Management Earnings Forecasts and Other Forward-Looking Statements

Zahn Bozanic, Darren T. Roulstone, and Andrew Van Buskirk[1]

The Ohio State University
Fisher College of Business
2100 Neil Avenue
Columbus, OH 43210

May 2015

Abstract

Although management earnings forecasts have been the overwhelming focus of prior research on forward-looking disclosure, they represent only a small fraction of forward-looking statements made by managers. Using textual analysis, we show that the vast majority of forward-looking statements are *not* quantitative statements about earnings. These "other" forward-looking statements are consequential, and result in significant investor and analyst response. Moreover, the decision to issue these other forward-looking statements differs from the decision to issue the typically-studied earnings forecast. While managers issue fewer quantitative, earnings-related forward-looking statements (traditional earnings forecasts) during periods of high uncertainty, the opposite is true for other forward-looking statements (i.e., projections that are either non-quantitative, non-earnings related, or both). We investigate explanations for this behavior and conclude that managers value the controllability of forward-looking statements more than they fear their verifiability. Overall, our results indicate that other forward-looking statements represent an important and under-studied component of firm disclosures, and are distinct from traditional earnings forecasts.

[1] Corresponding author: van-buskirk.10@osu.edu

We thank Amy Hutton, Feng Li, Dawn Matsumoto, Greg Miller, Miguel Minutti-Meza, Volkan Muslu, DJ Nanda, Terry Shevlin, Siew Hong Teoh, Jenny Tucker, workshop participants at Florida State University, George Mason University, Indiana University, University of California – Davis, University of California – Irvine, University of Miami, University of Michigan, University of Minnesota, University of Washington, University of Wisconsin, and conference participants at the 2012 McMaster Accounting Research Symposium and 2013 AAA FARS Midyear Meeting for helpful comments and suggestions.

"…a key unanswered question is whether firms identified by prior studies…as 'less forthcoming' disclosers are truly silent about their future operations or whether they use disclosure mechanisms that prior research has overlooked." [Li (2013)]

1. Introduction

For several decades, management earnings forecasts have been the focus of significant academic interest. Initially, that interest was driven by the concern that forecasts were not credible – so much so that firms were prohibited by the SEC from providing such forecasts in their securities filings.[1] Following substantial evidence that investors do respond to earnings forecasts (e.g., Patell 1976; Waymire 1984; Baginski et al. 1994; Hutton et al. 2003; Rogers and Stocken 2005), that view has changed considerably. In fact, more recent research has shown that management forecasts provide more information to investors than any other accounting source (Beyer et al. 2010).

The idea that forecasts convey information overshadows another inference from the forecasting literature: issuing earnings forecasts does not seem to be a very common practice. For example, Rogers and Van Buskirk (2013) use First Call's CIG database and find that only 18% of earnings announcements are accompanied by earnings forecasts of any type of the 1995-2007 period, while Ball and Shivakumar (2008) report that less than 10% of non-earnings periods from 1994-2006 include earnings forecasts. Beyer et al. (2010) report that only 29% of the Compustat/CRSP population issues even a single management earnings forecast for the 1994-2007 period. And in a study of 115,751 firm-years from the U.S. and Canada during 1993-1996, Baginski et al. (2002) document a forecast rate of only 1.2%.[2]

[1] See Cholakis (1999) for the history of the SEC's views regarding corporate projections.

[2] There are many reasons for why the forecast rate documented in existing research may be understated: forecasts are discarded because of research design choices; privately-issued forecasts are unobserved prior to Regulation FD; and First Call's CIG database is not comprehensive. However, in a study designed to overcome some of these

The seemingly infrequent nature of management forecasts is at odds with the casual observation that most firms regularly provide information about the future. In some cases, this prospective information takes the form of quantitative earnings projections – the type of forecast typically studied in prior research. In other cases, the information is qualitative or relates to other (non-earnings) metrics, such as order backlog or expected store openings. Although qualitative statements and projections of these "non-earnings" metrics can inform investors about future earnings, such statements are typically excluded from research focusing on earnings forecasts.[3,4] And while prior literature tells us a great deal about quantitative earnings forecasts, we know relatively little about these other forward-looking statements, or why managers choose to issue one type of statement rather than another. What little we do know suggests that the decision to issue quantitative earnings forecasts is very different from the decision to issue other forward-looking information (Wasley and Wu 2006; Lu and Tucker 2012).

In this paper, we use textual analysis to examine forward-looking statements – both the quantitative estimates of future earnings that are typically treated as forecasts in disclosure research and those qualitative and/or non-earnings statements often overlooked in disclosure research. Our more inclusive definition of forward-looking statements (relative to the definition of earnings forecasts typically employed in disclosure research) is consistent with the views of CFOs interviewed by Graham et al. (2005): "CFOs view earnings guidance broadly to include

---

issues, Kile et al. (1998) report that only 39% to 52% of sample firms provide any type of prospective disclosure in a given year.

[3] Labeling these alternative metrics as "non-earnings" may seem somewhat arbitrary. We readily acknowledge that predictions of things like revenues, store openings, and product introductions will guide investors in estimating future earnings. The point of our study, though, is that this treatment of alternative metrics as non-earnings is pervasive in the existing literature; any study that identifies forecasting and non-forecasting firms based on whether or not they issue earnings forecasts is implicitly assuming that only earnings forecasts are informative about future earnings. Section 3.3 discusses this issue in greater detail and Appendix B provides examples of earnings-related and non-earnings projections in our sample.

[4] Baginski et al. (2014) state that "the predominance of research on forward-looking press releases omits nonearnings, forward-looking disclosures from the analysis and thus does not capture a potentially important set of voluntary disclosures.

quantitative data such as management forecasts of earnings as well as qualitative statements about the outlook of the firm in coming quarters" (p. 42).

We address several questions related to the different types of forward-looking statements, starting with the question of whether, like earnings forecasts, "other" forward-looking statements are consequential in terms of affecting investor and analyst beliefs. We then focus on managers' decisions to issue different types of forward-looking statements. Here, we begin by asking whether the decision to issue quantitative earnings forecasts is distinct from the decision to issue other forward-looking statements.[5] Next, we build on prior research that finds a negative relation between investor uncertainty and earnings forecast issuance (Waymire 1985; Field et al. 2005). We extend this research by examining whether managers uniformly issue less forward-looking information when uncertainty is high or whether uncertainty *differentially* influences the decision to disclosure one type of forward-looking information versus another. We view this set of questions as important, given that prior research demonstrates that managers may issue different types of forward-looking information in different contexts.[6]

Finally, we use observed disclosure choices to infer *why* managers are reluctant to issue quantitative earnings forecasts when uncertainty is high. We know from prior research that managers fear the costs of unattained projections (Waymire 1985; Graham et al. 2005). Our question is how that fear manifests in specific disclosure choices. Starting with the premise that

[5] One way to think about this question is to ask whether managers view these statements as complements to, substitutes for, or independent of quantitative earnings forecasts. Houston et al. (2010) ask a similar question for a sample of 100 previously forecasting firms that stopped forecasting. Specifically, they ask whether those firms replace quantitative earnings forecasts with other forward-looking information and find no evidence of substitution – a result they characterize as "sobering". Our approach differs from Houston et al. (and similar papers) because we examine disclosure behavior for both traditional forecasting firms and the substantial majority of firms that do not issue quantitative earnings forecasts. Rather than excluding non-forecasting firms, as prior research does, our sample comprises primarily those firms.

[6] This research generally studies small, targeted samples of firms (such as Kasznik and Lev 1995, who study firms with extreme earnings changes) and/or subsets of forward-looking disclosures (such as Wasley and Wu 2006, who study cash flow forecasts, or Lu and Tucker 2012, who study capital expenditure and strategic plan disclosure). We discuss this research in Section 2.

earnings forecasts are typically identified based on two attributes – they are both quantitative and earnings-related – we examine whether one attribute plays a larger role in deterring managers from issuing forecasts when uncertainty is high. In doing so, we test whether managers are more concerned about the *ex post* verifiability of their projections (in which case they would be reluctant to issue any type of quantitative/verifiable projection, but more willing to make qualitative projections) or whether they are more concerned with the *controllability* of the forecasted item (in which case they would be willing to make verifiable projections about, say, new store openings, but would make no prospective statements about earnings, verifiable or not).

To answer these questions, we analyze forward-looking statements disclosed in quarterly earnings announcements (where earnings forecasts are typically issued) from 2004-2014. Specifically, we follow Li (2010) in using keyword-based textual analysis to identify forward-looking statements, and exclude those statements that are likely to be boilerplate. We classify forward-looking statements along the two dimensions that have traditionally defined earnings forecasts: whether the statements refer to earnings (e.g., using such terms as "earnings" or "profits") and whether or not the statements are quantitative.[7] We assess the importance of forward-looking statements by measuring their association with earnings-period stock returns, as well as their association with analyst estimate revisions around the earnings announcement. We then draw inferences about managers' disclosure decisions based on how their disclosures change as a function of uncertainty.

As a prelude to our results, we note that managers disclose forward-looking information far more frequently than the existing forecast literature would suggest. To illustrate, 75% of the earnings announcements in our sample contain at least 5 forward-looking sentences, but only 37% of our earnings announcements are identified by I/B/E/S as including an earnings

[7] We perform extensive validation tests of our text-based classification, and discuss those tests in Section 3.4.

announcement. Moreover, most forward-looking statements do not refer to earnings, nor do they include numbers: the average earnings announcement in our sample includes about 5.2 non-earnings forward-looking statements for every earnings-related forward-looking statement and about 4.5 non-quantitative forward-looking statements for every quantitative forward-looking statement.

Turning to our primary research questions, our results indicate that much of what we know from the management forecast literature does not extend to the larger set of other forward-looking statements. First, we find that these statements are consequential: earnings announcements with a greater proportion of "other" forward-looking statements experience greater absolute stock returns during the earnings period as well as sharper improvements in the accuracy of analyst earnings estimates. Importantly, these results hold even when controlling for the extent of quantitative earnings statements; the information in other forward-looking statements is not subsumed by the information in quantitative earnings forecasts.

Regarding the disclosure choice, we find that the decision to issue quantitative earnings forecasts is independent of the decision to issue other forward-looking statements. Forecasting firms (identified by the I/B/E/S guidance database) issue more forward-looking statements in total, but the difference is driven by quantitative and earnings-related statements. There is no statistically significant difference in either non-earnings forward-looking statements or non-quantitative forward-looking statements (which, again, make up the majority of all forward-looking statements).

In terms of uncertainty, we find (similar to the results in Waymire 1985) a strong negative relation between uncertainty and the issuance of quantitative earnings forecasts. However, consistent with sentiments expressed by Matsumoto et al. 2011 ("…the lack of

earnings guidance when performance is poor is not due to a lack of future-oriented discussion"), we find the opposite for all other forward-looking statements (i.e., statements that are either qualitative, non-earnings related, or both); managers are more likely to issue these kinds of statements when uncertainty is higher. This increased disclosure in the face of greater uncertainty would be overlooked in the typical disclosure study.

As for our final research question regarding why uncertainty inhibits managers from issuing quantitative earnings forecasts, we show that uncertainty has a small differential effect on the decision to issue *quantitative* earnings-related statements versus *non-quantitative* earnings-related statements. Higher uncertainty leads to fewer quantitative statements about earnings *and* fewer non-quantitative statements, with the decrease being slightly smaller for non-quantitative statements than for quantitative statements.[8] Thus, there is only weak evidence that managers refrain from forecasting out of a fear of being held accountable for verifiable statements.[9] In contrast, the effect of uncertainty is strikingly different for *earnings-related* statements relative to *non-earnings* statements. Specifically, we find a consistently negative association between uncertainty and quantitative earnings-related statements, but a generally positive association between uncertainty and quantitative non-earnings statements. The relative effect of uncertainty is significantly more negative for each of the five uncertainty proxies we use (at the $p<0.05$ level). Unlike the weak evidence for the verifiability hypothesis, these results provide strong support for the controllability hypothesis. Overall, managers seem to fear being held accountable for outcomes that are less controllable rather than for projections that are more verifiable *ex post*.

[8] In statistical terms, the differential effect is significant at the $p<0.10$ level for only two of the five uncertainty proxies we examine.

[9] The weak evidence is, however, consistent with Bamber and Cheon (1998), who show that managers issue less precise forecasts as uncertainty increases.

Our paper makes several contributions to the existing disclosure literature. First, we show that managers issue more forward-looking information than prior studies would suggest. The often-ignored "other" forward-looking information is consequential, influencing both investor and analyst beliefs about firm value. We also show that the decision to issue to issue quantitative earnings forecasts is largely independent of the decision to issue other forward-looking information. This result bolsters concern expressed in prior studies (e.g., Skinner 1994; Kile et al. 1998; Hirst et al. 2008) that a focus on quantitative earnings forecasts can mask firms' overall level of voluntary disclosure. For example, Skinner (1994) notes that "by limiting their samples to point or range forecasts of annual EPS, some previous papers appear to have excluded an important subset of all voluntary disclosures, specifically qualitative disclosures".

Finally, we note that researchers often use the disclosure of quantitative earnings forecasts as a summary proxy for a firm's overall voluntary disclosure practices, or as a way to distinguish consequential disclosures from less consequential disclosures.[10] Our results indicate that using earnings forecasts as summary disclosure proxy is inappropriate, particularly when there is variation in uncertainty across firms or time. Our study suggests that focusing on quantitative earnings forecasts will lead researchers to undercount forward-looking disclosures made by firms in uncertain environments, and to misestimate changes in aggregate disclosure levels around shocks to uncertainty (e.g., examining disclosure changes after a lawsuit or restatement).

[10] There are countless examples. Billings and Cedergren (2015) use the presence or absence of earnings forecasts to identify managers who stay silent ahead of earnings disappointments. Yang (2012) uses earnings forecasts to study manager-specific voluntary disclosure style. Kwak et al. (2012) use earnings forecasts to study whether the composition of top management (including General Counsel) affects voluntary disclosure. Chen et al. (2008) use earnings forecasts to look at the voluntary disclosure practices of family firms. Rogers and Van Buskirk (2009) use the number of earnings forecasts (among other measures) to assess how firms change their disclosure practices after being sued by investors. Ajinkya et al. (2005) use the number and characteristics of earnings forecasts to study the effect of outside governance on voluntary disclosures. Soffer et al. (2000) study the preannouncement strategies of firms with good and bad earnings news. In each of these cases, First Call earnings forecasts were employed as the measure of voluntary forward-looking information.

2. Prior research, hypothesis development, and research design

2.1. Capital market response to forward-looking statements

A long history of forecasting literature shows that stock prices respond to the information conveyed in management earnings forecasts (e.g., Patell 1976; Penman 1980; Beyer et al. 2010). Similarly, there is substantial evidence that analysts respond to management forecasts by revising their estimates of future earnings (e.g., Waymire 1986; Jennings 1987; Cotter et al. 2006). These and similar studies focus almost exclusively on quantitative earnings forecasts.

Our question is whether other forward-looking statements generate similar reactions. On one hand, qualitative and non-earnings forward-looking information can convey meaningful information that investors can use to assess firm value (e.g., Li 2010). On the other hand, existing research suggests that investors and analysts may be less willing to rely upon forecasts that are viewed as less credible or less precise. For example, Hutton et al. (2003) show stronger market responses to bad news forecasts than good news forecasts and suggest that non-verifiable statements are less credible. Similarly, Bamber and Cheon (1998) find that more precise forecasts lead to stronger investor responses. In the extreme, investors may view other forward-looking statements as non-verifiable and/or not precise, and assign very little weight to those statements. Our first set of hypotheses follows:

H1A: Disclosures featuring more forward-looking statements, whether forecast-like or not, are associated with stronger price reactions.

H1B: Disclosures featuring more forward-looking statements, whether forecast-like or not, are associated with larger analyst revisions.

2.2. Relation between earnings forecasts and other forward-looking statements

We next focus on the determinants of managers' disclosure choices. King et al. (1990) frame the management forecast decision as occurring in three stages: the decision to voluntarily disclose interim information, the decision regarding the outlet for forecast disclosure (i.e., public vs. private disclosure), and tertiary choices about the "form, horizon, and timing of the disclosure." Our interest is in better understanding the first stage decision – and how that decision differs for different types of forward-looking statements. (The second-stage choice, private vs. public dissemination, is now less relevant after the passage of Regulation FD.)

Much of the existing forecast literature focuses on "tertiary choices" – attributes of quantitative earnings forecasts such as precision and horizon, mainly because there has been no systematic way to identify or measure the attributes of qualitative forecasts.[11] It is less common to study the first stage-decision of whether or not to provide some type of forward-looking information. The papers that do look at this decision tend to focus solely on quantitative earnings forecasts or examine a narrow setting. Clarkson et al. (1992) study earnings forecasts included in IPO prospectuses for 121 firms listing on the Toronto Stock Exchange. Clarkson et al. (1994) study earnings forecasts disclosed in the MD&A section of annual reports for 905 firm years covering roughly 300 TSE firms from 1989-1991. More recently, Billings et al. (2014) and Billings and Cedergren (2015) study the decision to issue quantitative earnings forecasts when pre-earnings uncertainty level are high and in the context of insider selling.

It is no accident that quantitative earnings forecasts dominate the existing literature; such forecasts are easy to search for using services like Factiva or the Dow Jones News Retrieval Service and, more recently, have been available in machine-readable form from services like First Call and I/B/E/S. While some researchers have looked beyond earnings forecasts, they

[11] First Call's CIG database, the common source of forecast data in recent years, illustrates the bias towards quantitative earnings forecasts. The database ostensibly includes both qualitative and quantitative management earnings forecasts. However, fewer than 5% of post-Regulation FD forecasts in the database are qualitative.

have tended to do so in small settings chosen for a particular research question. Moreover, studies of this type often start with a sample of firms that issue earnings forecasts and then look for other types of disclosures issued by those firms, saying little about the firms that do not issue earnings forecasts.

Our question is how the disclosure of quantitative earnings statements relates to the disclosure of other prospective statements. In doing so, we share the sentiments of Li (2013), who notes that "a key unanswered question is whether firms identified by prior studies […] as 'less forthcoming' disclosers are truly silent about their future operations or whether they use disclosure mechanisms that prior research has overlooked" (p. 1770).

Prior research provides no clear evidence on whether these "other" forward-looking statements are likely to be complements or substitutes for traditional earnings forecasts. On one hand, disclosure choices within a firm tend to be correlated, which would suggest that firms issuing more of one disclosure type will issue more of the other (e.g., Table 3 in Botosan and Plumlee 2002). Moreover, many research studies implicitly assume that these disclosure choices are highly correlated; they use disclosures featuring earnings forecasts to represent consequential disclosures.

On the other hand, there is reason to believe that quantitative earnings statements and other forward-looking statements would be issued in different environments or for different reasons. Kasznik and Lev (1995) find that warnings are more likely to be quantitative and earnings-related when the expectations gap is larger. Wasley and Wu (2006) conclude that different incentives (e.g., litigation risk) drive the decision to provide earnings forecasts compared to cash flow forecasts. Similarly, Lu and Tucker (2012) determine that different incentives lie behind capital expenditure and strategic plan disclosures relative to quantitative

earnings forecasts. We therefore make no directional prediction for our second hypothesis, which we state in the null as:

H2: Forecasting firms issue the same amount of "non-forecast" forward-looking statements as non-forecasting firms.

2.3. Uncertainty and the decision to issue forward-looking information

The decision to issue a particular disclosure is a function of both supply and demand. One can find many examples in prior research where managers seem to be responding to investor demand for more information: managers issue forecasts when investors have inaccurate beliefs (Ajinkya and Gift 1984) or when information asymmetry among investors is high (Coller and Yohn 1997). Wasley and Wu (2006) conclude that managers are more likely to issue cash flow forecasts when reported earnings are uninformative.

At the same time, a robust finding in existing disclosure research is that firms tend to issue fewer forecasts when uncertainty is high (e.g., Waymire 1985; Karamanou and Vafeas 2005). This finding suggests that managers, perhaps because they are also uncertain about future earnings, tend to remain silent even when investors would like more information. Hollander et al. (2010) provide vivid evidence of this phenomenon by showing that managers regularly withhold requested information in conference calls, in some cases as directly as responding, "No, we do not want to provide that information." In short, managers may view it most costly to issue forward-looking information at precisely those times when investors find that information to be most valuable.

Overall, the existing literature provides many reasons for both disclosure and non-disclosure of forward-looking information when uncertainty is high, but the bulk of this literature

is limited to quantitative earnings forecasts. We extend this question to other forward-looking statements, where the predicted relation is less clear, and present our hypothesis in the null form:

H3: Uncertainty has the same effect on the decision to issue quantitative earnings statements as the decision to issue other forward-looking statements.

2.4. Factors deterring managers from issuing forecasts when uncertainty is high

Our final question is why managers are reluctant to issue quantitative earnings statements (i.e., traditional earnings forecasts) when uncertainty is high. Survey evidence in Graham et al. (2005) reveals that managers fear the cost of unattained projections, either because of career concerns or because the missed projection will lead to interrogation from analysts. In light of these concerns, there are at least two reasons why managers would refrain specifically from issuing quantitative earnings forecasts in the face of uncertainty. The first is controllability: a firm's net income is less controllable than alternative metrics like capital expenditures or gross margins. The second is verifiability: a quantitative projection can be more easily evaluated *ex post*, relative to a qualitative statement like "earnings growth will be strong". We ask whether it is the quantitative nature (which makes projections subject to *ex post* verification) or the earnings-related nature (which makes projections less controllable) that plays a larger role in deterring quantitative earnings forecasts when uncertainty is high. Our final hypothesis, stated in the null form, is:

H4: Controllability and verifiability are equally important in discouraging managers from issuing forward-looking information when uncertainty is high.

2.5. Forward-looking statements and textual analysis

Recent advances in computing and electronic disclosure have allowed accounting researchers to examine qualitative disclosure in a systematic and large-scale manner by

employing tools from computational linguistics. Li (2010) and Muslu et al. (2014), both of which use textual analysis to identify and study forward-looking disclosures in annual report MD&As, are most relevant to our study. In addition to examining the determinants of tone of forward-looking statements, Li finds a positive association between the tone of forward-looking statements and future earnings.

In contrast to Li, Muslu et al. examine the quantity of forward-looking statements rather than their tone. They find that firms with poor information environments provide more forward-looking disclosures via their MD&As, which helps investors anticipate future earnings. Our study differs from these earlier studies in that we focus on the choice to issue forward-looking statements and, in particular, how that choice differs for quantitative, earnings-related statements compared to other forward-looking statements. (Section 3.2 describes how we measure forward-looking disclosure.)

3. Sample selection, measurement, and validation of forward-looking, earnings-related, and quantitative statements

3.1. Sample selection

We examine quarterly earnings announcements from 2004 (when earnings announcements were first made electronically available via 8-K filings from EDGAR) through 2014. We focus on earnings announcements for two reasons. First, the vast majority of earnings forecasts are issued in conjunction with earnings announcements (Rogers and Van Buskirk 2013). Second, earnings announcements are regular, planned disclosure events that occur regardless of underlying economic events. As a consequence, the choice to disclose/withhold forward-looking information in an earnings announcement is more likely to be driven by

managerial preference than by the availability of new information or occurrence of a major event.[12]

Our sample starts with quarterly earnings announcements as reported on Compustat. We require that each observation has at least one analyst estimate for the current period's earnings and an actual earnings value reported by I/B/E/S. We also require that each earnings announcement has available market data from CRSP and financial statement information from Compustat prior to the announcement date.

For each earnings announcement, we obtain the corresponding 8-K filing from the SEC's EDGAR database. We identify earnings announcement 8-Ks based on the 8-K classification and its filing date. We retain only those 8-K press releases classified as Results of Operations and Financial Condition and filed within five days of the earnings announcement date. After requiring that both the current announcement and the prior quarter's announcement have available 8-K filings, we are left with 67,276 quarterly earnings announcements from 2004-2014.[13] Table 1 shows the annual distribution of these announcements.

Table 1 also shows the earnings announcements for which the I/B/E/S guidance database (the successor to the commonly-used First Call database) records a management earnings forecast within 1 day of the earnings announcement date. These forecasts include point, range, open-ended and qualitative forecasts of various horizons, although the majority of I/B/E/S forecasts are quantitative – either point or range.[14] Of the 67,276 earnings announcements in our

[12] An alternative method would be to compare quarters in which firms provided forecasts to quarters in which they did not, as in Rogers and Van Buskirk (2009). The downside of this method is that forecasts may be issued in response to some major event (like the earnings forecasts issued after the 9/11/2001 terrorist attacks), in which case observed forecasting behavior would be more a function of the underlying economics than a reflection of the manager's disclosure preferences.

[13] We require that the prior earnings announcement has an available filing because we control for lagged disclosure behavior in many of our tests.

[14] As Chuk et al. (2013) note, the First Call CIG database (the discontinued predecessor database to the I/B/E/S database we use) is more likely to capture earnings forecasts that are for specific dollar amounts. The First Call

initial sample, 24,690 (37%) were issued in conjunction with a management earnings forecast captured by I/B/E/S. The 67,276 earnings announcements were issued by 4,476 unique firms; 2,385 of those firms have no I/B/E/S management earnings announcement-period forecasts in the entire sample, and would typically be described as "non-forecasters".

Table 2, Panel A provides descriptive statistics for the firms/earnings announcements in our sample. Due to the requirement that firms have I/B/E/S coverage, our sample is biased towards larger firms; the median market value is roughly $1.2 billion, while the median analyst coverage is 4. The number of observations differs across variables due to data availability, with the largest drops in sample size coming from earnings volatility (requiring 12 prior quarters of reported earnings), analyst dispersion (requiring at least two analyst estimates), and implied volatility (requiring publicly traded options).

As noted earlier, a minority of earnings announcements (37%) are issued with management earnings forecasts (as identified by I/B/E/S), which suggests that providing forward-looking disclosures is relatively limited. Whether that extends to other types of forward-looking statements is one of the questions that we address.

3.2. Classifying statements using textual analysis

We use the Perl programming language to analyze the text of the 8-K filings on a sentence-by-sentence basis. After removing boilerplate language, such as that attributable to Safe Harbor statements, we classify sentences in an earnings announcement as forward-looking sentences (FLS) if they include at least one forward-looking term, such as "anticipate", "forecast", or "expect". Our approach follows Li (2010) in both identifying boilerplate language

---

focus on quantitative earnings forecasts (and pervasive academic use of the First Call database) underlies our central claim that qualitative and non-earnings projections have been relatively understudied.

and in constructing our list of forward-looking terms to identify forward-looking statements. (Specifically, see Appendix B of Li 2010.) We then classify each forward-looking statement along two dimensions: whether that statement is earnings-related and whether that statement is quantitative.

We classify each forward-looking statement as either earnings-related or non-earnings related using search words commonly used by researchers who have manually collected earnings forecasts from sources like Dow Jones News Retrieval Service (Jennings 1987; Pownall et al. 1993; Skinner 1994). A forward-looking statement is identified as earnings-related if it includes words such as "earnings", "income", "loss", or "profit". A forward-looking statement that does not contain at least one of the earnings-related terms is considered a non-earnings related forward-looking statement. The complete list of forward-looking and earnings-related terms is presented in Appendix A. Appendix B provides examples of earnings-related and non-earnings-related forward-looking statements from our sample.

We also classify each forward-looking statement as either quantitative or non-quantitative. Because we are primarily interested in numbers that reflect financial information, we follow a targeted approach. A sentence is identified as quantitative if it includes words such as "dollars", "thousands", or "millions", or numbers followed by scale abbreviations (e.g., $10M or $5B). A sentence is also classified as quantitative if there are any references to U.S. currency (i.e., "$") or percentages (the word "percent" or the symbol "%"). A forward-looking statement that does not contain at least one of the quantitative terms is considered a non-quantitative forward-looking statement.[15]

[15] An alternative approach would be to consider any number within a sentence as quantitative. However, this approach would capture such numbers as dates, telephone numbers, and street addresses that would generally be viewed as qualitative, especially in a financial context.

The earnings-related statements are easy to characterize – similar to the traditional notion of a management forecast, they refer explicitly to the net profits of the firm. The non-earnings statements, which make up the majority of forward-looking statements in our sample, are more diverse. In some cases, they refer to common metrics like revenue, taxes, margins, or capital expenditures. In other cases, they refer to industry-specific or firm-specific items like FDA approval or expected product release dates.[16]

Table 2, Panel B summarizes the textual characteristics of the earnings announcements in our sample. Earnings announcements have an average of 76.7 sentences (after removing boilerplate language), of which 11.6 (14.3%) are classified as forward-looking. Most forward-looking statements do not refer explicitly to earnings (9.7 non-earnings compared to 1.9 earnings-related), and most are not quantitative (9.4 non-quantitative compared to 2.1 quantitative). Combining these two characteristics, only a small minority of forward-looking statements are both quantitative and earnings-related; earnings announcements have an average of just 0.6 earnings and quantitative statements compared to 11.0 "other" forward-looking statements. In summary, most forward-looking statements differ on at least one dimension from the quantitative earnings forecasts used in most empirical research.

3.3. The distinction between earnings-related and non-earnings-related forward-looking statements

[16] Because we follow Li (2010) in identifying forward-looking statements, we expect the distribution of our statements to be similar to that found in his sample of MD&A disclosures. Li classifies 30,000 forward-looking sentences from MD&A disclosures and reports the following: only 8.72% relate to profits; 62.81% refer to either revenues, costs, profits, or operations; 38.81% refer to liquidity, investing, or financing; and 13.70% refer to other items (e.g., litigation). Given the distribution reported in Li (2010), it isn't surprising that the bulk of our forward-looking statements do not refer explicitly to earnings. We also compared our non-earnings statements to the list of "financially oriented" words used by Matsumoto et al. (2011, Appendix A). About half of our non-earnings statements (55%) would be identified as financially-oriented using that word list.

Our study treats each forward-looking statement as if it can be neatly classified as either earnings-related or non-earnings-related (and similarly, quantitative or non-quantitative). This distinction is somewhat contrived – many "non-earnings" items projected by managers will have *some* effect on future earnings, and might therefore be thought of as earnings-related. For instance, forecasted shipments of coal and coal prices (one of our examples in Appendix B) are likely to be very relevant for analysts predicting future earnings of a coal mining firm, yet we classify that statement as "non-earnings" because it does not include an earnings term.

Our categorization scheme is not designed to distinguish between statements that are or are not informative about future earnings. Instead, our goal is to separately examine two groups of forward-looking statements: those that are typically identified as "forecasts" in empirical disclosure studies and those that are typically ignored. Our claim is that, by overwhelmingly focusing on statements that refer explicitly to earnings, prior research has largely overlooked a substantial amount of forward-looking information. An alternative way to characterize our "non-earnings" forward-looking statements is as "forward-looking statements that researchers do not typically treat as earnings forecasts."

Although our earnings-related word list is small, we believe it reflects the items traditionally used to identify earnings forecasts. Our list corresponds to the terms used by Jennings (1987), Pownall et al. (1993), Skinner (1994), and Chen et al. (2011).[17] Moreover, our list performs well in identifying forecasts included in the First Call CIG dataset typically used as a source of management earnings forecasts, which we test as follows. We arbitrarily selected 60 forecast records from the CIG dataset from January 2005 and read the relevant press release

[17] Some researchers have used an expanded list of terms in identifying forecasts (e.g., Hutton et al. 2003). However, Pownall et al. (1993) support the use of a concise list of earnings-related terms. They use "earnings", "income", and "profits", but note in footnote 3 that an expanded list of terms would not have generated a different sample of forecasters.

statement that contained each forecast. Of those 60 observations, 58 statements included at least one of our earnings terms; 1 statement referred to FFO (Funds From Operations, a measure used heavily by REITs and typically discarded in earnings forecast studies); and 1 statement presented a dollar amount without explicitly referring to it as an earnings per share figure in that sentence.

To summarize, our classification of earnings (non-earnings) forward-looking statements corresponds to the projections that have (have not) been studied in prior disclosure research. The next section provides further empirical validation of our classification.

3.4. Validating the output of our text classification

As discussed above, we characterize all forward-looking sentences along two dimensions, whether the sentence explicitly refers to earnings and whether the sentence is quantitative. Our claim is that prior research has largely focused on forward-looking statements that are both quantitative and explicitly refer to earnings. If our claim is correct and our classification scheme is effective, there should be a strong link between traditional earnings forecasts and the statements that we identify as quantitative and earnings-related, but not for other forward-looking statements.

We test this link by measuring how well our quantitative and earnings-related statements predict forecasts aggregated in the I/B/E/S earnings guidance dataset. We expect the following: First, disclosures with more forward-looking statements should be more likely to be recorded as earnings forecasts in the I/B/E/S database. Second, disclosures with more earnings-related forward-looking statements should be more likely to be recorded as earnings forecasts in the I/B/E/S database. Third, disclosures with more quantitative forward-looking statements should be more likely to be recorded as earnings forecasts in the I/B/E/S database. Finally, disclosures

with more statements that are both earnings-related *and* quantitative should be more likely to be recorded as earnings forecasts in the I/B/E/S database.

Table 3 provides evidence on these predictions. Each column of Table 3 shows the results of a probit regression where the binary dependent variable is a 1 for earnings announcements accompanied by an earnings forecast recorded in the I/B/E/S dataset, and 0 for all other earnings announcements. The independent variables are text-based measures based on the classification schemes discussed earlier. To account for cross-sectional and time-series correlation within industries, standard errors are clustered by industry (defined by 2-digit SIC).

The results of these regressions provide strong support for our classification scheme. Column 1 shows that when earnings announcements contain a larger proportion of forward-looking statements (FLS), I/B/E/S is more likely to show an associated earnings forecast. Column 2 shows that when we split the FLS into earnings-related and non-earnings FLS, only the earnings-related FLS predict an I/B/E/S forecast (z-stat of 6.9 for earnings-related FLS compared to a z-stat of 0.45 for non-earnings FLS). Column 3 shows that more quantitative FLS predict I/B/E/S forecasts (z-stat of 8.69), while non-quantitative FLS have no predictive ability (z-stat of 0.086). Column 4 combines the four text-based measures, and the results indicate that the earnings/non-earnings classification and the quantitative/non-quantitative classification are distinct predictors of an I/B/E/S forecast: earnings-related FLS and quantitative FLS continue to predict I/B/E/S forecasts at the $p<0.01$ level, while their complements have no predictive power.[18]

Finally, columns 5 and 6 show the results when we distinguish between forward-looking sentences that are both quantitative and earnings-related, and all "other" forward-looking

[18] We also note that, in Column 4, the coefficient on *% Earnings-Related FLS* is not statistically different from the coefficient on *% Quantitative FLS*. We interpret this as evidence that both attributes (quantitative and earnings-related) are comparable in terms of their importance in identifying earnings forecasts.

statements (i.e., those that are either non-earnings, non-quantitative, or both). The results are striking – the strongest determinant of an I/B/E/S-identified earnings forecast is the frequency of quantitative and earnings-related forward-looking statements (a z-stat of 23.58 and a pseudo R^2 of 0.14, more than double the pseudo R^2 from earnings-related or quantitative statements in columns 2 and 3). Column 6 shows that, after controlling for the statements that are both quantitative and earnings related, there is no remaining association between I/B/E/S management forecasts and the other sets of forward-looking statements. While these results are intuitive, they provide assurance that our classification scheme effectively identifies the two attributes that jointly characterize the forecasts aggregated by I/B/E/S and which are typically used in empirical disclosure research.

3.5. Uncertainty proxies

We use multiple proxies for investor uncertainty to predict forward-looking information in a firm's quarterly earnings announcement. In particular, we use the following proxies to capture investor uncertainty about future earnings:

Loss	Losses tend to not be persistent and are not informative about future earnings (Hayn 1995).
Earnings Volatility	More volatile earnings are harder to predict (Waymire 1985).
Expectations Gap	A significant gap between investor expectations and investor realizations indicates relatively uninformed investors (Ajinkya and Gift 1984)
Implied Volatility	When investors are uncertain about the value of the firm, it may be a signal that earnings are harder to predict (Baginski and Hassell 1997; Patell and Wolfson 1981).
Analyst Dispersion	Analyst disagreement about future earnings reflects difficulty in predicting earnings.

Some of these variables (*Loss*, *Earnings Volatility*) reflect earnings characteristics that are likely to impede the successful prediction of future earnings. The remaining variables (*Expectations Gap*, *Implied Volatility*, and *Analyst Dispersion*) reflect outcomes signaling that investors and analysts are relatively uncertain about the future.

We use these variables, along with other control variables expected to be associated with voluntary disclosure, to predict the issuance of forward-looking information in firms' quarterly earnings announcements. We first predict each particular disclosure type (e.g., the extent of quantitative, earnings-related forward-looking statements) in a standard regression model. We then assess whether the determinants *differentially* affect the decision to issue different types of forward-looking information. This allows us to infer, for example, whether uncertainty decreases the likelihood of both quantitative, earnings-related forecasts and other forward-looking statements, and whether uncertainty has a stronger effect on one disclosure type than another. As a result, we can draw conclusions about the directional determinants of forward-looking disclosures, as well as the sensitivity of various disclosures to those determinants.

4. Empirical results

4.1. Are "other" forward-looking statements consequential?

Our first question is whether market participants view these other forward-looking statements as relevant and credible. Stated differently, can these statements revise beliefs? We answer this question by focusing on two market-based responses to the firm's quarterly earnings announcement: the stock price response to the earnings announcement and the change in analysts' earnings estimate accuracy during the earnings announcement period. For each measure, we examine how that measure varies with the extent of forward-looking information

provided with the earnings announcement, after controlling for the disclosed earnings surprise as well as other firm characteristics.

Table 4, Panel A shows the relation between forward-looking statements and the stock price response to a firm's quarterly earnings announcement. Because the amount of forward-looking disclosure is not unambiguously positive or negative (unlike, for example, disclosure tone or signed earnings surprises), we study the effect of greater forward-looking disclosure on *absolute* stock returns measured over the 3-day earnings announcement period. Column 1 shows that, after controlling for the magnitude of the earnings surprise (letting it differ between positive and negative surprises), there is a stronger stock price response to announcements that have a greater proportion of forward-looking information.[19]

In Columns 2 and 3, we distinguish between earnings and non-earnings related forward-looking statements, respectively, and find that greater amounts of both types of forward-looking statements are associated with stronger investor response to the disclosure. In Column 4, we include both types of forward-looking statements and continue to find that more "other" forward-looking statements are associated with stronger investor response even when controlling for the extent of quantitative and earnings-related statements. Overall, then, investors not only view non-forecast-type forward-looking statements as credible and relevant, but the information conveyed in those statements is not subsumed by statements typically viewed as earnings forecasts.[20]

[19] In each of the 4 regressions presented, the untabulated control variables are earnings volatility, whether the firm reported a loss for the current quarter, the size (market value) of the firm, the book-to-market ratio, and historical stock price volatility.

[20] We also find, but do not tabulate, that if we control for the presence of an I/B/E/S earnings forecast, that "other" forward-looking statements continue to be significantly associated with stock price response, but that quantitative and earnings-related statements no longer have a measurable relation. The fact that I/B/E/S earnings forecasts subsume the information in quantitative and earnings-related statements provides further comfort that our classification scheme is effective in identifying forecast-like statements.

In terms of magnitude, the coefficient on quantitative, earnings-related statements is substantially larger than the coefficient on other forward-looking statements (0.125 compared to 0.0221 in column 4); an F-test confirms that a forecast-type statement is significantly more consequential than a statement that would not typically be viewed as an earnings forecast ($p<0.01$). Recall, though, that these different types of forward-looking statements have significantly different distributions; the average earnings announcement contains about 0.6 quantitative, earnings-related statements compared to 11 "other" forward-looking statements, and the standard deviation of other forward looking statements is more than five times larger than the standard deviation of quantitative, earnings-related statements. In Columns 5 we show results where we have standardized each disclosure variable to have a mean of zero and a standard deviation of 1. Column 5 shows that a one unit change in each variable has about the same effect on stock price (0.0018 vs. 0.00158 with the difference having a p-value of 0. 82).

We report the results of a similar analysis in Table 4, Panel B. In this case, the dependent variable is the change in analyst forecast errors for quarter *t+1* earnings.[21] The results for analyst accuracy are similar to the results for stock price response: forward-looking statements are consequential and lead to more accurate analyst estimates of future earnings (greater reductions in absolute analyst forecast errors). This is true for both quantitative and earnings-related statements (Column 2) and for other forward-looking statements (Column 3), and is true whether the variables are included in the regression separately or together (Column 4). Similar to the effect on stock prices, a single forecast-like forward-looking statement has a much larger

[21] Specifically, we measure the change in forecast errors as the post-announcement absolute analyst error for quarter *t+1* earnings minus the pre-announcement absolute analyst error for quarter *t+1* earnings, scaled by the pre-announcement stock price. (Negative numbers indicate a decline in absolute error, or an improvement in forecast accuracy.) The pre-announcement analyst error is based on analyst estimates for quarter *t+1* earnings made prior to the quarter *t* earnings announcement. The post-announcement analyst error is based on analyst estimates made in the 7 days following the quarter *t* earnings announcement.

effect than a single "other" forward-looking statement ($p<0.01$). When we standardize those two variables, though, we find that a one standard deviation change in the amount of forward-looking information has about the same effect on analyst forecast accuracy regardless of whether the statement is quantitative and earnings-related or not (Column 5, $p=0.36$).

Overall, the results in Table 4 show that forward-looking statements are consequential in terms of affecting investors' and analysts beliefs. Most pertinent to this study, we find significant consequences for the "other" forward-looking statements that are typically ignored by researchers, even when controlling for those quantitative, earnings-related statements that are typically identified as forecasts. In terms of economic significance, a single forecast-like statement has a substantially larger effect than a single "other" forward-looking statement; quantitative earnings forecasts are a succinct method of conveying information. However, when we take into account the fact that firms issue significantly more "other" forward-looking statements, increasing the amount of forward-looking information by one standard deviation has about the same effect on stock prices and analyst forecast accuracy, regardless of whether the statements have all the attributes of a management earnings forecast.

4.2. Do "forecasting" firms issue more "other" forward-looking statements?

We next ask whether "forecasting" firms issue more or less forward-looking statements that would not traditionally be considered earnings forecasts (i.e., statements that are either non-earnings related, non-quantitative, or both). To answer this question, we split our observations into two subsets – forecasters and non-forecasters – based on whether the firm issued an I/B/E/S earnings forecast with their earnings announcement. We then compare the disclosure attributes discussed earlier across these two groups. The results of this comparison are shown in Table 5.

Forecasting firms, on average, issue shorter earnings announcements: an average of 72.6 sentences compared to 79.1 sentences for non-forecasting firms. However, forecasting firms provide more forward-looking sentences, particularly as a percentage of total sentences (15.6% of sentences for forecasters compared to 13.6% for non-forecasters).[22] The result is hardly surprising; firms that speak more about the future are more likely to make specific predictions about future earnings (and have those predictions identified and recorded by I/B/E/S).

More noteworthy is the distribution of forward-looking sentences for forecasters vs. non-forecasters. The difference in overall forward-looking information is driven by the two attributes that characterize earnings forecasts – forecasting firms provide substantially more earnings-related (3.4% vs. 1.9%) and quantitative (3.7% vs. 2.1%) forward-looking sentences, both different at the $p<0.01$ level. However, forecasting firms provide comparable amounts of non-earnings (12.2% vs. 11.7%) and non-quantitative (11.8% vs. 11.5%) forward-looking sentences, neither of which is different at even the $p<0.10$ level.

Turning to sentences that are both quantitative and earnings-related, I/B/E/S forecasters issue an average of 1.1 such sentences in each earnings announcement (1.6% of all sentences) while non-forecasters issue an average of just 0.3 (0.4% of all sentences). When it comes to the forward-looking sentences that are not jointly earnings-related and quantitative (i.e., "other" forward-looking statements), there is no significant difference between the disclosures made by forecasters (13.9%) and non-forecasters (13.2%).

[22] We focus on the percentage, rather than the number, of sentences that are forward-looking, earnings-related, or quantitative. In essence, this approach focuses on the intensity with which firms disclose different types of forward-looking information.

To place these results in context, forward-looking sentences that are jointly earnings-related and quantitative make up only about 5% of all forward-looking sentences.[23] Firms identified as forecasters by I/B/E/S issue substantially more of these kinds of statements. However, for the remaining forward-looking sentences (i.e., roughly 95% of all forward-looking sentences), I/B/E/S forecasters issue approximately the same amount as non-forecasters. There are two takeaways from these results: First, quantitative earnings forecasts, the types of statements most frequently studied in prior research, make up a small minority of all forward-looking statements. Second, the choice to issue a quantitative earnings forecast appears to be largely unrelated to the choice to issue other types of prospective statements – they do not appear to be either complements or substitutes for one another.

In the next section, we examine the decision to issue forward-looking statements under uncertainty, and how uncertainty affects the choice to issue one kind of statement rather than another.

4.3. The relation between uncertainty and different types of forward-looking statements

As discussed earlier, prior research suggests that investors will demand more forward-looking information when uncertainty is high, but managers will be less willing to supply that information in the face of uncertainty. In particular, managers are less willing to issue quantitative earnings forecasts when uncertainty is high (e.g., Waymire 1985; Lu and Tucker 2012).[24] Whether that extends beyond quantitative earnings forecasts remains an open question.

[23] For I/B/E/S forecasters, sentences that are both earnings-related and quantitative make up 9.1% of all forward-looking sentences. For non-forecasters, that number is 2.5%.

[24] In a more recent paper, Billings et al. (2014) provide mixed evidence on this question. They show that managers are less likely to issue an earnings forecast when baseline uncertainty is high, but more likely to issue an earnings forecast when uncertainty has increased immediately prior to an earnings announcement.

To address this question, we regress our forward-looking disclosure measures on proxies for uncertainty and additional control variables. The results of these regressions are shown in Table 6. In Panel A, we show an OLS regression where the dependent variable is the percentage of quantitative, earnings-related forward-looking statements in a quarterly earnings announcement (i.e., the type of statements typically classified as earnings forecasts). Column 1 presents the results from a baseline regression, including only market value, book-to-market, lagged stock returns, and analyst following as independent variables. Column 2 shows the effect of an additional independent variable: *Lagged FLS Measure*, the proportion of quantitative, earnings-related FLS in the previous earnings announcement.

The lagged variable is overwhelmingly the strongest predictor of the firm's disclosure choice, increasing the R^2 from 0.017 in Column 1 to 0.43 in Column 2. There are a few reasons why one period's disclosure choice is such a powerful predictor of the next period's choice. First, disclosure choices tend to be sticky; it is likely that many firms use a standard earnings announcement template from one period to the next, primarily updating the numbers within that template. Second, firms that issue forward-looking information in one period may feel pressure to update those predictions to avoid legal liability.[25] In any event, the significant autocorrelation in disclosure behavior illustrates the importance of controlling for prior disclosure choices rather than analyzing only a single period's disclosure or treating each period as independent of prior periods.

In each of the remaining columns, we add a variable representing uncertainty about firm value or future earnings: *Loss*, *Earnings Volatility*, *Expectations Gap*, *Implied Volatility*, and

[25] As recently noted by Skadden, Arps, Slate, Meagher & Flom LLP, "There is no federal securities law, rule or regulation expressly imposing a duty to update a forward-looking statement. However, courts have analyzed the possible duty under Exchange Act Section 10(b) and Rule 10b-5. Courts are divided as to whether or not a duty to update exists for a forward-looking statement that becomes inaccurate or misleading after the passage of time." (Corporate Finance Alert: Earnings Guidance 2012)

Analyst Dispersion. Although there is some variation in statistical significance, the inference is the same for each of the five uncertainty proxies: increased uncertainty is associated with a lower likelihood of the firm issuing quantitative, earnings-related forward-looking statements. (In untabulated results, we find the same for earnings announcements accompanied by an I/B/E/S forecast. Again, our text-based measure captures the behavior of the typically-studied earnings forecast.) The negative relation between uncertainty and quantitative, earnings-related statements is consistent with prior research (e.g., Waymire 1985; Lu and Tucker 2012), as well as anecdotal evidence from CFOs. In particular, Graham et al. (2005) conclude from their interviews that "guidance is desirable if the firm is stable enough to deliver the guided number, but guidance is undesirable if the firm is unsure of its ability to deliver the guided earnings."

Our question is whether the guidance/uncertainty relation extends to other types of forward-looking statements. To address this question, we perform a similar exercise as in Table 6 Panel A, this time examining the decision to issue forward-looking statements other than quantitative, earnings-related FLS. That is, what drives the decision to issue the 95% of forward-looking statements that would not typically be viewed as earnings forecasts? Table 6, Panel B presents the results.

Similar to the decision to issue quantitative, earnings-related FLS, the decision to provide other forward-looking information is quite sticky: Panel B shows that the prior period's disclosure measure (*Lagged FLS Measure*) has a coefficient of roughly 0.73, and its inclusion in the model dramatically increase the explanatory power from an R^2 of 0.001 in Column 1 to 0.54 in Column 2. As in Panel A, Columns 3 through 7 show the effect of uncertainty on the disclosure of "other" forward-looking statements.

The contrast between Panels A and B is clear: while firms are *less* likely to issue quantitative earnings forecasts when uncertainty is higher, they are *more* likely to issue other forward-looking statements when uncertainty is higher. The five coefficients, although varying in statistical significance, are all positively associated with uncertainty. Overall, the well-known result that uncertainty leads to fewer forecasts does not apply to the vast majority of all forward-looking information. The small minority of quantitative, earnings-related statements are less frequent when uncertainty is higher, but the opposite is true for the much larger set of forward-looking statements that would not typically be viewed as forecasts.

5. What aspects of quantitative earnings factors make them less appealing to managers when uncertainty is high?

Prior research offers possible explanations for why managers would not want to issue earnings forecasts when uncertainty is high. For example, unattained earnings forecasts may induce shareholder litigation (Waymire 1985) or imply that management has little control over the firm (Graham et al. 2005). But these reasons do not explain why managers would issue more "other" forward-looking information when uncertainty is high since, for example, unattained revenue forecasts or misleading product launch expectations would likely have negative consequences as well.

We focus on the two attributes that define management forecasts: quantitative and earnings-related and ask whether one or the other disproportionately influences the decision to withhold earnings forecasts when uncertainty is high. On one hand, managers may be reluctant to issue quantitative projections for which they may later be held accountable. Hutton et al. (2003) make the point that projections are more credible when they are "specific enough to be

compared with subsequent realizations" (p. 876). Extending this argument, managers may believe that adverse consequences from specific projections are more likely because those projections are more easily judged against ex post realizations. In this case, managers would prefer non-quantitative statements to quantitative statements, regardless of the metric disclosed.

On the other hand, managers may prefer to issue prospective statements about topics over which they have more control. Lu and Tucker (2012) propose this explanation in their study of capital expenditure and strategic plan disclosures. Specifically, they suggest that managers might be willing to disclose "*input* metrics over which they have control while withholding guidance of earnings – a summary *output* metric" (p. 952). An implication of this scenario is that managers would be willing to issue either qualitative or quantitative forward-looking information as long as they control over the metric they disclose.

We test each of these predictions below.

5.1. Are managers concerned about ex post evaluation of quantitative forward-looking statements?

If managers are reluctant to issue prospective statements for which they may be held accountable (particularly when uncertainty is high), we expect that they will tend to issue fewer quantitative statements and more non-quantitative statements.[26] We investigate this possibility by comparing the sensitivities of quantitative and non-quantitative forward-looking statements to uncertainty. We do so by estimating a system of seemingly-unrelated regressions (SUR), with each regression similar to the regressions shown in Table 6. In one regression, the dependent variable is the percentage of quantitative earnings-related statements; in the other regression, the

[26] We acknowledge the point made by Hutton et al. (2003): statements do not need to be quantitative to be verifiable. (Hutton et al. offer the example statement that sales will increase in a particular period relative to a specific benchmark.) We do not disagree, and simply argue that quantitative statements are more verifiable than non-quantitative statements.

dependent variable is the percentage of non-quantitative earnings-related statements.[27] In other words, we vary the quantitative/non-quantitative dimension, but hold the earnings/non-earnings dimension constant. The SUR structure allows us to compare the relative sensitivity to uncertainty across the two dependent variables.

We show the outcome from these regressions in Table 7. For brevity, we report only the estimated coefficients and t-statistics for the uncertainty proxies from each individual regression (Columns 1 and 2), along with the significance of the difference across dependent variables (Column 3). Column 1 shows the effect of uncertainty on the issuance of quantitative, earnings-related statements. For all proxies, quantitative earnings statements are significantly less likely when uncertainty is higher.

Column 2 shows the effect of uncertainty on non-quantitative, earnings-related statements. Here, the results are generally negative, although weaker (significant at the $p<0.10$ level for only 1 of the 5 proxies). What is important to us, though, is the difference in sensitivity between quantitative and non-quantitative earnings statements. The significance of that difference is shown in Column 3. The sensitivity to uncertainty is different for only 2 of the 5 uncertainty proxies (*Loss* and *Analyst Dispersion*). For the remaining 3 proxies, quantitative and non-quantitative statements are not differentially sensitive to uncertainty. Based on these results, it seems unlikely that accountability/verifiability is the primary concern for managers issuing forward-looking statements.

5.2. Are managers concerned about the controllability of earnings-related forward-looking statements?

[27] Because the two dependent variables have different distributions, we use standardized transformations so that the coefficients can be compared across regressions. As a consequence, the estimated coefficients in Column 1 are different from the estimated coefficients in Table 6, which models the untransformed dependent variable.

We next investigate the possibility that managers are reluctant to discuss metrics over which they have little control, and are more willing to discuss facts they do control. We again employ a system of two seemingly unrelated regressions, this time with one regression modeling the choice to issue quantitative, earnings-related statements and the other regression modeling quantitative, non-earnings statements. In other words, we vary the earnings/non-earnings dimension, but hold the quantitative/non-quantitative dimension constant. The results are presented in Table 8.

As in Table 7, Column 1 of Table 8 shows the relation between uncertainty and the issuance of quantitative, earnings-related statements. Again, the relation between uncertainty and these statements is uniformly negative. Column 2 shows the relation between quantitative, non-earnings statements and uncertainty. Here, the relation is positive and significant for 2 of the 5 proxies for uncertainty, with the other 3 proxies not significantly different from zero. The third column shows the differential in sensitivity to uncertainty (Column 1 compared to Column 2), and the pattern is clear: uncertainty has a much stronger negative effect on quantitative *earnings*-related statements compared to quantitative *non-earnings* statements. In comparison to Table 7, these results suggest that the lack of controllability of earnings is the dominant force that inhibits managers from issuing earnings forecasts.

5.3. Comparing the effects of accountability/verifiability and controllability

In order to statistically assess whether accountability/verifiability or controllability has the stronger effect on managers' disclosure choices, we perform a final set of seemingly unrelated regressions. In this case, we compare two sets of statements that each have only a single "forecast" attribute. In Column 1, we predict the issuance of quantitative, but non-earnings statements. In Column 2, we predict the issuance of non-quantitative, but earnings-

related statements. We view this comparison as effectively asking managers, "If you had to issue a forward-looking statement with a single attribute, would you be more willing to 1) issue a quantitative (more verifiable) statement about a metric that you can control or 2) issue a non-quantitative statement about a metric (earnings) that you can't control?"

The results of the comparison are shown in Table 9. Column 1 shows a generally positive relation between uncertainty and quantitative, non-earnings statements (statistically significant for 2 of the 5 proxies). Column 2 shows a generally negative association between uncertainty and non-quantitative, earnings-related statements (albeit statistically significant for 1 of the 5 proxies). The third column shows a comparison between the two types of forward-looking statements, and supports the inferences drawn earlier: For 3 of the 5 uncertainty proxies, there is a significantly stronger negative effect (at the $p<0.10$ level) on non-quantitative, earnings-related statements than there is on quantitative, non-earnings statements. For the *Implied Volatility* proxy, the direction is the same, but the p-value is just slightly more than 0.10. And for the final proxy, Analyst Dispersion, the coefficients are statistically indistinguishable (p-value of 0.97).

Taken together, these results provide strong evidence that the (lack of) controllability of earnings, rather than the *ex post* verifiability of quantitative projections, inhibits managers from issuing quantitative earnings forecasts when uncertainty is high.

6. Summary

Extant empirical accounting literature has devoted considerable attention to examining quantitative management earnings forecasts, but suggests that firms only occasionally issue such forecasts. Focusing on forward-looking statements more broadly (including qualitative and non-

earnings disclosures), we show that prospective disclosures are far more prevalent than prior research would indicate: the vast majority of firms include some type of forward-looking statements in their earnings press releases. Moreover, these other (non-forecast) forward-looking disclosures are consequential, resulting in stronger investor responses and greater changes in analyst forecast accuracy in the announcement period.

We show that there are substantial differences between the relatively small set of prospective statements that would typically be classified as earnings forecasts (i.e., quantitative and earnings-related) and the much larger set of all other forward-looking statements. We show that the two groups of forward-looking statements are neither complements nor substitutes for one another; instead, the decision to issue non-earnings or non-quantitative statements appears to be independent of the decision to issue quantitative statements about future earnings.

We then show that the decision to issue the two types of statements is quite different in the face of uncertainty. While managers issue fewer quantitative earnings statements when uncertainty is higher (consistent with prior research), they actually issue more "other" forward-looking statements as uncertainty increases. As to why these other statements are more appealing to managers when uncertainty is high, our evidence suggests that managers are reluctant to issue statements about summary measures over which they have little control, (whether quantitative or not), rather than being reluctant to issue quantitative statements that can more easily be evaluated ex post (whether earnings-related or not).

Our findings highlight the need to distinguish between the varying types of earnings-related and quantitative forward-looking statements managers provide, and the need for researchers to be cautious in using standard point and range earnings forecasts (i.e., earnings-related and quantitative forward-looking statements) as summary measures of disclosure.

Considering that most forward-looking disclosures are actually non-quantitative and/or non-earnings-related statements, future researchers should be cautious in treating forward-looking statements homogenously since the results from this paper suggest that conclusions drawn from prior forecast research cannot be extended to these forms of forward-looking statements.

Appendix A – List of Forward-Looking and Earnings-Related Terms

Forward-Looking Terms

anticipate
anticipates
is anticipated
are anticipated
currently anticipated
now anticipated
is anticipating
are anticipating
currently anticipating
now anticipating
expect
expects
is expected
are expected
currently expected
now expected
is expecting
are expecting
currently expecting
now expecting
forecast
forecasts
is forecasted
are forecasted
currently forecasted
now forecasted
is forecasting
are forecasting
currently forecasting
now forecasting

hope
hopes
is hoping
are hoping
currently hoping
now hoping
is hoped
are hoped
currently hoped
now hoped
intend
intends
is intended
are intended
currently intended
now intended
is intending
are intending
currently intending
now intending
plan
plans
is planning
are planning
currently planning
now planning
is planned
are planned
currently planned
now planned

project
projects
projection
projections
is projected
are projected
currently projected
now projected
is projecting
are projecting
currently projecting
now projecting
seek
seeks
is seeking
are seeking
currently seeking
now seeking
believe
believes
can
could
goal
goals
may
might
objective
objectives
should
will

Earnings-Related Terms

Earnings, EPS, income, loss, losses, profit, profits

Appendix B – Examples of FLS

Quantitative, Earnings-Related

Our improved fourth quarter results should enable us to deliver adjusted earnings per share for the full year of 2006 in a range of $3.87 to $3.89, which is consistent with both our previous guidance and external expectations.

We continue to expect full year 2008 sales and revenues to be more than $50 billion and profit per share to be about $6.00.

Non-Quantitative, Earnings-Related

…we are confident that our integrated service businesses, which have grown significantly this year, will offer revenue and earnings support in the coming year.

The company also indicated that its estimate does not reflect the additional variability in earnings due to fair value accounting adjustments in its businesses and other impacts that could occur because of future volatility in the natural gas markets.

Quantitative, Non-Earnings-Related

…the Company projects produced coal shipments for the full year 2009 will be between 38 and 41 million tons, with average produced coal realization between $60.00 and $63.00 per ton.

…the Company expects its capital expenditures in 2008 to be approximately $300 million, an 8% reduction from 2007 capital expenditures of $326 million.

Non-Quantitative, Non-Earnings-Related

…the company plans to reduce costs by streamlining manufacturing and administrative operations primarily in North America and Europe, creating an even more competitive platform for growth and margin improvement.

During the third quarter, the company made further progress implementing the strategic cost reductions that will support the targeted growth investments announced in July 2005.

Appendix C – Variable Definitions

First Call Forecast	Indicator variable equal to 1 if the firm issued an earnings forecast within one day of the current period earnings announcement, as identified by the First Call CIG dataset.
Book-to-Market	Shareholders' equity divided by pre-earnings announcement market value.
Lagged Return	Cumulative stock return measured from three trading days following the prior earnings announcement to three trading days before the current earnings announcement.
Lagged Volatility	Standard deviation of daily, log stock returns measured from three trading days following the prior earnings announcement to three trading days before the current earnings announcement.
Log(Market Value)	Natural logarithm of the firm's equity value measured three trading days prior to the current earnings announcement.
Analyst Following	Number of analysts issuing estimates for the current period's quarterly earnings, from I/B/E/S.
Loss	Indicator variable equal to 1 if current period earnings are negative.
Expectations Gap	Analyst expectations for period t+1 earnings minus actual t+1 earnings, deflated by stock price, measured three trading days prior to the period t earnings announcement date.
Earnings Volatility	Standard deviation of the firm's earnings before extraordinary items (deflated by lagged total assets), measured over the prior 12 quarters.
Analyst Dispersion	Standard deviation of analyst forecasts of the current period's quarterly earnings, from I/B/E/S.
Implied Volatility	The firm's implied volatility three trading days prior to the earnings announcement, taken from 30 day standardized options.
# Forward-Looking Sentences (FLS)	The number of sentences containing a forward-looking term (e.g., "anticipate", "forecast" or "project") from the firm's current earnings announcement.

 # FLS, Earnings-related The number of sentences containing a forward-looking term (e.g., "anticipate", "forecast" or "project") and an earnings term (e.g., "income" or "profit") from the firm's current earnings announcement.

 # FLS, Non-Earnings-related The number of sentences containing a forward-looking term (e.g., "anticipate", "forecast" or "project") that do not contain an earnings term (e.g., "income" or "profit") from the firm's current earnings announcement.

 # FLS, Quantitative The number of sentences containing a forward-looking term (e.g., "anticipate", "forecast" or "project") and a quantitative term (e.g., "thousands", "millions", "$5M", or $10B") from the firm's current earnings announcement.

 # FLS, Non-Quantitative The number of sentences containing a forward-looking term (e.g., "anticipate", "forecast" or "project") that do not contain a quantitative term (e.g., "thousands", "millions", "$5M", or "$10B") from the firm's current earnings announcement.

 # FLS, Earnings-related and Quantitative The number of sentences containing a forward-looking term (e.g., "anticipate", "forecast" or "project") that contain both an earnings term (e.g., "income" or "profit") and a quantitative term (e.g., "thousands", "millions", "$5M", or "$10B") from the firm's current earnings announcement.

 # FLS, Other The number of sentences containing a forward-looking term (e.g., "anticipate", "forecast" or "project") that do not contain both an earnings term (e.g., "income" or "profit") and a quantitative term (e.g., "thousands", "millions", "$5M", or "$10B") from the firm's current earnings announcement.

% FLS The number of sentences containing a forward-looking term (e.g., "anticipate", "forecast" or "project") as a percentage of the number of sentences in the earnings announcement from the firm's current earnings announcement.

% FLS, Earnings-related The number of sentences containing a forward-looking term (e.g., "anticipate", "forecast" or "project") and an earnings term (e.g., "income"

	or “profit”) as a percentage of the number of sentences in the earnings announcement from the firm’s current earnings announcement.
% FLS, Quantitative	The number of sentences containing a forward-looking term (e.g., “anticipate”, “forecast” or “project”) and a quantitative term (e.g., “thousands”, “millions”, “$5M”, or $10B”) as a percentage of the number of sentences in the earnings announcement from the firm’s current earnings announcement.
Sentence Count	The number of sentences from the firm’s current earnings announcement.
Earnings Surprise	Analyst forecast error measured as actual earnings minus the mean analyst estimate constructed from estimates issued since the last quarterly earnings announcement, scaled by price.

References

Ajinkya, B. 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 (3):343-376.

Ajinkya, B. B., and M. J. Gift. 1984. Corporate Managers' Earnings Forecasts and Symmetrical Adjustments of Market Expectations. *Journal of Accounting Research* 22 (2):425-444.

Baginski, S. P., S. B. Clinton, and S. T. McGuire. 2014. Forward-Looking Voluntary Disclosure in Proxy Contests. *Contemporary Accounting Research* 31 (4):1008-1046.

Baginski, S. P., and J. M. Hassell. 1997. Determinants of Management Forecast Precision. *The Accounting Review* 72 (2):303-312.

Baginski, S. P., J. M. Hassell, and M. D. Kimbrough. 2002. The Effect of Legal Environment on Voluntary Disclosure: Evidence from Management Earnings Forecasts Issued in U.S. and Canadian Markets. *The Accounting Review* 77 (1):25-50.

Baginski, S. P., J. M. Hassell, and G. Waymire. 1994. Some Evidence on the News Content of Preliminary Earnings Estimates. *The Accounting Review* 69 (1):265-273.

Ball, R., and L. Shivakumar. 2008. How Much New Information Is There in Earnings? *Journal of Accounting Research* 46 (5):975-1016.

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 (2):167-190.

Beyer, A., D. A. Cohen, T. Z. Lys, and B. R. Walther. 2010. The Financial Reporting Environment: Review of the Recent Literature. *Journal of Accounting & Economics* 50 (2-3):296-343.

Billings, M. B., and M. C. Cedergren. 2015. Strategic Silence, Insider Selling and Litigation Risk. *Journal of Accounting & Economics, Forthcoming*.

Billings, M. B., R. H. Jennings, and B. Lev. 2014. On Guidance and Volatility. *SSRN eLibrary*.

Botosan, C. A., and M. A. Plumlee. 2002. A Re-examination of Disclosure Level and the Expected Cost of Equity Capital. *Journal of Accounting Research* 40 (1):21-40.

Chen, S., X. Chen, and Q. Cheng. 2008. Do Family Firms Provide More or Less Voluntary Disclosure? *Journal of Accounting Research* 46 (3):499-536.

Chen, S., D. Matsumoto, and S. Rajgopal. 2011. Is Silence Golden? An Empirical Analysis of Firms That Stop Giving Quarterly Earnings Guidance. *Journal of Accounting & Economics* 51 (1-2):134-150.

Cholakis, P. 1999. Company Disclosure of Earnings Projections: Should Individual Investors be Allowed Into the Ball Park? *Santa Clara Law Review* 39 (3).

Chuk, E., D. Matsumoto, and G. S. Miller. 2013. Assessing Methods of Identifying Management Forecasts: CIG Vs. Researcher Collected. *Journal of Accounting and Economics* 55 (1):23-42.

Clarkson, P. M., A. Dontoh, G. D. Richardson, and S. E. Sefcik. 1992. The Voluntary Inclusion of Earnings Forecasts in IPO Prospectuses. *Contemporary Accounting Research* 8 (2):601-626.

Clarkson, P. M., J. L. Kao, and G. D. Richardson. 1994. The Voluntary Inclusion of Forecasts in the MD&A Section of Annual Reports. *Contemporary Accounting Research* 11 (1):423-450.

Coller, M., and T. L. Yohn. 1997. Management Forecasts and Information Asymmetry: An Examination of Bid-Ask Spreads. *Journal of Accounting Research* 35 (2):181-191.
Corporate Finance Alert: Earnings Guidance. 2012. New York, NY: Skadden, Arps, Slate, Meagher, & Flom LLP.
Cotter, J., I. Tuna, and P. D. Wysocki. 2006. Expectations Management and Beatable Targets: How Do Analysts React to Explicit Earnings Guidance? *Contemporary Accounting Research* 23 (3):593-624.
Field, L., M. Lowry, and S. Shu. 2005. Does Disclosure Deter or Trigger Litigation? *Journal of Accounting & Economics* 39 (3):487-507.
Graham, J. R., C. R. Harvey, and S. Rajgopal. 2005. The Economic Implications of Corporate Financial Reporting. *Journal of Accounting & Economics* 40 (1-3):3-73.
Hayn, C. 1995. The Information Content of Losses. *Journal of Accounting & Economics* 20 (2):125-153.
Hirst, D. E., L. Koonce, and S. Venkataraman. 2008. Management Earnings Forecasts: A Review and Framework. *Accounting Horizons* 22 (3):315-338.
Hollander, S., M. Pronk, and E. Roelofsen. 2010. Does Silence Speak? An Empirical Analysis of Disclosure Choices During Conference Calls. *Journal of Accounting Research* 48 (3):531-563.
Houston, J. F., B. Lev, and J. W. Tucker. 2010. To Guide or Not to Guide? Causes and Consequences of Stopping Quarterly Earnings Guidance. *Contemporary Accounting Research* 27 (1):143-185.
Hutton, A. P., G. S. Miller, and D. J. Skinner. 2003. The Role of Supplementary Statements with Management Earnings Forecasts. *Journal of Accounting Research* 41 (5):867-890.
Jennings, R. 1987. Unsystematic Security Price Movements, Management Earnings Forecasts, and Revisions in Consensus Analyst Earnings Forecasts. *Journal of Accounting Research* 25 (1):90-110.
Karamanou, I., and N. Vafeas. 2005. The Association between Corporate Boards, Audit Committees, and Management Earnings Forecasts: An Empirical Analysis. *Journal of Accounting Research* 43 (3):453-486.
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 (1):113-134.
Kile, C., G. Pownall, and G. Waymire. 1998. How Frequently Do Managers Disclose Prospective Earnings Information? *Journal of Financial Statement Analysis* 3 (3).
King, R., G. Pownall, and G. Waymire. 1990. Expectations Adjustment Via Timely Management Forecasts: Review, Synthesis, And Suggestions For Future Research. *Journal of Accounting Literature* 9:113-144.
Kwak, B., B. T. Ro, and I. Suk. 2012. The Composition of Top Management with General Counsel and Voluntary Information Disclosure. *Journal of Accounting and Economics* 54 (1):19-41.
Li, E. X. 2013. Revealing Future Prospects Without Forecasts: The Case of Accelerating Material Contract Filings. *The Accounting Review* 88 (5):1769-1804.
Li, F. 2010. The Information Content of Forward-Looking Statements in Corporate Filings—A Naïve Bayesian Machine Learning Approach. *Journal of Accounting Research* 48 (5):1049-1102.

Lu, H.-Y., and J. W. Tucker. 2012. Nonearnings Corporate Guidance. *Financial Management* 41 (4):947-977.

Matsumoto, D., M. Pronk, and E. Roelofsen. 2011. What Makes Conference Calls Useful? The Information Content of Managers' Presentations and Analysts' Discussion Sessions. *The Accounting Review* 86 (4):1383-1414.

Muslu, V., S. Radhakrishnan, K. R. Subramanyam, and D. Lim. 2014. Forward-Looking MD&A Disclosures and the Information Environment. *Management Science, Forthcoming*.

Patell, J. M. 1976. Corporate Forecasts of Earnings Per Share and Stock Price Behavior: Empirical Test. *Journal of Accounting Research* 14 (2):246-276.

Patell, J. M., and M. A. Wolfson. 1981. The Ex Ante and Ex Post Price Effects of Quarterly Earnings Announcements Reflected in Options and Stock Prices. *Journal of Accounting Research* 19 (2):434-458.

Penman, S. H. 1980. An Empirical Investigation of the Voluntary Disclosure of Corporate Earnings Forecasts. *Journal of Accounting Research* 18 (1):132-160.

Pownall, G., C. Wasley, and G. Waymire. 1993. The Stock Price Effects of Alternative Types of Management Earnings Forecasts. *The Accounting Review* 68 (4):896-912.

Rogers, J. L., and P. C. Stocken. 2005. Credibility of Management Forecasts. *The Accounting Review* 80 (4):1233-1260.

Rogers, J. L., and A. Van Buskirk. 2009. Shareholder Litigation and Changes in Disclosure Behavior. *Journal of Accounting and Economics* 47 (1-2):136-156.

———. 2013. Bundled Forecasts in Empirical Accounting Research. *Journal of Accounting and Economics* 55 (1):43-65.

Skinner, D. J. 1994. Why Firms Voluntarily Disclose Bad News. *Journal of Accounting Research* 32 (1):38-60.

Soffer, L. C., S. R. Thiagarajan, and B. R. Walther. 2000. Earnings Preannouncement Strategies. *Review of Accounting Studies* 5 (1):5-26.

Wasley, C. E., and J. S. Wu. 2006. Why Do Managers Voluntarily Issue Cash Flow Forecasts? *Journal of Accounting Research* 44 (2):389-429.

Waymire, G. 1984. Additional Evidence on the Information Content of Management Earnings Forecasts. *Journal of Accounting Research* 22 (2):703-718.

———. 1985. Earnings Volatility and Voluntary Management Forecast Disclosure. *Journal of Accounting Research* 23 (1):268-295.

———. 1986. Additional Evidence on the Accuracy of Analyst Forecasts before and after Voluntary Management Earnings Forecasts. *The Accounting Review* 61 (1):129-142.

Yang, H. I. 2012. Capital Market Consequences of Managers' Voluntary Disclosure Styles. *Journal of Accounting and Economics* 53 (1–2):167-184.

Table 1 – Quarterly earnings announcement sample

	Earnings Forecast			
Year	No	Yes	Total	% with Forecasts
2004	182	129	311	41%
2005	3,766	2,244	6,010	37%
2006	3,965	2,698	6,663	40%
2007	4,433	2,741	7,174	38%
2008	4,922	2,821	7,743	36%
2009	5,275	2,574	7,849	33%
2010	5,193	2,825	8,018	35%
2011	4,913	2,648	7,561	35%
2012	4,525	2,734	7,259	38%
2013	4,328	2,633	6,961	38%
2014	1,084	643	1,727	37%
Total	42,586	24,690	67,276	37%

Table 1 Notes:
Table 1 shows the distribution of our sample of quarterly earnings announcements by year of the earnings announcement date. Earnings announcements are included if they meet the following criteria: I/B/E/S provides both an actual earnings value and at least one pre-announcement analyst earnings estimate for the quarter in question; the firm has CRSP market data and Compustat Balance Sheet data prior to the earnings announcement; both the current and prior earnings press release are available as 8-K filings in the SEC's EDGAR database. The earnings announcement are separated into two groups based on whether the I/B/E/S management earnings forecast dataset reports a management earnings forecast within 1 day of the earnings announcement.

Table 2 – Univariate Statistics
Panel A: Firm-level characteristics

Variable	N	Mean	Median	Std. Dev.	25th pct	75th pct
Market Value (millions)	67,276	5,011.2	1,196.0	12,447.0	402.1	3,568.3
Book-to-Market	67,276	0.63	0.48	0.59	0.28	0.79
Analyst Following	67,276	5.2	4.0	4.8	2.0	7.0
Loss	67,276	17.5%				
Pre-Earnings Expectations Gap	63,303	-0.4%	0.0%	2.5%	-0.4%	0.2%
|Pre-Earnings Expectations Gap|	63,303	1.1%	0.3%	2.8%	0.1%	0.8%
Earnings Volatility	58,175	1.9%	0.9%	2.6%	0.4%	2.1%
Analyst Dispersion	54,635	5.7%	2.4%	10.4%	1.2%	5.6%
Pre-Earnings Implied Volatility	53,601	47%	42%	22%	31%	57%
Earnings Surprise, deflated	67,276	-0.14%	0.05%	1.90%	-0.10%	0.25%
Earnings Period 3-day Return	67,276	0.21%	0.09%	8.53%	-4.06%	4.47%
I/B/E/S Earnings Forecast	67,276	36.7%				

See Appendix C for variable definitions.

Table 2 – Univariate Statistics
Panel B: Earnings announcement characteristics

Variable	N	Mean	Median	Std. Dev.	25th pct	75th pct
Sentence count	67,276	76.7	62.0	56.9	45.0	88.0
Forward-looking sentences (FLS)	67,276	11.6	8.0	11.9	5.0	14.0
FLS – earnings-related	67,276	1.9	1.0	2.3	0.0	3.0
FLS – non-earnings-related	67,276	9.7	7.0	10.7	4.0	12.0
FLS – quantitative	67,276	2.1	1.0	2.8	0.0	3.0
FLS – non-quantitative	67,276	9.4	7.0	10.1	4.0	11.0
FLS – earnings and quantitative	67,276	0.6	0.0	1.0	0.0	1.0
FLS – other	67,276	11.0	8.0	11.6	4.0	13.0
% FLS	67,276	14.3%	13.5%	7.4%	8.8%	19.1%
% FLS - earnings-related	67,276	2.4%	1.8%	2.7%	0.0%	3.8%
% FLS - non-earnings-related	67,276	11.9%	11.1%	6.6%	6.9%	16.1%
% FLS – quantitative	67,276	2.7%	1.9%	3.1%	0.0%	4.1%
% FLS - non-quantitative	67,276	11.6%	10.9%	6.4%	6.8%	15.6%
% FLS - earnings and quantitative	67,276	0.8%	0.0%	1.4%	0.0%	1.4%
% FLS – other	67,276	13.5%	12.7%	7.2%	8.2%	18.1%

See Appendix C for variable definitions.

Table 3 – Validation of text-based classification: Correlation with I/B/E/S earnings forecasts

	(1)	(2)	(3)	(4)	(5)	(6)
% Forward-Looking Sentences (FLS)	2.291***					
	(3.597)					
% Earnings-Related FLS		12.72***		9.498**		0.880
		(6.939)		(2.396)		(0.246)
% Non-Earnings FLS		0.310		-1.544		0.0974
		(0.450)		(-0.517)		(0.0358)
% Quantitative FLS			10.66***	9.475***		-1.302
			(8.691)	(3.002)		(-0.462)
% Non-Quantitative FLS			0.0513	0.126		0.456
			(0.0859)	(0.0414)		(0.160)
% Earnings-related and Quantitative FLS					42.05***	43.07***
					(23.58)	(18.42)
% "Other" FLS					0.381	
					(0.615)	
Observations	67,276	67,276	67,276	67,276	67,276	67,276
Pseudo R^2	0.0132	0.0528	0.0499	0.0796	0.140	0.141

Table 3 Notes:
Table 3 shows the results of a probit regression, where the binary dependent variable is equal to 1 for earnings announcements that were accompanied by an earnings forecast recorded in the I/B/E/S management guidance dataset (including measures 'EPS', 'GPS', and 'NET'), and 0 for earnings announcements without an associated forecast. Variables are defined in Appendix C and standard errors are clustered by industry (2-digit SIC). Robust z-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4 – Response to forward-looking statements
Panel A: Stock price response. Dependent variable = |3-day EA period stock return|

Independent Variable	**(1)**		**(2)**		**(3)**		**(4)**		**(5)**	
Positive Earnings Surprise, deflated	0.607	***	0.612	***	0.605	***	0.613	***	0.613	***
	(8.08)		(8.17)		(8.06)		(8.21)		(8.21)	
|Negative Earnings Surprise, deflated|	0.239	***	0.240	***	0.240	***	0.239	***	0.239	***
	(7.62)		(7.62)		(7.61)		(7.65)		(7.65)	
% Forward-Looking Sentences (FLS)	0.0275	***								
	(2.91)									
% FLS – Earnings and Quantitative			0.134	***			0.125	***	0.00180	***
			(4.07)				(3.88)		(3.88)	
% FLS – Other					0.0241	**	0.0221	**	0.00158	**
					(2.34)		(2.19)		(2.19)	
Additional control variables	Yes		Yes		Yes		Yes		Yes	
F-Test: *% FLS – Earnings and Quantitative = % FLS – Other* (p-value)							<0.01		0.82	
Observations	58,175		58,175		58,175		58,175		58,175	
R-squared	0.13		0.13		0.13		0.13		0.13	

Table 4 – Response to forward-looking statements
Panel B: Change in analyst accuracy. Dependent variable = Δ|Average analyst forecast error for next quarter's earnings|

Independent Variable	**(1)**		**(2)**		**(3)**		**(4)**		**(5)**	
Positive Earnings Surprise, deflated	-0.109	***	-0.109	***	-0.109	***	-0.109	***	-0.109	***
	(-9.11)		(-9.12)		(-9.11)		(-9.13)		(-9.13)	
|Negative Earnings Surprise, deflated|	-0.0989	***	-0.0990	***	-0.0989	***	-0.0989	***	-0.0989	***
	(-10.7)		(-10.7)		(-10.7)		(-10.7)		(-10.7)	
% Forward-Looking Sentences (FLS)	-0. 199	***								
	(-2.84)									
% FLS – Earnings and Quantitative			-0. 604	***			-0. 532	***	-0.00764	***
			(-3.18)				(-2.97)		(-2.97)	
% FLS – Other					-0. 188	**	-0. 179	**	-0. 0128	**
					(-2.54)		(-2.47)		(-2.47)	
Additional control variables	Yes		Yes		Yes		Yes		Yes	
F-Test: *% FLS – Earnings and Quantitative = % FLS – Other* (p-value)							0.07		0.36	
Observations	53,080		53,080		53,080		53,080		53,080	
R-squared	0.16		0.16		0.16		0.16		0.16	

Table 4 Notes:
Panel A shows the results from an OLS regression where the dependent variable is the absolute value of 3-day cumulative stock returns around quarterly earnings announcements. The additional control variables are: *Earnings Volatility*, *Loss*, *Log(Market Value)*, *Book-to-Market*, and *Lagged Volatility*. In Column 5, the FLS variables have been standardized to have a mean of zero and a standard deviation of 1. Variables are defined in Appendix C and standard errors are clustered by industry (2-digit SIC). Coefficients on the forward-looking statement variables have been multiplied by 100 for expositional purposes. Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5 – Earnings announcement properties of forecasting and non-forecasting firms

Variable	Forecasters (n=24,690)	Non-Forecasters (n=42,586)	Diff. In Means
Sentence count	72.6	79.1	**
Forward-looking sentences (FLS)	11.7	11.5	
FLS – earnings-related	2.4	1.6	***
FLS – non-earnings-related	9.3	9.9	
FLS – quantitative	2.7	1.8	***
FLS – non-quantitative	9.0	9.7	
FLS – earnings and quantitative	1.1	0.3	***
FLS – other	10.7	11.2	
% FLS	15.6%	13.6%	***
% FLS - earnings-related	3.4%	1.9%	***
% FLS - non-earnings-related	12.2%	11.7%	
% FLS – quantitative	3.7%	2.1%	***
% FLS - non-quantitative	11.8%	11.5%	
% FLS - earnings and quantitative	1.6%	0.4%	***
% FLS – other	13.9%	13.2%	

Table 5 Notes:
Variables are defined in Appendix C. *** p<0.01, ** p<0.05, * p<0.1

Table 6 – The Effect of Uncertainty on Forward-Looking Disclosures
Panel A: Determinants of Quantitative, Earnings-Related Forward-Looking Statements

	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
Log(Market Value)	0.0992	***	0.0383	***	0.0295	***	0.0323	***	0.0341	***	0.0170	*	0.0335	***
	(3.57)		(3.96)		(3.27)		(3.53)		(3.58)		(1.99)		(3.47)	
Book-to-Market	-0.157	***	-0.0570	***	-0.0509	***	-0.0676	***	-0.0510	***	-0.0703	***	-0.0538	***
	(-3.51)		(-3.70)		(-3.54)		(-5.21)		(-2.94)		(-3.42)		(-3.26)	
Lagged Return	-0.167	***	-0.0391	**	-0.0340	*	-0.0465	**	-0.0393	**	-0.0655	***	-0.0332	*
	(-6.39)		(-2.02)		(-1.71)		(-2.35)		(-2.23)		(-2.81)		(-1.78)	
Analyst Following	-0.0217	**	-0.00839	***	-0.00769	**	-0.00771	**	-0.00805	**	-0.00773	**	-0.00796	***
	(-2.51)		(-2.79)		(-2.55)		(-2.54)		(-2.62)		(-2.60)		(-2.66)	
Lagged FLS Measure			0.639	***	0.636	***	0.635	***	0.641	***	0.641	***	0.635	***
			(47.2)		(47.5)		(46.1)		(46.4)		(50.0)		(49.4)	
Loss					-0.107	***								
					(-3.62)									
Earnings Volatility							-0.809	*						
							(-1.72)							
|Expectations Gap|									-0.627	*				
									(-1.69)					
Implied Volatility											-0.148	***		
											(-2.71)			
Analyst Dispersion													-0.345	***
													(-3.28)	
Observations	67,276		67,276		67,276		58,175		63,303		53,601		54,635	
R-squared	0.017		0.43		0.43		0.42		0.43		0.43		0.43	

Table 6 – The Effect of Uncertainty on Forward-Looking Disclosures
Panel B: Determinants of "Other" Forward-Looking Statements

	(1)	(2)		(3)		(4)		(5)		(6)		(7)	
Log(Market Value)	-0.0405	-0.0167		0.0189		0.0182		-0.00632		-0.0559	*	-0.0539	
	(-0.31)	(-0.46)		(0.47)		(0.43)		(-0.17)		(-1.78)		(-1.55)	
Book-to-Market	-0.402	-0.160		-0.186		-0.112		-0.172		-0.0995		-0.174	
	(-0.97)	(-1.42)		(-1.49)		(-1.18)		(-1.28)		(-0.83)		(-1.59)	
Lagged Return	-0.0788	-0.466	***	-0.487	***	-0.476	***	-0.529	***	-0.392	***	-0.461	***
	(-0.44)	(-5.06)		(-5.52)		(-4.07)		(-4.78)		(-3.44)		(-4.27)	
Analyst Following	0.0295	0.0120		0.00907		0.00857		0.0107		0.00454		0.0152	
	(0.60)	(0.93)		(0.69)		(0.67)		(0.85)		(0.38)		(1.34)	
Lagged FLS Measure		0.736	***	0.735	***	0.737	***	0.738	***	0.738	***	0.738	***
		(51.4)		(54.0)		(54.4)		(53.2)		(54.6)		(52.6)	
Loss				0.427	***								
				(3.30)									
Earnings Volatility						6.432	**						
						(2.02)							
|Expectations Gap|								2.557	*				
								(1.92)					
Implied Volatility										0.316	*		
										(1.68)			
Analyst Dispersion												0.334	
												(0.80)	
Observations	67,276	67,276		67,276		58,175		63,303		53,601		54,635	
R-squared	0.0012	0.54		0.54		0.54		0.54		0.54		0.54	

Table 6 Notes:
Table 6 shows a series of panels where the dependent variable is a measure of forward-looking disclosure in a firm's quarterly earnings announcement. In Panel A, the dependent variable is the percentage of sentences that are forward-looking, quantitative, and earnings-related. In Panel B, the dependent variable is the percentage of sentences that are forward looking but are not jointly quantitative and earnings-related. Variables are defined in Appendix C and standard errors are clustered by industry (2-digit SIC). Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 7 – Sensitivity of *Quantitative vs. Non-Quantitative* Earnings-Related Disclosures to Increased Uncertainty

Uncertainty Proxy	(1) *Quantitative*, Earnings-Related		(2) *Non-Quantitative*, Earnings-Related		(3) p-value of (1) vs. (2)
Loss	-0.0744	***	-0.0252		0.002
	(-3.625)		(-1.220)		
Earnings Volatility	-0.563	*	-0.230		0.180
	(-1.723)		(-1.208)		
|Expectations Gap|	-0.436	*	-0.254		0.480
	(-1.693)		(-1.635)		
Implied Volatility	-0.103	***	-0.0925	***	0.839
	(-2.710)		(-2.928)		
Analyst Dispersion	-0.240	***	0.0475		0.001
	(-3.279)		(0.973)		

Table 7 Notes:
Table 7 summarizes the results from several regressions explaining the proportion of different types of forward-looking sentences in quarterly earnings announcements where we vary the quantitative/non-quantitative dimension, but hold the earnings dimension constant. Columns 1 and 2 each show one coefficient estimate for each of 5 separate regressions, with Column 1's regressions explaining the percentage of *quantitative* earnings-related statements and Column 2's regressions explaining the percentage of *non-quantitative* earnings-related statements. (In other words, each cell shows the coefficient estimate for the uncertainty proxy and suppresses all other coefficients from that regression.) Column 3 reports the statistical significance of the difference in coefficient estimates for each proxy, based on a system of seemingly unrelated regressions that takes into account correlations across the regressions. The uncertainty proxies have been standardized to allow for coefficient comparisons across regressions. Variables are defined in Appendix C and standard errors are clustered by industry (2-digit SIC). Robust t-statistics in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 8 – Sensitivity of *Earnings vs. Non-Earnings* Quantitative Disclosures to Increased Uncertainty

Uncertainty Proxy	(1) Quantitative, *Earnings-Related*		(2) Quantitative, *Non-Earnings*		(3) p-value of (1) vs. (2)
Loss	-0.0744	***	0.0403	***	<0.01
	(-3.625)		(2.589)		
Earnings Volatility	-0.563	*	0.338		0.01
	(-1.723)		(0.879)		
|Expectations Gap|	-0.436	*	0.375	**	<0.01
	(-1.693)		(2.531)		
Implied Volatility	-0.103	***	-0.0116		0.02
	(-2.710)		(-0.341)		
Analyst Dispersion	-0.240	***	0.0497		<0.01
	(-3.279)		(0.772)		

Table 8 Notes:
Table 8 summarizes the results from several regressions explaining the proportion of different types of forward-looking sentences in quarterly earnings announcements where we vary the earnings/non-earnings dimension, but hold the quantitative dimension constant. Columns 1 and 2 each show one coefficient estimate for each of 5 separate regressions, with Column 1's regressions explaining the percentage of quantitative *earnings-related* statements and Column 2's regressions explaining the percentage of quantitative *non-earnings-related* statements. (In other words, each cell shows the coefficient estimate for the uncertainty proxy and suppresses all other coefficients from that regression.) Column 3 reports the statistical significance of the difference in coefficient estimates for each proxy, based on a system of seemingly unrelated regressions that takes into account correlations across the regressions. The uncertainty proxies have been standardized to allow for coefficient comparisons across regressions. Variables are defined in Appendix C and standard errors are clustered by industry (2-digit SIC). Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 9 – Sensitivity of *Non-Quantitative Earnings* vs. *Quantitative Non-Earnings* Disclosures to Increased Uncertainty

Uncertainty Proxy	(1) *Quantitative, Non-Earnings*		(1) *Non-Quantitative, Earnings-Related*		(1) p-value of (1) vs. (2)
Loss	0.0403	***	-0.0252		0.000
	(2.589)		(-1.220)		
Earnings Volatility	0.338		-0.230		0.078
	(0.879)		(-1.208)		
|Expectations Gap|	0.375	**	-0.254		0.000
	(2.531)		(-1.635)		
Implied Volatility	-0.0116		-0.0925	***	0.109
	(-0.341)		(-2.928)		
Analyst Dispersion	0.0497		0.0475		0.970
	(0.772)		(0.973)		

Table 9 Notes:
Table 9 summarizes the results from several regressions explaining the proportion of different types of forward-looking sentences in quarterly earnings announcements where we vary both the earnings and quantitative dimensions. Columns 1 and 2 each show one coefficient estimate for each of 5 separate regressions, with Column 1's regressions explaining the percentage of *quantitative non-earnings-related* statements and Column 2's regressions explaining the percentage of *non-quantitative earnings-related statements*. (In other words, each cell shows the coefficient estimate for the uncertainty proxy and suppresses all other coefficients from that regression.) Column 3 reports the statistical significance of the difference in coefficient estimates for each proxy, based on a system of seemingly unrelated regressions that takes into account correlations across the regressions. The uncertainty proxies have been standardized to allow for coefficient comparisons across regressions. Variables are defined in Appendix C and standard errors are clustered by industry (2-digit SIC). Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1