior work, we examine

[30] Larcker and Rusticus (2010) emphasize that to successfully control for endogeneity, at least one of the instruments identified in the first stage must be uncorrelated with the dependent variable in the second stage. In our analyses, this variable is the number of analysts following (*Num*). Following Feng et al. (2009), we exclude *Num* from the second stage regressions in our tests of equations 1a to 1e and 2a to 2d.

[31] For robustness, we adopt an alternative design and adjust for the median guidance error, bias, specificity, and horizon of the occasional guiders in the same calendar quarter. We then regress the differences between these two groups on a time variable and find that the untabulated results continue to hold. The occasional guiders serve as a natural control group because their maximum number of forecasts is two, which suggests that they are less likely to benefit from learning, and that their forecasts reflect time-related changes.

whether a firm's guidance frequency is an important determinant of its guidance properties. Our results suggest that the characteristics of guidance issued by occasional and frequent guiders differ. Compared to occasional guiders, frequent guiders issue guidance in a timelier manner and their guidance issuances are less optimistic, more accurate, and more specific, consistent with their reputational incentives and the effect of learning. Frequent guiders also appear to benefit from the experience of providing guidance, as evidenced by improvements in guidance accuracy, specificity, and timeliness. While our results are consistent with an improvement in firms' guidance quality over time, we are unable to examine *how* firms learn. Lastly, we find that frequent guiders are more likely to issue both good and bad news guidance compared to occasional guiders, who are significantly more likely to disclose only bad news.

Our results are consistent with frequency being an important classificatory variable, with frequent guiders representing a class or type of firm that develop a reputation for enhanced disclosures through their guidance and therefore have different incentives and processes that affect the properties of the guidance and learning over time.

REFERENCES

Ajinkya, B. and M. Gift. 1984. Corporate managers' earnings forecasts and symmetrical adjustments of market expectations. *Journal of Accounting Research* 22: 425-444.

Ajinkya, B., S. Bhojraj, and P. Sengupta. 2005. The association between outside directors, institutional investors and the properties of management earnings forecasts. *Journal of Accounting Research* 43: 343-376

Anilowski, C., M. Feng, and D. Skinner. 2007. Does earnings guidance affect market returns? The nature and information content of aggregate earnings guidance. *Journal of Accounting and Economics* 44: 36-63.

Arrow, K. 1962. Economic welfare and the allocation of resources for invention. In R. R. Nelson (ed.), *The Rate and Direction of Inventive Activity, 609-625*. Princeton University Press: Princeton, NJ.

Baik, B., and G. Jiang. 2006. The use of management forecasts to dampen analysts' expectations. *Journal of Accounting and Public Policy* 25: 531-553.

Baginski, S. P., E. J. Conrad, and J. M. Hassell. 1993. The effects of management forecast precision on equity pricing and on the assessment of earnings uncertainty. *The Accounting Review* 68: 913-927.

Bamber, L. S. and Y. S. Cheon. 1998. Discretionary management earnings forecast disclosures: Antecedents and outcomes associated with forecast venue and forecast specificity choices. *Journal of Accounting Research* 36: 167-190.

Bamber, L., J. Jiang, and I. Wang. 2010. What's my style? The influence of top managers and their personal backgrounds on voluntary corporate financial disclosure. *The Accounting Review* 85: 1131-1162.

Bartov, E., D. Givoly, and C. Hayn. 2002. The rewards to meeting or beating analysts' consensus forecasts. *Journal of Accounting and Economics* 33: 173-204.

Bhojraj, S., P. Hribar, J. McInnis, and M. Picconi. 2009. Making sense of cents: An examination of firms that marginally meet or beat analyst forecasts. *Journal of Finance* 64: 2361-2388.

Bushee, B. and C. Noe. 2000. Corporate disclosure practices, institutional investors, and stock return volatility. *Journal of Accounting Research* 30: 171-202.

Chen, S., D. Matsumoto, and S. Rajgopal. 2011. Is silence golden? An empirical analysis of firms that stop giving quarterly guidance. *Journal of Accounting and Economics* 51: 134-150.

Chen, R. and R. Johnston. 2010. The effect of regulator oversight on firms' information environment: Securities and Exchange Commission comment letters. Working paper, MIT.

Cheng, M., K.R. Subramanyam, and Y. Zhang. 2006. Earnings guidance and managerial myopia. Working paper, Columbia University.

Chuk, E., D. Matsumoto, and G. Miller. 2009. Assessing methods of identifying management forecasts: CIG vs. research collected. Working paper, University of Southern California.

Cotter, J., I. Tuna, and P. Wysocki. 2006. Expectations management and beatable targets: How do analysts react to explicit earnings guidance? *Contemporary Accounting Research* 23: 593-624.

Diamond, D. 1989. Reputation acquisition in debt markets. *Journal of Political Economy* 97: 828-862.

Doyle, J., W. Ge, and S. McVay. 2007a. Accruals quality and internal control over financial reporting. *The Accounting Review* 82: 1141-1170.

Doyle, J., W. Ge, and S. McVay. 2007b. Determinants of weaknesses in internal control over financial reporting. *Journal of Accounting and Economics* 44: 193-223.

Dye, R. 1985. Disclosure of nonproprietary information. *Journal of Accounting Research* 23: 123-145.

Edmans, A. 2011. Does the stock market fully value intangibles? Employee satisfaction and equity prices. Forthcoming, *Journal of Financial Economics*.

Einhorn, H. and R. Hogarth. 1978. Confidence in judgment: Persistence in the illusion of validity. *Psychological Review* 85: 395-416.

Feng, M. and A. Koch. 2010. Once bitten twice shy: The relation between outcomes of earnings guidance and management guidance strategy. *The Accounting Review* 85: 1951-1985.

Feng, M., C. Li, and S. McVay. 2009. Internal control and management guidance. *Journal of Accounting and Economics* 48: 190-209.

Fombrun, C. and M. Shanley. 1990. What's in a name? Reputation building and corporate strategy. *Academy of Management Journal* 33: 233-258.

Fombrun, C. and C. Van Riel. 1997. The reputational landscape. *Corporate Reputation Review* 1: 5-13.

Fornell, C., M. Johnson, E. Anderson, J. Cha, and B. Bryant. 1996. The American Customer Satisfaction Index: Nature, purpose, and findings. *Journal of Marketing* 60: 7:18.

Fornell, C., S. Mithas, F. Morgeson, and M. Krishnan. 2006. Customer satisfaction and stock prices: High returns, low risk. *Journal of Marketing* 70: 3-14.

Francis, J., D. Philbrick, and K. Schipper. 1994. Shareholder litigation and corporate disclosure. *Journal of Accounting Research* 32: 137-164.

Givoly, D. and C. Hayn. 2000. The changing time-series properties of earnings, cash flows and accruals: Has financial accounting become more conservative? *Journal of Accounting and Economics* 29: 287-320.

Graham, J., C. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40: 3-73.

Hennes, K., A. Leone, and B. Miller. 2008. The importance of distinguishing errors from irregularities in restatement research: The case of restatements and CEO/CFO turnover. *The Accounting Review* 83: 1487-1519.

Hirst, D. E., L. Koonce, and S. Venkataraman. 2008. Management earnings forecasts: A review and framework. *Accounting Horizons* 22: 315-338.

Hope, J. 2006. Use a rolling forecast to spot trends. Harvard Business School Working Knowledge.

Huber, G. P. 1991. Organizational learning: The contributing processes and the literature. *Organization Science* 2: 88-115.

Hui, K. W., S. Matsunaga, and D. Morse. 2009. The impact of conservatism on management quantitative earnings forecasts. *Journal of Accounting and Economics* 47: 192-207.

Hutton, A. and P. Stocken. 2009. Prior forecasting accuracy and investor reaction to management earnings forecasts. Working paper, Boston College.

Kasznik, R. and B. Lev. 1995. To warn or not to warn: Management disclosures in the face of an earnings surprise. *The Accounting Review* 70: 113-134.

Kasznik, R. and M. McNichols. 2002. Does meeting earnings expectations matter? Evidence from analyst forecast revisions and share prices. *Journal of Accounting Research* 40: 727-759.

Ke, B. and Y. Yu. 2006. The effect of issuing biased earnings forecasts on analysts' access to management and survival. *Journal of Accounting Research* 44: 965-1000.

Kim, I. and D. Skinner. 2011. Measuring securities litigation risk. Forthcoming, *Journal of Accounting and Economics*.

King, R., G. Pownall, and G. Waymire. 1990. Expectations adjustment via timely earnings forecast disclosure: review, synthesis and suggestions for future research. *Journal of Accounting Literature* 9: 113-144.

Kreps, D. and R. Wilson. 1982. Reputation and imperfect information. *Journal of Economic Theory* 27:253-379.

Lang, M. and R. Lundholm. 1996. Corporate disclosure policy and analyst behavior. *The Accounting Review* 71: 467-492.

Lange, D., P. Lee, and Y. Dai. 2010. Organizational reputation: A review. *Journal of Management* 37: 153-184.

Larcker, D. and T. Rusticus. 2010. On the use of instrumental variables in accounting research. *Journal of Accounting and Economics* 49: 186-205.

Lev, B. and S. Penman. 1990. Voluntary forecast disclosure, nondisclosure, and stock prices. *Journal of Accounting Research* 28: 49-76.

Levitt, B. and J. March 1988. Organizational learning. *Annual Review of Sociology* 14: 319-338.

Li, Feng. 2008. Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Economics* 45: 221-247.

Libby, R., H. T. Tan, and J. E. Hutton. 2006. Does the form of management earnings guidance affect analysts' earnings forecasts? *The Accounting Review* 81: 207-226.

Libby, R., J. E. Hunton, H. T. Tan, and N. Seybert. 2008. Relationship incentives and the optimistic/pessimistic pattern in analysts' forecasts. *Journal of Accounting Research* 46: 173-198.

McKinsey Quarterly. 2006. Weighing the pros and cons of earning guidance. January 2006.

Mikhail, M., B. Walther, and R. Willis. 1997. Do security analysts improve their performance with experience? *Journal of Accounting Research* 35: 131-157.

Milgrom, P. and J. Roberts. 1982. Predation, reputation, and entry deterrence. *Journal of Economic Theory* 27: 280-312.

Milgrom, P. and J. Roberts. 1986. Price and advertising signals of product quality. *Journal of Political Economy* 94: 796-821.

Patell, J. M. 1976. Corporate forecasts of earnings per share and stock price behavior: Empirical tests. *Journal of Accounting Research* 14: 246-276.

Penman, S. H. 1980. An empirical investigation of the voluntary disclosure of corporate earnings forecasts. *Journal of Accounting Research* 18: 132-160.

Richardson, S., S. H. Teoh, and P. Wysocki. 2004. The walk-down to beatable analyst forecasts: The role of equity issuance and insider trading incentives. *Contemporary Accounting Research* 21: 885-924.

Shapiro, C. 1983. Premiums for high quality products as returns to reputations. *Quarterly Journal of Economics* 98: 659-679.

Skinner, D. 1994. Why firms voluntarily disclose bad news. *Journal of Accounting Research* 32: 38-60.

Skinner, D. 1997. Earnings disclosures and stockholder lawsuits. *Journal of Accounting and Economics* 23: 249-282.

Spence, A. 1974. Market signaling: Informational transfer in hiring and related screening processes. Harvard University Press, Cambridge, MA.

Teece, D., G. Pisano, and A. Shuen. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal* 18: 509-533.

Verrecchia, R. 1983. Discretionary disclosure. *Journal of Accounting and Economics* 5: 179-194.

Waymire, G. 1985. Earnings volatility and voluntary management forecast disclosure. *Journal of Accounting Research* 23: 268-295.

Williams, P. A. 1996. The relation between a prior earnings forecast by management and analyst response to a current management forecast. *The Accounting Review* 71: 103-115.

Wilson, R. 1985. *Reputations in games and markets. Game theoretic models of bargaining*. Edited by A. E. Roth. Cambridge University Press.

Zollo, M. and S. Winter. 2002. Deliberate learning and the evolution of dynamic capabilities. *Organization Science* 13: 339-351.

Table 1 Distribution of Management Guidance 1995-2005

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total	Row%
1	141	109	139	117	134	129	134	48	19	23	11	1004	10.75%
2	30	45	45	151	119	147	211	74	37	35	16	910	9.75%
3	6	2	22	71	87	131	223	115	60	37	21	775	8.30%
4		1	12	30	66	99	200	146	72	61	23	710	7.60%
5			4	15	42	66	181	151	93	57	39	648	6.94%
6			1	11	22	48	131	168	102	64	34	581	6.22%
7				4	11	34	107	145	121	69	46	537	5.75%
8				2	11	18	67	141	121	82	51	493	5.28%
9					8	9	44	136	113	106	46	462	4.95%
10					3	6	32	98	116	107	54	416	4.45%
11					1	7	21	74	110	123	59	395	4.23%
12						5	15	41	113	113	79	366	3.92%
13						3	10	32	92	117	83	337	3.61%
14						2	5	22	71	114	90	304	3.26%
15							5	17	51	103	89	265	2.84%
16							3	12	31	89	97	232	2.48%
17							2	6	22	79	84	193	2.07%
18								5	17	61	86	169	1.81%
19								3	13	40	80	136	1.46%
20								2	8	26	77	113	1.21%
21								1	6	19	66	92	0.99%
22									2	18	43	63	0.67%
23									2	11	27	40	0.43%
24									2	7	21	30	0.32%
25									1	5	15	21	0.22%
26										2	15	17	0.18%
27										2	11	13	0.14%
28										1	6	7	0.07%
29											6	6	0.06%
30											1	1	0.01%
31											1	1	0.01%
32											1	1	0.01%
Total	177	157	223	401	504	704	1391	1437	1395	1571	1378	9338	
Column%	1.90%	1.68%	2.39%	4.29%	5.40%	7.54%	14.90%	15.39%	14.94%	16.82%	14.76%		

The row (column) indicates the sequence (year) of guidance issuance. The minimum (maximum) number of guidance issuances for our sample firms during 1995-2005 is 1 (32).

Table 2 Descriptive Statistics

Panel A Determinants of Guidance Reputation

Variable	Mean	Median	Min	Max	Std Dev	Difference in Means
Frequency						
FreqQuintile1	0.046	0.045	0.025	0.071	0.014	
FreqQuintile2	0.108	0.105	0.074	0.148	0.021	
FreqQuintile3	0.210	0.205	0.150	0.297	0.041	
FreqQuintile4	0.418	0.419	0.300	0.553	0.074	
FreqQuintile5	0.752	0.714	0.556	1.000	0.141	p<0.01
Forecasts						
FreqQuintile1	1.205	1.000	1.000	2.000	0.405	
FreqQuintile2	2.741	3.000	1.000	5.000	1.123	
FreqQuintile3	5.508	5.000	1.000	11.000	2.280	
FreqQuintile4	11.236	11.000	1.000	22.000	4.803	
FreqQuintile5	16.903	18.000	1.000	32.000	6.473	p<0.01
BestCompanies						
FreqQuintile1	0.115	0.000	0.000	7.000	0.747	
FreqQuintile2	0.085	0.000	0.000	7.000	0.586	
FreqQuintile3	0.117	0.000	0.000	8.000	0.818	
FreqQuintile4	0.203	0.000	0.000	8.000	1.040	
FreqQuintile5	0.291	0.000	0.000	8.000	1.272	p<0.05
ACSI						
FreqQuintile1	0.745	0.724	0.624	0.825	0.051	
FreqQuintile2	0.752	0.725	0.656	0.860	0.052	
FreqQuintile3	0.760	0.758	0.630	0.840	0.055	
FreqQuintile4	0.765	0.760	0.610	0.882	0.054	
FreqQuintile5	0.761	0.760	0.668	0.855	0.049	p<0.01
MW						
FreqQuintile1	0.148	0.000	0.000	1.000	0.356	
FreqQuintile2	0.158	0.000	0.000	1.000	0.365	
FreqQuintile3	0.156	0.000	0.000	1.000	0.364	
FreqQuintile4	0.157	0.000	0.000	1.000	0.364	
FreqQuintile5	0.097	0.000	0.000	1.000	0.296	p<0.05
Comments						
FreqQuintile1	0.307	0.000	0.000	1.000	0.462	
FreqQuintile2	0.372	0.000	0.000	1.000	0.484	
FreqQuintile3	0.291	0.000	0.000	1.000	0.455	
FreqQuintile4	0.305	0.000	0.000	1.000	0.461	
FreqQuintile5	0.269	0.000	0.000	1.000	0.444	p=0.12
Restatements						
FreqQuintile1	0.436	0.000	0.000	5.000	0.773	
FreqQuintile2	0.504	0.000	0.000	4.000	0.818	
FreqQuintile3	0.355	0.000	0.000	5.000	0.661	
FreqQuintile4	0.418	0.000	0.000	5.000	0.783	
FreqQuintile5	0.352	0.000	0.000	4.000	0.696	p=0.12

Panel A (cont'd) Determinants of Guidance Reputation

Variable	Mean	Median	Min	Max	Std Dev	Difference in Means
RepScore1						
FreqQuintile1	-0.742	-1.000	-5.000	7.000	1.309	
FreqQuintile2	-0.918	-1.000	-6.000	6.000	1.378	
FreqQuintile3	-0.662	-1.000	-5.000	8.000	1.341	
FreqQuintile4	-0.629	-1.000	-6.000	7.000	1.540	
FreqQuintile5	-0.352	0.000	-4.000	12.000	1.711	p<0.01
RepScore2						
FreqQuintile1	-0.595	0.000	-5.000	7.000	1.188	
FreqQuintile2	-0.761	-1.000	-5.000	6.000	1.224	
FreqQuintile3	-0.506	0.000	-5.000	8.000	1.225	
FreqQuintile4	-0.473	0.000	-5.000	7.000	1.434	
FreqQuintile5	-0.255	0.000	-4.000	12.000	1.652	p<0.01
Inst						
FreqQuintile1	0.393	0.366	0.005	0.936	0.235	
FreqQuintile2	0.486	0.493	0.016	0.959	0.222	
FreqQuintile3	0.535	0.562	0.006	0.990	0.207	
FreqQuintile4	0.578	0.622	0.023	0.930	0.209	
FreqQuintile5	0.624	0.659	0.001	0.952	0.187	p<0.01
Num						
FreqQuintile1	4.259	2.605	1.000	24.448	4.500	
FreqQuintile2	5.137	3.591	1.000	23.615	4.353	
FreqQuintile3	6.612	4.897	1.000	33.326	5.294	
FreqQuintile4	7.295	5.329	1.000	30.295	5.625	
FreqQuintile5	8.545	7.045	1.000	31.167	5.926	p<0.01
Disp						
FreqQuintile1	0.002	0.001	0.000	0.067	0.005	
FreqQuintile2	0.002	0.001	0.000	0.018	0.003	
FreqQuintile3	0.002	0.001	0.000	0.025	0.003	
FreqQuintile4	0.001	0.001	0.000	0.034	0.002	
FreqQuintile5	0.001	0.000	0.000	0.005	0.001	p<0.01
M/B						
FreqQuintile1	2.786	2.154	-3.464	18.005	2.706	
FreqQuintile2	2.546	2.065	-3.464	18.005	2.220	
FreqQuintile3	2.991	2.278	-3.464	18.005	2.901	
FreqQuintile4	3.498	2.572	-3.464	18.005	3.125	
FreqQuintile5	3.606	2.901	-3.464	18.005	2.816	p<0.01
Size						
FreqQuintile1	5.374	5.016	1.288	11.663	2.055	
FreqQuintile2	5.962	5.846	1.160	11.588	1.826	
FreqQuintile3	6.317	6.263	1.982	11.836	1.902	
FreqQuintile4	6.661	6.449	2.129	11.830	1.745	
FreqQuintile5	7.073	7.066	1.587	12.541	1.669	p<0.01

The sample consists of 1,501 firms between 1995 and 2005. *Frequency* is the number of quarters in which a firm has issued quarterly guidance, divided by the number of quarters since their first guidance issuance to the end of our sample period. *FreqQuintile* is the quintile rank of guidance frequency. *Forecasts* is the number of forecasts issued during the sample period. *BestCompanies* is the number of years firm is on Fortune's list of "Best Companies to Work For." *ACSI* is firm's average score on the American Customer Satisfaction Index. *MW* is an indicator variable equal to one if firm disclosed a material weakness. *Comments* is an indicator variable equal to one if firm received an SEC comment letter. *Restatements* is the number of financial restatements. *RepScore1* is the sum of (1 if *ACSI* is greater than the industry average, *BestCompanies*, *MW**-1, *Comments**-1, *Restatements**-1). *RepScore2* is the sum of (1 if *ACSI* is greater than the industry average, *BestCompanies*, *Comments**-1, *Restatements**-1). *Inst* is institutional ownership. *Num* is number of analysts following. *Disp* is analyst forecast dispersion. *M/B* is market to book. *Size* is the natural log of market value. Descriptive statistics are reported at the firm level using firm averages over the 11-year sample period. See Appendix for variable definitions. The last column presents p-values based on two-tailed tests comparing the difference in means between *FreqQuintile1* and *FreqQuintile5*.

Panel B Pairwise Correlations

	Frequency	BestCompanies	ACSI	MW	Comments	Restatements	Inst	Num	Disp	M/B	Size
Frequency	1.00	0.09	0.11	-0.06	-0.05	-0.03	0.29	0.25	-0.20	0.02	0.26
		<0.01	<0.01	<0.05	<0.05	0.22	<0.01	<0.01	<0.01	0.44	<0.01
BestCompanies	0.09	1.00	0.06	-0.03	-0.01	-0.05	0.06	0.32	-0.08	0.01	0.27
	<0.01		<0.05	0.19	0.68	<0.05	<.05	<0.01	<0.01	0.57	<0.01
ACSI	0.15	0.08	1.00	0.05	0.13	0.06	0.08	0.07	-0.08	0.05	0.05
	<0.01	<0.01		0.13	<0.01	<0.05	<0.05	<0.05	<0.04	<0.10	0.15
MW	-0.04	-0.04	0.06	1.00	0.09	0.28	-0.01	-0.09	0.09	0.07	-0.09
	<0.10	<0.10	<0.10		<0.01	<0.01	0.55	<0.01	<0.01	<0.01	<0.01
Comments	-0.04	0.00	0.16	0.09	1.00	0.10	-0.05	0.04	0.04	-0.02	-0.03
	<0.10	0.87	<0.01	<0.01		<0.01	<0.05	0.16	<0.10	0.41	0.29
Restatements	-0.02	-0.03	0.10	0.29	0.10	1.00	0.03	-0.07	0.08	0.02	-0.07
	0.43	0.18	<0.01	<0.01	<0.01		0.21	<0.01	<0.01	0.52	<0.01
Inst	0.34	0.09	0.09	-0.02	-0.06	0.02	1.00	0.42	-0.19	0.00	0.57
	<0.01	<0.01	<0.05	0.52	<0.05	0.38		<0.01	<0.01	0.97	<0.01
Num	0.34	0.26	0.10	-0.08	0.00	-0.04	0.54	1.00	-0.19	0.06	0.77
	<0.01	<0.01	<0.01	<0.01	0.99	<0.10	<0.01		<0.01	<0.05	<0.01
Disp	-0.27	-0.20	-0.05	0.16	0.06	0.12	-0.26	-0.41	1.00	-0.01	-0.24
	<0.01	<0.01	0.13	<0.01	<0.05	<0.01	<0.01	<0.01		0.81	<0.01
M/B	0.19	0.19	0.23	-0.01	0.02	-0.02	0.13	0.42	-0.36	1.00	0.04
	<0.01	<0.01	<0.01	0.52	0.47	0.46	<0.01	<0.01	<0.01		<0.10
Size	0.31	0.26	0.07	-0.10	-0.04	-0.08	0.57	0.80	-0.41	0.32	1.00
	<0.01	<0.01	<0.05	<0.01	<0.10	<0.01	<0.01	<0.01	<0.01	<0.01	

This panel displays correlation coefficients and significance values for *Frequency* and the reputation variables. Pearson (Spearman) correlations are provided in the upper (lower) diagonal. The sample consists of 1,501 firms between 1995 and 2005. See Appendix for variable definitions.

Panel C Firm Characteristics

Variable	FreqQuintile1		FreqQuintile2		FreqQuintile3		FreqQuintile4		FreqQuintile5		Difference in Means
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	
MBAnalyst	0.438	0.439	0.489	0.500	0.519	0.523	0.539	0.535	0.573	0.583	<0.01
HighTech	0.036	0.000	0.045	0.000	0.034	0.000	0.110	0.000	0.161	0.000	<0.01
AnnRet	0.083	0.069	0.116	0.085	0.126	0.080	0.146	0.087	0.148	0.096	<0.01
Loss	0.277	0.205	0.228	0.159	0.239	0.182	0.193	0.114	0.145	0.091	<0.01
RetVol	0.140	0.127	0.125	0.117	0.132	0.123	0.128	0.118	0.115	0.108	<0.01
EarnVol	0.314	0.017	0.043	0.013	0.292	0.016	0.043	0.013	0.030	0.013	0.22
P/E	12.247	12.833	15.586	14.392	15.518	14.809	17.846	17.338	22.249	20.135	<0.01
Cons	-0.019	-0.007	-0.007	-0.004	-0.011	-0.005	-0.014	-0.010	-0.017	-0.007	0.87
Segments	4.881	4.000	5.285	5.000	5.622	4.636	5.476	4.909	5.434	4.500	0.02
Beta	1.064	0.877	1.151	1.027	1.310	1.089	1.284	1.161	1.154	1.050	0.10

The sample consists of 1,501 firms between 1995 and 2005. *Frequency* is the number of quarters in which a firm has issued quarterly guidance, divided by the number of quarters since their first guidance issuance to the end of our sample period. *FreqQuintile* is the quintile rank of guidance frequency. Descriptive statistics are reported at the firm level using firm averages over the 11-year sample period. See Appendix for other variable definitions. The last column presents p-values based on two-tailed tests comparing the difference in means between FreqQuintile1 and FreqQuintile5.

Table 3 Guidance Frequency and Reputation-building

	Frequency	Frequency	Frequency	Frequency	Frequency
RepScore1	0.028***	0.013***			
	(0.005)	(0.005)			
RepScore2			0.028***	0.024***	0.010**
			(0.005)	(0.005)	(0.005)
MW				-0.061***	-0.038**
				(0.017)	(0.018)
Inst		0.210***			0.208***
		(0.038)			(0.038)
Num		0.006***			0.006***
		(0.002)			(0.002)
Disp		-9.439***			-9.326***
		(3.209)			(2.336)
M/B		-0.000			0.000
		(0.000)			(0.000)
Size		0.012			0.012*
		(0.007)			(0.007)
R-squared	0.158	0.257	0.153	0.159	0.258

This table presents OLS tests of the association between guidance frequency and determinants of reputation. The sample consists of 1,501 firms between 1995 and 2005. *Frequency* is the number of quarters in which a firm has issued quarterly guidance, divided by the number of quarters since their first guidance issuance to the end of our sample period. *RepScore1* is the sum of (1 if *ACSI* is greater than the industry average, *BestCompanies*, *MW**-1, *Comments**-1, *Restatements**-1). *RepScore2* is the sum of (1 if *ACSI* is greater than the industry average, *BestCompanies*, *Comments**-1, *Restatements**-1). *ACSI* is firm's average score on the American Customer Satisfaction Index. *BestCompanies* is the number of years firm is on Fortune's list of "Best Companies to Work For". *MW* is an indicator variable equal to one if firm disclosed a material weakness. *Comments* is an indicator variable equal to one if firm received an SEC comment letter. *Restatements* is the number of financial restatements. *Inst* is institutional ownership. *Num* is number of analysts following. *Disp* is analyst forecast dispersion. *M/B* is market to book. *Size* is the natural log of market value. Industry and year fixed effects indicating the year in which a firm begins forecasting are included. Coefficients marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed test. Robust standard errors in parentheses.

Table 4 Guidance Frequency and Guidance Properties

Variable	Mean	Median	Min	Max	Std Dev	Difference in Means
Error						
FreqQuintile1	0.043	0.005	0.000	3.422	0.249	
FreqQuintile2	0.021	0.003	0.000	1.494	0.112	
FreqQuintile3	0.011	0.004	0.000	0.469	0.032	
FreqQuintile4	0.007	0.003	0.000	0.191	0.015	
FreqQuintile5	0.007	0.003	0.000	0.138	0.014	p<0.01
Specificity						
FreqQuintile1	2.648	3.000	1.000	4.000	1.027	
FreqQuintile2	2.705	3.000	1.000	4.000	0.695	
FreqQuintile3	2.846	3.000	1.000	4.000	0.530	
FreqQuintile4	2.989	3.000	1.071	4.000	0.394	
FreqQuintile5	3.046	3.000	1.583	4.000	0.282	p<0.01
Horizon						
FreqQuintile1	35.978	17.500	0.000	389.000	51.406	
FreqQuintile2	43.833	34.667	0.000	312.000	43.689	
FreqQuintile3	53.644	45.071	0.000	333.000	42.140	
FreqQuintile4	57.962	52.675	1.000	326.462	34.912	
FreqQuintile5	55.109	55.636	8.000	227.800	19.832	p<0.01
Bias						
FreqQuintile1	0.036	0.002	-0.059	3.422	0.245	
FreqQuintile2	0.001	0.001	-0.535	0.208	0.047	
FreqQuintile3	0.005	0.001	-0.054	0.469	0.030	
FreqQuintile4	0.003	0.001	-0.071	0.191	0.013	
FreqQuintile5	0.002	0.000	-0.045	0.101	0.009	p<0.01
PosNeg						
FreqQuintile1	0.028	0.000	0.000	1.000	0.167	
FreqQuintile2	0.109	0.000	0.000	1.000	0.282	
FreqQuintile3	0.347	0.000	0.000	4.000	0.639	
FreqQuintile4	0.387	0.200	0.000	4.000	0.589	
FreqQuintile5	0.509	0.333	0.000	6.000	0.702	p<0.01

The sample consists of 1,501 firms between 1995 and 2005. *Frequency* is the number of quarters in which a firm has issued quarterly guidance, divided by the number of quarters since their first guidance issuance to the end of our sample period. *FreqQuintile* is the quintile rank of guidance frequency. Descriptive statistics are reported at the firm level using firm averages over the 11-year sample period. See Appendix for other variable definitions. The last column presents p-values based on two-tailed tests comparing the difference in means between *FreqQuintile1* and *FreqQuintile5*.

Table 5 Guidance Frequency and Guidance Properties: 2SLS

	Error	Specificity	Horizon	Bias	PosNeg
Frequency	-0.010***	0.876***	0.080***	-0.010***	0.495***
	(0.003)	(0.179)	(0.029)	(0.004)	(0.169)
MBAnalyst	-0.000	0.019	0.007	-0.004**	0.248**
	(0.002)	(0.103)	(0.017)	(0.002)	(0.113)
HighTech	-0.000	0.051	-0.026**	0.001	-0.051
	(0.001)	(0.067)	(0.011)	(0.001)	(0.062)
AnnRet	0.004**	0.024	0.053***	0.007***	0.196*
	(0.002)	(0.101)	(0.016)	(0.002)	(0.111)
Loss	0.001	-0.203	0.075***	-0.006***	-0.197
	(0.002)	(0.130)	(0.021)	(0.002)	(0.136)
RetVol	0.052***	-0.357	-0.035	0.009	0.842
	(0.010)	(0.538)	(0.087)	(0.010)	(0.587)
EarnVol	-0.000	0.014**	0.000	-0.000	-0.015
	(0.000)	(0.007)	(0.001)	(0.000)	(0.070)
P/E	0.000*	-0.001*	0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cons	-0.009**	0.106	-0.027	0.004	-0.853**
	(0.004)	(0.241)	(0.039)	(0.004)	(0.420)
Segments	0.000	-0.006	0.000	-0.000	0.011**
	(0.000)	(0.005)	(0.001)	(0.000)	(0.005)
Beta	-0.000	-0.042	-0.005	-0.000	-0.018
	(0.001)	(0.028)	(0.004)	(0.001)	(0.028)
Constant	0.002	2.780***	0.093***	0.008***	-0.114
	(0.002)	(0.090)	(0.015)	(0.002)	(0.102)
R-squared	0.082	0.034	0.050	0.022	0.080

This table presents 2SLS tests of the association between guidance frequency and guidance properties. The sample consists of 1,501 firms between 1995 and 2005. The IV specification uses the predicted value from regressing *Frequency* on *RepScore1, Inst, Num, Disp, M/B, and Size* with year fixed effects indicating the first year in which a firm begins forecasting in the first-stage as an instrumental variable for *Frequency* in the second-stage regressions. The results in the table reflect the second-stage regressions. See Appendix for variable definitions. *Horizon* is divided by 365 for expositional purposes. Coefficients marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed test. Robust standard errors in parentheses.

Table 6 Heckman Two-Stage Estimation of the Trends in Guidance Properties

	Error	Specificity	Horizon	Bias
Sequence	-0.001***	0.006***	0.543***	-0.001***
	(0.000)	(0.002)	(0.087)	(0.000)
Size	0.001**	-0.019**	-0.781	0.001***
	(0.000)	(0.009)	(0.494)	(0.000)
AnnRet	0.001**	0.044***	3.166***	0.001
	(0.001)	(0.016)	(0.919)	(0.001)
Loss	0.001***	-0.112***	0.769	0.001**
	(0.001)	(0.027)	(1.597)	(0.000)
RetVol	0.005	-0.503***	-37.713***	-0.007*
	(0.005)	(0.194)	(10.116)	(0.004)
EarnVol	0.001	0.038	4.835	-0.007
	(0.003)	(0.150)	(14.461)	(0.005)
M/B	0.000	-0.000*	-0.001	0.000
	(0.000)	(0.000)	(0.001)	(0.000)
P/E	0.000	-0.000	0.003	0.000
	(0.000)	(0.000)	(0.002)	(0.000)
Cons	-0.002	-0.134	-4.590	-0.000
	(0.002)	(0.102)	(6.429)	(0.002)
Beta	-0.000	0.001	0.604	0.000
	(0.000)	(0.008)	(0.398)	(0.000)
Inst	0.001	0.127*	1.014	0.002*
	(0.001)	(0.071)	(3.696)	(0.001)
Disp	0.338***	-7.410**	-54.175	0.022
	(0.081)	(3.510)	(131.701)	(0.140)
InvMills	0.005***	-0.191***	-2.712	0.003***
	(0.001)	(0.064)	(3.288)	(0.001)
Observations	8445	9308	9308	8445
R-squared	0.160	0.111	0.148	0.164

The Heckman procedure consists of a first-stage probit estimation of the likelihood of guidance occurrence and a second-stage OLS estimation of the effect of guidance sequence on guidance properties. The results in the table reflect the second-stage regressions. Industry and quarter fixed effects are included. See Appendix for variable definitions. *Horizon* is divided by 365 for expositional purposes. Coefficients marked with a *, **, or *** are significant at p< .10, .05, or .01, respectively, using a two-tailed test. Robust standard errors in parentheses.

Appendix: Variable Definitions

Frequency	Number of quarters in which a firm has issued quarterly guidance, divided by the number of quarters since their first guidance issuance to the end of our sample period, as reported on the First Call CIG file.
FreqQuintile	Quintile rank of Frequency.
Forecasts	Number of forecasts a firm issued during the sample period.
Sequence	Ordinal sequence of guidance issuances during the sample period.
Guidance Properties	
Error	Absolute difference between actual EPS and management guidance, scaled by beginning assets-per-share.
Specificity	Ordinal variable for guidance specificity where point, range, open-ended, and qualitative guidance are coded as 4, 3, 2, and 1, respectively.
Horizon	Number of days between management guidance issuance date and end of fiscal quarter.
Bias	Guidance minus actual EPS, scaled by beginning assets-per-share. A positive (negative) value indicates management optimism (pessimism).
PosNeg	Ratio of positive to negative guidance issuances during the sample period.
Reputation Variables	
BestCompanies	Reputation among employees proxied by the number of years a firm is listed on the Fortune "100 Best Places to Work For" list from 1998 to 2005.
ACSI	Reputation among customers proxied by a firm's average score on the American Customer Satisfaction Index from 1995 to 2005.
MW	Indicator variable coded as 1 if firm disclosed a material internal control weakness from August 2002 to October 2005, 0 otherwise.
Comments	Indicator variable coded as 1 if firm received a comment letter from the Securities Exchange Commission (SEC) in 2004 and 2005, 0 otherwise.
Restatements	Number of financial statement restatements as reported on AuditAnalytics during sample period.
RepScore1	Sum of (1 if ACSI greater than industry average, BestCompanies, MW*-1, Comments*-1, Restatements*-1)
RepScore2	Sum of (1 if ACSI greater than industry average, BestCompanies, Comments*-1, Restatements*-1)
Inst	Percentage of common shares owned by institutional investors in quarter t.
Num	Number of analysts following prior to guidance issuance in quarter t, or number of analysts following the firm at the end of the quarter for non-guidance quarters, as reported on IBES.
Disp	Standard deviation of analysts' forecasts prior to guidance issuance in quarter t, or standard deviation of analysts' forecasts at the end of the quarter for non-guidance quarters.
M/B	Market to book in quarter t.
Size	Logged market value of equity in quarter t.

Control Variables	
MBAnalyst	Indicator variable coded as 1 if firm meets or beats analysts' prevailing consensus forecasts in quarter t-1.
HighTech	Indicator variable coded as 1 if firm is in the biotech, retailing, electronics, or computer industry in quarter t, and zero otherwise.
AnnRet	Market-adjusted buy-and-hold twelve-month returns in quarter t-1.
Loss	Indicator variable coded as 1 if firm reports a loss in quarter t, 0 otherwise.
RetVol	Standard deviation of twelve-month returns in quarter t.
EarnVol	Standard deviation of seasonally-adjusted quarterly earnings over 12 quarters ending in quarter t, divided by median assets over the 12 quarters.
P/E	Price to earnings in quarter t.
Cons	Financial reporting conservatism proxied by total accruals scaled by total assets in year t-1.
Segments	Number of business segments in quarter t.
Beta	Equity beta in quarter t.