THE IMPACT OF THE VERB TENSE OF TONE WORDS ON PRICE DISCOVERY IN CONFERENCE CALLS

by

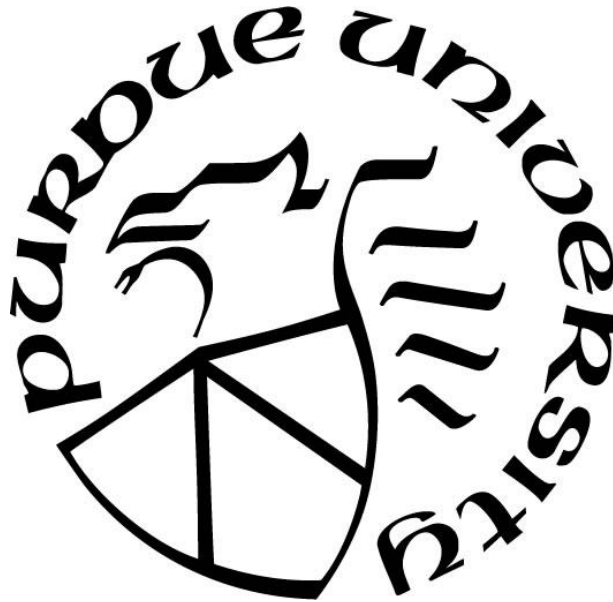**Benjamin Angelo**

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To my loving wife and our four beautiful children. Your enduring patience has carried me through the last five years. I owe you a debt I cannot repay.

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ABSTRACT

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Prior empirical research has shown that forward-looking statements can be particularly informative to investors (Li 2010; Muslu et al. 2014). However, the inherent uncertainty surrounding forward-looking statements may contribute to a delayed price reaction. This paper examines the market reaction to backward-looking statements and to forward-looking statements across a 60 trading-day horizon. I did not find evidence suggesting the inherent uncertainty of forward-looking statements contributes to a delayed price reaction. However, backward-looking statements are associated with a delayed price response. This result is consistent with Bernard and Thomas's (1990) suggestion that post-earnings announcement drift is caused by investors not fully understanding how current earnings map into future earnings. I also provide evidence that, for the prepared remarks, investors have a stronger price reaction to net backward-looking tone than to net forward-looking tone. However, for the question-and-answer session, the opposite is true. Investors have a stronger price reaction to net forward-looking tone than to net backward-looking tone. This result suggests that managers should focus their prepared remarks on the prior performance of the firm and focus their responses during the question-and-answer session on the future performance of the firm.

CHAPTER 1.   INTRODUCTION

Managers may disclose their beliefs about the future performance of the firm by issuing forward-looking statements. Such statements may be informative, but also come with inherent risk and uncertainty. The Private Securities Litigation Reform Act (PSLRA) protects both companies and management from litigation based on forward-looking statements [1] if the firm provides meaningful cautionary statements, warning investors that forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially (Congress 1995). The purpose of this paper is to determine if the inherent uncertainty of forward-looking statements in conference calls contributes to a delayed price reaction.

In order to evaluate investor price response to backward-looking statements and to forward-looking statements, I analyze the text of quarterly earnings conference calls. Conference calls are a unique setting because they contain scripted prepared remarks and extemporaneous question-and-answer sessions. Previous literature has shown that investors respond differently to these two sections (Matsumoto et al. 2011). Within each section, I use positive and negative tone words from the Loughran and McDonald (2011) tone word dictionary to identify informative sentences. I then make tone words conditional on verb tense. I classify tone words associated with past-tense verbs as backward-looking, and tone words associated with other tenses as forward-looking.

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[1] I introduce a new measure of forward-looking statements that includes sentences with either present-tense verbs or future-tense verbs. By analyzing both present-tense sentences and future-tense sentences, my measure attempts to address mixed statements. Mixed statements occur when a statement contains both a non-forward-looking component and a forward-looking component. Rulings in the Sixth Circuit Court and Ninth Circuit Court state that such statements should be read as a whole, and that the protections of the PSLRA extend to both components of the mixed statement (Wellen 2019). A complete discussion including recent judicial interpretation of mixed statements, a detailed description of the construction of my measure, and a discussion of the limitations of my measure is available in Section 4.1: Construction of Backward-Looking Statements and Forward-Looking Statements.

Price, Doran, Peterson, and Bliss (2012) document a relationship between the tone of conference calls and post-earnings announcement drift. I anticipate that the inherent uncertainty of forward-looking statements will contribute to this delayed price reaction. However, my results suggest that backward-looking statements, rather than forward-looking statements, contribute to the delayed price response. This result is consistent with Bernard and Thomas's (1990) suggestion that post-earnings announcement drift is caused by investors not fully understanding how current earnings map into future earnings. It is also consistent with Li (2010), who presents evidence that forward-looking statements are positively correlated with future accounting performance.

This study provides three contributions to the literature. First, I provide evidence that backward-looking tone statements contribute to post-earnings announcement drift, while forward-looking statements do not. Second, my paper introduces a new methodology to measure forward-looking statements. My measure takes a broader view of what constitutes a forward-looking statement, consistent with recent judicial interpretations. Third, I provide evidence that, for the prepared remarks, investors have a stronger price reaction to net backward-looking tone than to net forward-looking tone. However, for the question-and-answer session, investors have a stronger price reaction to net forward-looking tone than to net backward-looking tone. My results suggest that managers should focus their prepared remarks on the prior performance of the firm and focus their responses during the question-and-answer session on future performance.

The remainder of this paper is as follows: Section 2 reviews prior literature; Section 3 develops the hypotheses; Section 4 describes the research design and provides descriptive statistics; Section 5 provides results; Section 6 provides additional analyses; and Section 7 presents the conclusion.

CHAPTER 2.   LITERATURE REVIEW

2.1   Post-Earnings Announcement Drift and a Firm's Information Environment

Post-earnings announcement drift occurs when, following an earnings surprise, a stock continues to earn abnormal returns in the direction of the surprise beyond what an efficient market would predict (Bernard and Thomas 1989). Post-earnings announcement drift is one of the most well documented market anomalies beginning with Ball and Brown (1968)[2]. The predominant explanation for drift says it represents a delayed price reaction because investors behave as if they do not fully understand how current performance maps into future performance (Bernard and Thomas 1990). An increase in uncertainty about a firm's future performance can contribute to a delayed price response (Zhang 2006). Firms can reduce drift by providing supplementary voluntary disclosures to reduce information uncertainty (Zhang 2012; Kimbrough 2005; Francis et al. 2007).

Specifically, when a firm initiates conference calls, post-earnings announcement drift is reduced, but not eliminated (Kimbrough 2005). This reduction in drift is more significant for firms with greater information uncertainty, such as smaller firms, firms with low trading volume, and firms with a low analyst following (Kimbrough 2005).

2.2   Conference Calls and Tone Words

Recent accounting literature has focused on how investors process qualitative information contained in conference calls (Huang et al. 2014; Price et al. 2012; Blau et al. 2015; Allee and

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[2] A large body of literature has studied various aspects of post-earnings announcement drift (PEAD), including studies on the causes of PEAD (Sadka 2006; Hirshleifer et al. 2008), trading strategies exploiting PEAD (Ke and Ramalingegowda 2005; Mendenhall et al. 2004), interpreting PEAD (Garfinkel and Sokobin 2006), and that PEAD cannot be fully arbitraged due to trading costs (Bhushan 1994).

Deangelis 2015; Brockman et al. 2015). Much of this research uses tone as a proxy for information content (Loughran and McDonald 2016). Tone is usually measured by counting words listed as either positive or negative in a tone word dictionary (Loughran and McDonald 2016). Sentences with tone words are likely to be sentences that are informative to investors (Frankel et al. 2016). Net tone can serve as a single measure of overall content (Huang et al. 2014; Price et al. 2012; Blau et al. 2015; Brockman et al. 2015).

The net tone of conference calls is positively associated with stock returns in both the event period and in the drift period (Price et al. 2012). This positive association exists for the prepared remarks, for the question-and-answer session, and for the overall tone of the conference call. Price, Doran, Peterson, and Bliss (2012) note the need for additional research that allows the value of information to vary along different dimensions. Gomez, Heflin, Lee, and Wang (2018) answer this call by looking at 29 separate topic-level proxies for information contained in conference calls. They consider the real-time market impact, an event period window, and a drift period window. They find that sentences discussing capital expenditures, discussing restructuring, and discussing sales all contribute to post-earnings announcement drift.

2.3   Forward-Looking Statements

In addition to being either positive or negative, a tone word may be part of a forward-looking statement or not. As defined by the Congress through the Private Securities Litigation Reform Act of 1995 (PSLRA), forward-looking statements[3] include statements about future accounting performance, statements about future operations or products, and statements about future economic performance (Congress 1995). Additionally, any discussion of the assumptions

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[3] The complete legal definition of forward-looking statement and the text of the Safe Harbor provision are available in Appendix A.

"underlying or relating to" a forward-looking statement are also considered forward-looking statements (Congress 1995). The Safe Harbor provision of the PSLRA protects both companies and management from securities litigation based on forward-looking statements.

The Safe Harbor has two different mechanisms that protect forward-looking statements (Congress 1995). First, the Safe Harbor provision protects forward-looking statements accompanied by "meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statement" (Congress 1995). For conference calls, these cautionary statements could be a warning at the beginning of the call or they could appear throughout the discussion during the call. Second, the Safe Harbor provision gives the plaintiff the burden of proving that management had "actual knowledge that it [the forward-looking statement] was false or misleading" at the time of the forward-looking statement (Congress 1995). This is legally referred to as scienter, the state of mind in which someone knowingly engages in criminal conduct (Johnson et al. 2006). In order to have a successful defense, a defendant needs to meet the requirements for only one of these two protections. Additionally, managers do not have a legal duty to update any forward-looking statements.

Opponents believe the protections offered by the PSLRA are too broad, and may protect managers who make dubious claims about future performance. While the PSLRA is now settled law, the results from empirical studies documenting the market reaction to the passage of the PSLRA are mixed. Initial studies provided evidence of a positive market reaction to the PSLRA, supporting the view that investors believed that the protections of the PSLRA would improve market efficiency (Johnson et al. 2000; Spiess and Tkac 1997). However, Ali and Kallapur (2001) provide evidence that the overall market reaction to the PSLRA was negative, supporting the view that the protections would not improve market efficiency.

The Private Securities Litigation Reform Act has been effective in reducing firms' legal liability based on their forward-looking statements (Cazier et al. 2018). Cazier, Merkley and Treu (2018) document that they fail to find a significant relationship between forward-looking tone and subsequent litigation based on a sample of securities lawsuits from 2005 through 2016, suggesting that the law has been successful in shielding firms from litigation based on forward-looking statements. However, when their sample is restricted to the fifth and seventh circuit courts, which have eroded some of the protections of the PSLRA, they do find a significant relationship between forward-looking tone and subsequent litigation. This suggests that in the absence of the PSLRA, forward-looking statements would have been used against firms in securities litigation. Cazier, Merkley, and Treu (2018) note that "the scant empirical evidence from studies on the safe harbor sheds little light on the protections afforded to qualitative forward-looking statements."

Several papers have studied the market response to forward-looking statements. Li (2010) finds that firms with better current performance have more positive forward-looking statements in the Management's Discussion and Analysis (MD&A) section of their 10-Q and 10-K filings. Additionally, the net tone of forward-looking statements is positively associated with future real accounting performance. Muslu, Radhakrishnan, Subramanyam, and Lim (2014) provide evidence that firms make more forward-looking disclosures in their MD&A when the firm's stock price is less correlated with current and future earnings.

Other studies suggest that investors may have difficulty in processing forward-looking statements. The value of forward-looking information decreased after the passage of Regulation Fair Disclosure in 2000 (Muslu et al. 2014), which bars companies from privately giving material information to investors or analysts. Additionally, the three-day market response to forward-looking tone statements in press releases is approximately 75 percent smaller than the reaction to

backward-looking tone statements (Bonsall et al. 2013). Investors may be wary of qualitative forward-looking statements, because managers of firms with less persistent earnings have an incentive to misdirect investors (Bloomfield 2008). In an international setting, UK firms with an impending downturn have more positive tone in the outlook section of their financial statements (Schleicher and Walker 2010).

2.4   Tone Management

Tone management occurs when a firm stylizes the tone of their qualitative disclosures to shape a particular message. Survey data suggests that the use of tone management is widespread, with 84% of Investor Relations Officers reporting that they have significant input into the prepared remarks of conference calls (Brown et al. 2018). Investor Relations Officers also report that their influence over styling the prepared remarks of conference calls is greater than their influence over styling other forms of disclosure (Brown et al. 2018).

Li (2010) postulated that manipulating qualitative disclosures was a less-costly substitute than managing earnings through financial statement manipulations. However, Huang, Krishnan, and Lin (2018) show that firms manage tone as a complement to earnings management. Firms that meet-or-beat earnings thresholds and firms that have large abnormal accruals are more likely to have excess positive tone.

Tone management has a positive market reaction during the event period, followed by a reversal in the drift period (Huang et al. 2014). Additionally, abnormal tone is negatively related with future one year ahead net income and cash flow, suggesting that firms who manage tone upward experience a future decline in real performance (Huang et al. 2014).

CHAPTER 3.   HYPOTHESIS DEVELOPMENT

Conference calls may help reduce uncertainty about how current earnings map into future earnings, contributing to a reduction in post-earnings announcement drift (Kimbrough 2005). However, they also provide new information. For instance, prior literature finds the net tone of quarterly conference calls is positively associated with both event period returns and post-earnings announcement drift (Price et al. 2012). Price, Doran, Peterson, and Bliss (2012) note the need for more sophisticated techniques to better capture which tone statements contribute to post-earnings announcement drift and which ones resolve it. Using net tone[4] to measure the qualitative content of conference calls allows the value of information to vary based on only one dimension – positive tone vs. negative tone.

Statements in conference calls also vary by being either backward-looking or forward-looking. Both backward-looking statements and forward-looking statements are likely to be informative to investors. I anticipate that backward-looking statements are informative about current earnings. Managers may use the call to provide additional qualitative disclosures to aid investors in understanding current performance. Therefore, I expect a positive association between backward-looking tone and event period returns. Li (2010) provides evidence that forward-looking tone is positively associated with future real accounting performance. Managers may use forward-looking tone to set expectations about future firm performance. Therefore, I also anticipate a positive association between forward-looking tone and event period returns.

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[4] Using net tone to measure information content assumes that all tone words are equally important to investors (Loughran and McDonald 2016).

H1: Net backward-looking tone and net forward-looking tone will be positively associated with event period returns.

The results of Price, Doran, Peterson, and Bliss (2012) suggest that not all information contained in conference calls is processed during the event period because there is uncertainty associated with net tone. I expect that this result is attributable to forward-looking statements. Forward-looking statements are particularly uncertain because they make predictions about the future. Congress has given them special protections through the PSLRA, which limits investors' ability to recover losses associated with forward-looking statements. Uncertainty is associated with a delay in pricing (Zhang 2006; Price et al. 2012). Therefore, I expect that forward-looking statements will contribute to post-earnings announcement drift.

H2: Net forward-looking tone will be positively associated with an increase in post-earnings announcement drift.

While I believe that forward-looking statements generate uncertainty that contributes to post-earnings announcement drift, they may also resolve uncertainty. Li (2010) provides evidence that forward-looking tone is positively associated with future real accounting performance, and is therefore informative about future earnings. Additionally, Muslu, Radhakrishnan, Subramanyam, and Lim (2014) provide evidence that managers increase the amount of forward-looking disclosures when price is less correlated with future firm performance.

Management likely uses backward-looking statements differently. I expect that backward-looking tone statements are used to help investors understand current earnings. For example, backward-looking statements may help investors understand how current earnings map into future earnings. Bernard and Thomas (1990) argue that post-earnings announcement drift is primarily attributable to investors not understanding how current earnings map into future earnings. If

backward-looking statements reduce this uncertainty, they may reduce post-earnings announcement drift.

H3: Net backward-looking tone will be positively associated with a decrease in post-earnings announcement drift.

While backward-looking statements may help investors understand information in earnings, they may also be associated with uncertainty. Recent survey and empirical literature suggests that tone management is widespread, particularly in conference calls (Price et al. 2012; Huang et al. 2014; Huang et al. 2018). Prior empirical literature had not considered how backward-looking statements are managed relative to forward-looking statements. However, firms use complementary strategies to manage both earnings and tone (Huang et al. 2018). This suggests that both backward-looking and forward-looking statements are managed, and therefore subject to uncertainty. This uncertainty in backward-looking statements may contribute to post-earnings announcement drift.

CHAPTER 4.   RESEARCH DESIGN

4.1   Construction of Backward-Looking Statements and Forward-Looking Statements

Prior literature provides three methodologies to identify forward-looking statements. The first two methodologies positively identify forward-looking statements using a list-based approach. Cazier, Merkley, and Treu (2018) claim that using a list-based approach "mimics the approach used by firms themselves to describe which statements in their disclosures are forward-looking in the cautionary language they provide." Under a list-based approach, each sentence is analyzed to determine if it contains a word that indicates the sentence is forward-looking. Li (2010) defines forward-looking statements as sentences containing one or more of the following words: will, should, can, could, may, might, expect, anticipate, believe, plan, hope, intend, seek, project, forecast, objective, and goal. Sentences containing the word "shall" are excluded from analysis because they are considered boilerplate, and therefore uninformative to investors (Li 2010). Alternatively, Muslu, Radhakrishnan, Subramanyam, and Lim (2014) define forward-looking statements as the union of three sets of sentences. A sentence is forward-looking if it contains a reference[5] to a future point of time, if it has a phrase that may indicate a forward-looking statement[6], or if a number in the sentence refers to a subsequent year[7]. Muslu, Radhakrishnan, Subramanyam, and Lim (2014) exclude sentences if they contain any of the following words indicating legal

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[5] Sentences reference a future point of time if they contain one or more of the following: will, future, next fiscal, next month, next period, next quarter, next year, incoming fiscal, incoming month, incoming period, incoming quarter, incoming year, coming quarter, coming year, upcoming fiscal, upcoming month, upcoming period, upcoming quarter, upcoming year, subsequent fiscal, subsequent month, subsequent period, subsequent quarter, subsequent year, following fiscal, following month, following period, following quarter, and following year.

[6] Sentences are forward-looking if they contain phrases similar to "we expect," "and expect," "but expect," "do not expect," "company expects," corporation expects," "and expects," "but expects," does not expect," "is expected," "are expected," "not expected," is expecting," "are expecting," "not expecting," "normally expect," "normally expects," "currently expect," "currently expects," "also expect," and "also expects" for each of the following verbs: aim, anticipate, assume, commit, estimate, expect, forecast, foresee, hope, intend, plan, project, seek, and target.

[7] For example, if "2018" occurs during a 2017 conference call then the sentence is forward-looking.

language: shall, should, can, could, may, or might. Sentences with legal language are considered boilerplate, and therefore uninformative to investors.

The third existing methodology, used by Bonsall, Bozanic, and Merkley (2013), combines the lists from Li (2010) and Muslu, Radhakrishnan, Subramanyam, and Lim (2014) to identify forward-looking statements. However, rather than analyzing all sentences to positively identify forward-looking statements, only sentences containing at least one tone word from the Henry tone word dictionary (Henry 2006) are analyzed. Sentences with tone words are considered forward-looking or uninformative based on the criteria from Li (2010) or Muslu, Radhakrishnan, Subramanyam, and Lim (2014). If a tone word does not meet either of these criteria, then it is non-forward-looking. Bonsall, Bozanic, and Merkley (2013) exclude boilerplate language through two different mechanisms. First, they exclude boilerplate language by excluding sentences that do not contain a tone word. Second, they specifically exclude boilerplate language accompanied by a tone word.

I introduce a new methodology that relies on verb-tense to determine if a sentence is backward-looking or forward-looking. I perform three steps. First, I tag each word with the part-of-speech from the Penn Treebank (Marcus 1993). These part-of-speech tags are particularly well suited for conference calls, because the training data includes articles from the Wall Street Journal and extemporaneous spoken English. Second, I tag words as positive or negative based on the Loughran and McDonald (2011) tone word dictionary. Third, I tag each tone word conditional on the tense of the nearest verb within the same sentence. I consider tone words associated with a past-tense verb as backward-looking and tone words associated with any other verb tense as forward-looking. I omit from analysis any tone word that is not associated with a verb. The majority of these are greetings, such as "good morning." This produces four possible combinations:

positive backward-looking tone, positive forward-looking tone, negative backward-looking tone, and negative forward-looking tone.

My methodology differs from existing methodologies in three key ways. First, my methodology is based on verb tense, while existing methodologies are list-based. List-based approaches have many advantages. They are straightforward, easy to replicate, and take little computing time. However, list based approaches also have several shortcomings. Lists can be incrementally refined or altered, resulting in multiple lists. Multiple lists may conflict with each other, making it difficult to combine them. For example, Li (2010) considers sentences with "should," "can," "could," "may," or "might" as forward-looking while Muslu, Radhakrishnan, Subramanyam, and Lim (2014) consider these same sentences as boilerplate. Lists also assume that the usage of a word is static. For example, Muslu, Radhakrishnan, Subramanyam, and Lim (2014) note that their methodology cannot fully differentiate between "plans" as a noun, such as "health benefit plans," and "plans" as a verb, such as "we plan to introduce a new product." To mitigate this concern, they carefully tailor their word list to reduce the probability of such false positives. My measure, which is based on verb-tense, also has both advantages and disadvantages. My measure can easily determine whether a given word is being used as a noun or a verb based on sentence structure. However, just as lists improve over time, the underlying classifications of verb tense are also likely to improve over time. My approach is more difficult to replicate and requires more computing time.

Second, existing methodologies detect sentences that are forward-looking and classify all other sentences as non-forward-looking. My measure does the opposite. It identifies statements that are backward-looking, and classifies all other statements as forward-looking. As a result, my measure considers both sentences with present-tense verbs and sentences with future-tense verbs

as forward-looking. Not all present-tense verbs constitute forward-looking statements. In context, many present-tense verbs will constitute statements of present fact or even historical fact. This is a clear and valid argument against my measure. It may present a noisier measure of forward-looking statements. However, I argue that my measure more closely reflects recent judicial interpretation of the PSLRA.

While it may seem straightforward to identify forward-looking statements, the process is often litigated in court (Cazier et al. 2018; Wellen 2019). I define forward-looking statements as sentences that may be protected[8] by the Safe Harbor provision of the PSLRA. Two potential issues arise out of this definition.

First, while I define statement as a sentence, a statement is any block of text specifically identified by the plaintiffs in their complaint. This identified text is frequently larger than a single sentence. During a motion to dismiss, courts may only consider "any statement cited in the complaint and any cautionary statement accompanying the forward-looking statement, which are not subject to material dispute, cited by the defendant (Congress 1995)." In other words, the plaintiff must include all text that they claim was false or misleading. However, the defendant (company being sued) may submit to the court any cautionary statements not included in the plaintiff's complaint. By considering cautionary statements, courts recognize that a single sentence must be put in context in order to be fully understood.

Second, I use both present-tense verbs and future-tense verbs to identify statements as forward-looking. I use both types of verbs to acknowledge the difficulty in classifying mixed statements. Mixed statements occur when a single statement contains both a non-forward-looking

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[8] The protections of the PSLRA are built on two prongs. First, a statement must be identified as forward-looking and be accompanied by a meaningful cautionary statement. Second, the plaintiff must prove scienter (a knowledge that the defendant intended to break the law). .

component and a forward-looking component. Courts have given differing opinions on how to process such statements. Some courts have divided mixed statements into non-forward-looking and forward-looking components (Wellen 2019). Forward-looking statements are given the protection of the PSLRA while non-forward-looking statements are not. However, other courts have argued that mixed statements should be analyzed as a whole, and therefore the entire statement should either be considered forward-looking or not (Wellen 2019). For example, the court provided guidance on their logic [9] in evaluating two mixed-statements in The Police Retirement System of St. Louis vs Intuitive Surgical, Inc. (PRS v. Intuitive Surgical, Inc 2014). The first statement considered by the court is "At the present time, we don't have any indicators that tell us that's the case. But we're early into this." The court noted that, in context, this statement is an assumption "underlying or related to" a forward-looking statement. Even though both sentences are in the present tense, they lay a foundation for management's expectation of future firm performance and are therefore considered forward-looking as defined by the PSLRA. The second statement considered by the court is "[T]here's always a decision within a hospital of how do they prioritize their capital investment. I think we come up typically fairly high on that priority list. We aren't hear[ing] anything that causes us any significant concern. No change from last quarter, I guess. " The court noted that this answer was in response to a question about whether the firm's executives were "nervous" about anything in the firm's external environment. Although each sentence is in the present tense, this statement is "is properly understood as regarding [the executive's] expectations of the future impact of the external economic environment on [the company]." These two examples highlight that sentences may be forward-looking even if they are

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[9] The logic used in this case established a new benchmark for evaluating mixed statements, and has been cited in recent motions to dismiss (McGovney v. Aerohive Networks, Inc. 2019; In Re Allied Nevada Gold Corp., Securities Litigation 2016; In Re SolarCity Corporation Securities Litigation 2017).

in the present-tense. The protections of the PSLRA extend to assumptions underlying and supporting forward-looking statements. Additionally, managers may discuss present facts as a foundation for making predictions about the future.

Third, my methodology does not specifically exclude sentences with boilerplate language as defined by Li (2010) or Muslu, Radhakrishnan, Subramanyam, and Lim (2014). All three existing methodologies specifically exclude sentences that may be boilerplate, citing the SEC's guidance that firms should reduce the amount of boilerplate disclosures because they are "generally not helpful in providing useful information" (SEC 2003). However, the PSLRA requires "meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statement" (Congress 1995). Neither boilerplate warnings at the beginning of a conference call, nor general warnings during the call, such as "this is a forward-looking statement," are adequate to invoke the protection of the PSLRA because they do not meet the statutory standard of being "meaningful" (In Re Harman International Industries, Inc. 2015). Consistent with the PSLRA and with the court's interpretation, my measure attempts to exclude boilerplate cautionary statements by excluding sentences with no tone word, while including meaningful cautionary statements by not further excluding sentences with specific language that may be cautionary. Existing methodologies do not distinguish between boilerplate and meaningful cautionary statements.

Loughran and McDonald (2016) note the need for transparency when introducing new techniques in textual analysis. Researchers should be cautious of both the advantages and the disadvantages of adopting my methodology. My measure adds to the literature by relying on part-of-speech tags from the Penn Treebank (Marcus 1993) to classify tone statements as backward-looking or forward-looking. The Penn Treebank is well-cited and widely used outside of

accounting literature. Using these part-of-speech tags helps to harmonize accounting empirical literature with linguistic literature. My measure also adds to the literature by taking a broader view of what constitutes a forward-looking statement, which is more consistent with recent judicial interpretation. Finally, my measure improves existing methodologies by attempting to exclude boilerplate cautionary language while including meaningful cautionary language.

4.2 Model Specification

To provide evidence of the market response to backward-looking tone statements and to forward-looking tone statements, I estimate three models. Each model includes two regressions, an event period regression and a drift period regression. In the first model, I use net tone to measure the information content of the call. In the second model, I use net backward-looking tone and net forward-looking tone to measure the information content of the call. In the third model, I further separate net backward-looking tone and net forward-looking tone into positive and negative components.

4.2.1 Net Tone Model

In the first model, I use net tone to measure the information content of a conference call. This model allows me to establish a baseline level of post-earnings announcement drift associated with the net tone of conference calls. I estimate the following two regressions:

(1*a*) $CAR_{it} = \alpha + \beta_1 NETTONE_{it} + \beta_2 TONEW_{it} + \beta_3 TOTALW_{it} + \beta_4 SIZE_{it} + \beta_5 LEVERAGE_{it}$
$\qquad + \beta_6 BTM_{it} + \beta_7 QTR4_{it} + \Sigma_1 YEARFE + \Sigma_2 INDUSTRYFE + \varepsilon_{it}$

(1*b*) $DRIFTCAR_{it} = \alpha + \beta_1 NETTONE_{it} + \beta_2 TONEW_{it} + \beta_3 TOTALW_{it} + \beta_4 SIZE_{it} + \beta_5 LEVERAGE_{it}$
$\qquad + \beta_6 BTM_{it} + \beta_7 QTR4_{it} + \Sigma_1 YEARFE + \Sigma_2 INDUSTRYFE + \varepsilon_{it}$

Subscripts *i* and *t* represent firm and time, respectively. The event period regression (1a) uses the 3-day cumulative abnormal return centered on the date of the call (CAR) as the dependent

variable. I calculate returns using the WRDS Event Study with a market-adjusted model. The primary variable of interest is net tone (NETTONE), which equals positive tone words minus negative tone words, scaled by total tone words. Tone words are defined by the Loughran and McDonald (2011) tone word dictionary. I anticipate net tone to be positively associated with event period returns.

I do not separately control for earnings surprise. Alternatively, I divide my sample into good news firms and bad news firms. Good news firms are firms with a value of zero or greater for earnings surprise, measured as earnings per share for the current quarter minus earnings per share in the same quarter for the prior year, scaled by the prior year's price. I use this approach to address the non-linear response between bad news and good news (Basu 1997). Investors have greater timeliness in responding to good news than in responding to bad news (Basu 1997). Li (2010) suggests that managers may speak longer to make it more difficult for listeners to process the statements in the text. Therefore, I control for both the total number of tone words (TONEW) and the total number of words spoken by management (TOTALW). Consistent with Li (2010), I predict a negative sign during the event period. I control for the firm's information environment. Larger firms, measured by the log of total assets (SIZE), have more publicly available information, which should lead to a muted response. Therefore, I predict a negative sign for the coefficient. To control for the demand of information for firms in financial distress, I control for firm leverage (LEVERAGE). Investors will be more sensitive to supplemental disclosures as the demand for information increases. Therefore, I anticipate a positive sign on this coefficient. I control for a firm's growth opportunities by controlling for the firm's book-to-market ratio (BTM). I anticipate growth opportunities to be positively associated with returns, suggesting a positive coefficient. I use a dummy to indicate if the call is for the firm's fourth fiscal quarter (QTR4). The fourth quarter

may receive higher investor attention, contributing to a larger market reaction. I anticipate a positive coefficient. Finally, I estimate the model with year and industry fixed effects to help control for any systematic variation across time and industry, respectively. Industry fixed effects are based on Fama-French 12 industries. I present complete definitions and measurements of all variables in Appendix A.

The drift period regression (1b) uses the cumulative abnormal return from 2 to 60 trading days after the conference call (DRIFTCAR) as the dependent variable. Using a drift window of 60 trading days approximates the amount of time between quarterly conference calls. I calculate returns using the WRDS Event Study with a market-adjusted model. The primary variable of interest is net tone (NETTONE), which is identical to the specification in the event period model. Consistent with Price, Doran, Peterson, and Bliss (2012), I anticipate a positive coefficient on net tone in the drift period. Controls for this model are identical to the event period model. While I predict a negative coefficient for total words and total tone words in the event period, I predict a positive coefficient in the drift period. This is consistent with Li (2010), who suggests that as the amount of information in a call increases, investors will take longer to process the call, contributing to post-earnings announcement drift. I predict a positive coefficient for the dummy variable indicating the firm's fourth fiscal quarter in the event period, and I predict a negative sign in the drift period. This is consistent with increased investor attention accelerating price discovery. The predicted signs for remaining control variables will be consistent with the event period model.

4.2.2 Net Backward-Looking Tone and Net Forward-Looking Tone Model

In the second model, I divide net tone into net backward-looking tone and net forward-looking tone. This model allows me to measure the differential market response to these two types of tone across the event and drift periods. I estimate following two regressions:

$$(2a) \quad CAR_{it} = \alpha + \beta_1 NETBACK_{it} + \beta_2 NETFWD_{it} + \beta_3 TONEW_{it} + \beta_4 TOTALW_{it} + \beta_5 SIZE_{it}$$
$$+ \beta_6 LEVERAGE_{it} + \beta_7 BTM_{it} + \beta_8 QTR4_{it} + \Sigma_1 YEARFE + \Sigma_2 INDUSTRYFE + \varepsilon_{it}$$

$$(2b) \quad DRIFTCAR_{it} = \alpha + \beta_1 NETBACK_{it} + \beta_2 NETFWD_{it} + \beta_3 TONEW_{it} + \beta_4 TOTALW_{it} + \beta_5 SIZE_{it}$$
$$+ \beta_6 LEVERAGE_{it} + \beta_7 BTM_{it} + \beta_8 QTR4_{it} + \Sigma_1 YEARFE + \Sigma_2 INDUSTRYFE + \varepsilon_{it}$$

Subscripts i and t represent firm and time, respectively. The event period regression (2a) uses the event period cumulative abnormal return (CAR) as the dependent variable. The primary variables of interest are net backward-looking tone (NETBACK) and net forward-looking tone (NETFWD). Net backward-looking tone is equal to the total number of positive backward-looking tone words minus the total number of negative backward-looking tone words, scaled by total backward-looking tone words. I anticipate a positive coefficient on net backward-looking tone because I anticipate backward-looking tone to be informative. Net forward-looking tone is equal to the total number of positive forward-looking tone words minus the total number of negative forward-looking tone words, scaled by total forward-looking tone words. I anticipate a positive coefficient on net forward-looking tone because I anticipate forward-looking tone to be informative. Remaining controls for this model and their predicted signs will be identical to the event period regression from the first model (1a).

The drift period regression (2b) uses the cumulative abnormal return from 2 to 60 trading days after the conference call (DRIFTCAR) as the dependent variable. The primary variables of interest are net backward-looking tone (NETBACK) and net forward-looking tone (NETFWD), which are identical to the specification in the event period regression (2a). I expect backward-looking tone to be informative about earnings, contributing to a reduction in post-earnings announcement drift. Therefore, I predict a negative coefficient on net backward-looking tone. I predict a positive coefficient on net forward-looking tone, consistent with uncertainty contributing

to a delayed price reaction. Remaining controls for this model and their predicted signs will be identical to the drift period regression from the first model (1b).

4.2.3 Individual Components of Tone Model

In the third model, I separate net tone into four components: positive backward-looking tone (POSBACK); positive forward-looking tone (POSFWD); negative backward-looking tone (NEGBACK); and negative forward-looking tone (NEGFWD). This model allows me to examine the market response to the four possible combinations of tone and tense. I estimate the following two regressions:

$$
\begin{aligned}
(3a) \quad CAR_{it} = {} & \alpha + \beta_1 POSBACK_{it} + \beta_2 POSFWD_{it} + \beta_3 NEGBACK_{it} + \beta_4 NEGFWD_{it} \\
& + \beta_5 TOTALW_{it} + \beta_6 SIZE_{it} + \beta_7 LEVERAGE_{it} + \beta_8 BTM_{it} + \beta_9 QTR4_{it} \\
& + \Sigma_1 YEARFE + \Sigma_2 INDUSTRYFE + \varepsilon_{it}
\end{aligned}
$$

$$
\begin{aligned}
(3b) \quad DRIFTCAR_{it} = {} & \alpha + \beta_1 POSBACK_{it} + \beta_2 POSFWD_{it} + \beta_3 NEGBACK_{it} + \beta_4 NEGFWD_{it} \\
& + \beta_5 TOTALW_{it} + \beta_6 SIZE_{it} + \beta_7 LEVERAGE_{it} + \beta_8 BTM_{it} + \beta_9 QTR4_{it} \\
& + \Sigma_1 YEARFE + \Sigma_2 INDUSTRYFE + \varepsilon_{it}
\end{aligned}
$$

Subscripts i and t represent firm and time, respectively. The dependent variable for the event period regression (3a) is the event period cumulative abnormal return (CAR). The primary variables of interest are a count of positive backward-looking tone words (POSBACK), a count of positive forward-looking tone words (POSFWD), a count of negative backward-looking tone words (NEGBACK), and a count of negative forward-looking tone words (NEGFWD). I anticipate a positive coefficient for both positive backward-looking tone and positive forward-looking tone in the event period. This is consistent with investors reacting positively to good news. Alternatively, I anticipate a negative coefficient for both negative backward-looking tone and negative forward-looking tone. This is consistent with investors responding negatively to bad news. Controls for this model and anticipated signs will be identical to the event period regression of the first model (1a),

with one exception. I exclude total tone words (TONEW) because it is a linear combination of POSBACK, POSFWD, NEGBACK, and NEGFWD.

The drift period regression (3b) uses the cumulative abnormal return from 2 to 60 trading days after the conference call (DRIFTCAR) as the dependent variable. The primary variables of interest are a count of positive backward-looking tone words (POSBACK); a count of positive forward-looking tone words (POSFWD); a count of negative backward-looking tone words (NEGBACK); and a count of negative forward-looking tone words (NEGFWD), which are identical to the specification in the event period regression (3a). I anticipate that backward-looking tone will be informative about earnings, and contribute to a reduction in post-earnings announcement drift. Therefore, I anticipate a negative coefficient for positive backward-looking tone and for negative backward-looking tone. Alternatively, I anticipate the uncertainty of forward-looking tone statements will contribute to post-earnings announcement drift. Therefore, I anticipate a positive coefficient for positive forward-looking tone and for negative forward-looking tone. Controls for this model, including predicted signs, will be identical to the event period regression from the first model (1b) with one exception. I exclude total tone words (TONEW) because they are a linear combination of POSBACK, POSFWD, NEGBACK, and NEGFWD.

4.3   Sample Selection and Descriptive Statistics

I obtained conference call transcripts for U.S. firms publicly listed on the NYSE or NASDAQ stock exchanges from the Fair Disclosure Wire. My sample period includes all quarterly earnings calls from 2011 through 2015. Because I studied the impact of conference calls on post-earnings announcement drift, the sample is restricted to calls that occurred between one day before

the earnings release and one day after the earnings release[10]. I also excluded calls for firms with a

stock price of less than $5. I obtained financial data from Compustat and returns data from WRDS

Event Study. My final sample consisted of 32,387 calls by 3,090 unique firms. The total number

of observations, including observations by year and industry, is available in Table 1. There is an

upward trend in the number of observations by year between 2011 and 2015. My sample appears

reasonably distributed across all 12 industries for each year and in the aggregate.

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[10] I use the report date of quarterly earnings (RDQ in Compustat) to determine earnings release dates. This restriction ensures that both the earnings release and the conference call occur during the event period window.

Table 1: Construction of Sample

Panel A: Number of Observations

Processed calls	47,965
Less: Calls not within one day of earnings release	7,437
Calls within one day of earnings release	40,528
Less: Firms missing control variables	
Firms with no match in Compustat	3,563
Firms with missing returns	1,017
Firms with price less than five dollars	3,561
Final number of observations	32,387
Good news observations	18,657
Bad news observations	13,730
Total observations	32,387
Number of Firms	3,090

Panel B: Observations by Year and Industry

	2011	2012	2013	2014	2015	Total
Non-Durable Goods	199	304	311	326	342	1,482
Durable Goods	107	171	156	165	162	761
Manufacturing	423	691	681	718	709	3,222
Energy	140	289	341	335	368	1,473
Chemicals	102	191	190	177	206	866
Business Equipment	751	1,186	1,212	1,328	1,466	5,943
Telecommunication	77	157	161	179	206	780
Utilities	110	214	238	218	218	998
Wholesale & Retail	482	679	659	730	761	3,311
Medical Services	307	558	526	650	782	2,823
Financial Services	722	1,291	1,278	1,476	1,694	6,461
Other Services	511	878	901	960	1,017	4,267
Total Observations	3,931	6,609	6,654	7,262	7,931	32,387

I present univariate statistics in Table 2. Variable definitions are available in Appendix A.

Panel A presents univariate statistics for conference call characteristics, while Panel B provides

univariate statistics for firm characteristics. Consistent with prior research, the net tone of both the prepared remarks and the question-and-answer sessions is positive (Huang et al. 2014; Price et al. 2012). I present a breakdown of conference call characteristics by year and by industry for both the prepared remarks and for the question-and-answer sessions in Panel C. Conference call characteristics for the prepared remarks appear to vary across industries. Net tone ranges from 0.3645 for Financial Services firms to 0.4965 for Telecommunication firms. Net tone, net backward-looking tone, and net forward-looking tone all appear to be increasing across time for the question-and-answer sessions. I will use year fixed-effects to control for this trend. Conference call characteristics for the question-and-answer sessions appear to vary across industry.

Table 2: Univariate Statistics

Panel A: Conference Call Characteristics

Variable	N	Mean	Std. Dev.	25th Pct.	75th Pct.
PRNETTONE	32,375	0.4224	0.2744	0.2500	0.6214
PRNETBACK	32,330	0.2477	0.3643	0.0000	0.5122
PRNETFWD	32,366	0.4897	0.2675	0.3333	0.6825
PRPOSBACK	32,387	17.9	11.6	10	24
PRPOSFWD	32,387	36.2	22.0	21	47
PRNEGBACK	32,387	11.1	9.0	5	15
PRNEGFWD	32,387	12.0	9.3	6	16
PRTONEW	32,387	77.2	41.4	48	98
PRTOTALW	32,387	3,365	1,419	2,433	4,076
QANETTONE	32,362	0.4099	0.2698	0.2500	0.5946
QANETBACK	31,931	0.1972	0.4475	-0.0769	0.5000
QANETFWD	32,353	0.4410	0.2674	0.2877	0.6250
QAPOSBACK	32,362	8.5	6.4	4	12
QAPOSFWD	32,362	34.2	21.0	19	46
QANEGBACK	32,362	5.5	4.6	2	8
QANEGFWD	32,362	12.9	9.4	6	17
QATONEW	32,387	61.1	34.5	36	81
QATOTALW	32,387	3,520	1,762	2,237	4,562

Note: PR indicates the prepared remarks. QA indicates the question-and-answer session.

Panel B: Firm Characteristics

Variable	N	Mean	Std. Dev.	25th Pct.	75th Pct.
CAR	32,387	0.1369	7.2498	-3.4473	3.8497
DRIFTCAR	30,994	-0.3961	13.2695	-6.9582	6.7856
SURP	32,372	0.0343	3.3569	-0.4549	0.5710
SIZE	32,369	7.7161	1.7904	6.4351	8.8643
LEVERAGE	29,704	0.2180	0.2065	0.0378	0.3368
BTM	32,354	0.5562	0.5613	0.2586	0.7482
QTR4	32,387	0.24	0.42	0	0

Table 2 continued

Panel C: Univariate Statistics for Conference Call Characteristics by Year and Industry

YEAR	PRNETTONE	PRNETBACK	PRNETFWD	PRTONEW	PRTOTALW
2011	0.4116	0.2525	0.4707	74.4	3,241.2
2012	0.3931	0.2176	0.4624	76.5	3,347.9
2013	0.4268	0.2540	0.4951	79.2	3,463.2
2014	0.4470	0.2689	0.5137	75.4	3,312.0
2015	0.4258	0.2458	0.4956	79	3,404.8

INDUSTRY	PRNETTONE	PRNETBACK	PRNETFWD	PRTONEW	PRTOTALW
Non-Durable Goods	0.4619	0.3025	0.5321	91.6	3,570.1
Durable Goods	0.4297	0.2692	0.4899	90.1	3,589.3
Manufacturing	0.3964	0.2360	0.4644	79.0	3,211.3
Energy	0.3674	0.1943	0.4335	65.0	3,335.3
Chemicals	0.3843	0.2425	0.4507	93.4	3,541.1
Business Equipment	0.4826	0.3151	0.5407	72.9	3,334.4
Telecommunication	0.4965	0.2914	0.5504	76.7	3,458.7
Utilities	0.3699	0.1737	0.4335	64.7	3,547.6
Wholesale & Retail	0.4908	0.3144	0.5578	80.7	3,390.2
Medical Services	0.3938	0.2277	0.4500	75.8	3,498.1
Financial Services	0.3645	0.1841	0.4410	77.0	3,263.7
Other Services	0.4221	0.2265	0.4998	76.7	3,369.4

YEAR	QANETTONE	QANETBACK	QANETFWD	QATONEW	QATOTALW
2011	0.3828	0.1629	0.4050	62.6	3,673.8
2012	0.3775	0.1630	0.4132	59.9	3,463.3
2013	0.4162	0.2024	0.4522	62.4	3,605.4
2014	0.4332	0.2188	0.4650	60.2	3,446.9
2015	0.4236	0.2183	0.4508	61	3,486.4

INDUSTRY	QANETTONE	QANETBACK	QANETFWD	QATONEW	QATOTALW
Non-Durable Goods	0.4710	0.2817	0.4960	69.6	3,662.4
Durable Goods	0.4320	0.1942	0.4575	64.9	3,648.6
Manufacturing	0.3939	0.1740	0.4222	64.5	3,586.9
Energy	0.3894	0.1806	0.4100	57.7	3,728.8
Chemicals	0.3786	0.1248	0.4236	67.2	3,638.7
Business Equipment	0.4574	0.2611	0.4858	61.0	3,555.3
Telecommunication	0.4435	0.2215	0.4809	61.4	3,551.2
Utilities	0.3472	0.0360	0.3571	38.2	2,711.7
Wholesale & Retail	0.4869	0.2981	0.5169	65.9	3,607.0
Medical Services	0.3892	0.1988	0.4136	59.3	3,491.4
Financial Services	0.3455	0.1356	0.3817	58.6	3,414.6
Other Services	0.4039	0.1620	0.4465	61.8	3,546.4

Table 2 continued

Panel D: Bad News Firms versus Good News Firms

Panel A presents the mean value for conference call characteristics for both the prepared remarks and the question-and-answer session for both bad news firms and for good news firms. Bad news firms are firms with a negative value for earnings surprise. Good news firms are firms with a positive value for earnings surprise. I also present the difference between the means of the two subsamples, and the p-value for a two-tailed t-test with pooled variance. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Variable	Bad News	Good News	Difference	p-value	
PRNETTONE	0.3674	0.4628	0.0954	<.0001	***
PRNETBACK	0.1646	0.3088	0.1442	<.0001	***
PRNETFWD	0.4532	0.5166	0.0634	<.0001	***
PRPOSBACK	16.9	18.7	1.8	<.0001	***
PRPOSFWD	36.1	36.2	0.1	0.6178	
PRNEGBACK	12.4	10.1	-2.4	<.0001	***
PRNEGFWD	13.2	11.1	-2.0	<.0001	***
PRTONEW	78.6	76.1	-2.5	<.0001	***
PRTOTALW	3,431	3,316	-115	<.0001	***
QANETTONE	0.3812	0.4310	0.0498	<.0001	***
QANETBACK	0.1525	0.2299	0.0774	<.0001	***
QANETFWD	0.4177	0.4582	0.0405	<.0001	***
QAPOSBACK	8.0	8.9	0.9	<.0001	***
QAPOSFWD	33.0	35.1	2.1	<.0001	***
QANEGBACK	5.7	5.4	-0.3	<.0001	***
QANEGFWD	13.2	12.7	-0.6	<.0001	***
QATONEW	59.9	62.1	2.2	<.0001	***
QATOTALW	3,464	3,562	98	<.0001	***

Panel D presents descriptive statistics for conference call characteristics for good news firms and for bad news firms. I consider firms with a value of earnings surprise greater than or equal to zero as good news firms. Firms with a negative value for earnings surprise are considered bad news firms. I present t-tests for differences between the means of conference call characteristics for these two subsamples.

Good news firms generally have more positive tone and less negative tone than bad news firms in both the prepared remarks and in the question-and-answer session. However, there is no statistical difference between forward-looking positive tone during the prepared remarks for good news firms and for bad news firms. The lack of a difference suggests bad news firms may manage their forward-looking positive tone upward to mimic the tone of good news firms.

I present correlations in Table 3. Net tone, net backward-looking tone, and net forward-looking tone are highly correlated with each other. For the prepared remarks, net tone, net backward-looking tone, and net forward-looking tone are positively correlated with event period cumulative abnormal returns at the 1% level. Net tone and net backward-looking tone remain correlated with returns at the 1% level in the drift period, however, the significance for net forward-looking tone drops to just below 5%. For the question-and-answer session, net tone, net backward-looking tone, and net forward-looking tone are positively correlated with event period cumulative abnormal returns at the 1% level. In the drift period, net tone, and net backward-looking tone remain correlated with returns at the 1% level, however, net forward-looking tone is not significantly correlated with drift period returns.

Table 3: Pairwise Correlations

Panel A: Prepared Remarks

Panel A presents pairwise correlations for variables of interest for the prepared remarks. Pearson (Spearman) correlations are shown below (above) the diagonal. Two-sided p-values are shown below each correlation coefficient. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% levels, respectively. Please see Appendix A for variable definitions.

	CAR	DRIFTCAR	PRNETBACK	PRNETFWD	PRNETTONE	PRTONEW	PRTOTALW	SURP	SIZE	LEVERAGE	BTM	QTR4
CAR		0.029	0.168	0.102	0.145	-0.016	-0.022	0.104	-0.015	-0.015	-0.003	0.016
		<.0001***	<.0001***	<.0001***	<.0001***	0.0042***	<.0001***	<.0001***	0.0078***	0.0085***	0.5835	0.0051***
DRIFTCAR	0.036		0.032	0.011	0.022	0.005	-0.003	0.040	0.001	0.005	-0.007	-0.008
	<.0001**		<.0001***	0.0643*	0.0001***	0.3488	0.6423	<.0001***	0.8468	0.4418	0.2087	0.1379
PRNETBACK	0.171	0.036		0.511	0.825	0.032	0.027	0.102	0.013	-0.165	-0.186	0.028
	<.0001***	<.0001***		<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	0.024**	<.0001***	<.0001***	<.0001***
PRNETFWD	0.107	0.011	0.510		0.870	0.014	0.011	0.067	-0.056	-0.132	-0.140	0.004
	<.0001***	0.0509*	<.0001***		<.0001***	0.0144**	0.039**	<.0001***	<.0001***	<.0001***	<.0001***	0.4458
PRNETTONE	0.152	0.025	0.828	0.867		-0.002	0.005	0.093	-0.038	-0.167	-0.188	0.007
	<.0001***	<.0001***	<.0001***	<.0001***		0.6694	0.3585	<.0001***	<.0001***	<.0001***	<.0001***	0.2134
PRTONEW	-0.014	0.004	0.025	-0.005	-0.010		0.834	-0.010	0.249	0.061	0.014	0.122
	0.0119**	0.5225	<.0001***	0.3501	0.0785*		<.0001***	0.0632*	<.0001***	<.0001***	0.0124**	<.0001***
PRTOTALW	-0.023	-0.006	0.014	-0.016	-0.010	0.821		-0.013	0.184	0.038	-0.021	0.147
	<.0001***	0.3245	0.0119**	0.005***	0.0665*	<.0001***		0.0185**	<.0001***	<.0001***	0.0002***	<.0001***
SURP	0.183	0.046	0.192	0.118	0.168	-0.022	-0.037		0.002	-0.036	-0.058	-0.001
	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***		0.6644	<.0001***	<.0001***	0.9054
SIZE	-0.018	0.006	0.006	-0.056	-0.038	0.224	0.178	0.029		0.437	0.167	-0.006
	0.0016***	0.2675	0.2878	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***		<.0001***	<.0001***	0.3027
LEVERAGE	-0.018	0.013	-0.154	-0.124	-0.158	0.082	0.060	-0.003	0.506		0.341	0.015
	0.0014***	0.0262**	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	0.5976	<.0001***		<.0001***	0.0112**
BTM	-0.009	-0.004	-0.230	-0.170	-0.228	0.007	-0.052	-0.053	0.179	0.359		0.008
	0.0939*	0.4414	<.0001***	<.0001***	<.0001***	0.2166	<.0001***	<.0001***	<.0001***	<.0001***		<.0001***
QTR4	0.013	-0.006	0.028	0.000	0.004	0.110	0.140	0.003	-0.007	0.017	0.010	
	0.0242**	0.3066	<.0001***	0.9536	0.4314	<.0001***	<.0001***	0.6387	0.2400	0.0040***	0.0619*	

Table 3 continued

Panel B: Question-and-Answer Session

Panel B presents pairwise correlations for variables of interest for the question-and-answer session. Pearson (Spearman) correlations are shown below (above) the diagonal. Two-sided p-values are shown below each correlation coefficient. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% levels, respectively. Please see Appendix A for variable definitions.

	CAR	DRIFTCAR	QANETBACK	QANETFWD	QANETTONE	QATONEW	QATOTALW	SURP	SIZE	LEVERAGE	BTM	QTR4
CAR		0.029	0.112	0.105	0.130	-0.006	-0.020	0.104	-0.015	-0.015	-0.003	0.016
		<.0001***	<.0001***	<.0001***	<.0001***	0.2549	0.0004***	<.0001***	0.0078***	0.0085***	0.5835	0.0051***
DRIFTCAR	0.036		0.025	0.007	0.015	0.007	-0.002	0.040	0.001	0.005	-0.007	-0.008
	<.0001***		<.0001***	0.2376	0.0085***	0.2019	0.7576	<.0001***	0.8468	0.4418	0.2087	0.1379
QANETBACK	0.120	0.024		0.377	0.650	0.084	0.035	0.040	-0.032	-0.118	-0.125	0.009
	<.0001***	<.0001***		<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	0.1195
QANETFWD	0.107	0.007	0.389		0.909	0.054	0.001	0.034	-0.065	-0.115	-0.129	0.007
	<.0001***	0.2373	<.0001***		<.0001***	<.0001***	0.9285	<.0001***	<.0001***	<.0001***	<.0001***	0.2309
QANETTONE	0.133	0.016	0.664	0.906		0.050	-0.003	0.043	-0.066	-0.130	-0.145	0.007
	<.0001***	0.0054***	<.0001***	<.0001***		<.0001***	0.6381	<.0001***	<.0001***	<.0001***	<.0001***	0.2246
QATONEW	0.000	0.012	0.064	0.033	0.040		0.885	0.009	0.343	-0.016	-0.110	0.010
	0.9690	0.0351**	<.0001***	<.0001***	<.0001***		<.0001***	0.1204	<.0001***	0.0068***	<.0001***	0.0735*
QATOTALW	-0.016	0.003	0.013	-0.027	-0.017	0.892		0.002	0.341	-0.009	-0.114	0.022
	0.0035***	0.5716	0.016**	<.0001***	0.0022***	<.0001***		0.7467	<.0001***	0.1311	<.0001***	0.0001***
SURP	0.183	0.046	0.073	0.066	0.081	0.016	0.008		0.002	-0.036	-0.058	-0.001
	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	0.0049***	0.1315		0.6644	<.0001***	<.0001***	0.9054
SIZE	-0.018	0.006	-0.038	-0.065	-0.064	0.350	0.355	0.029		0.437	0.167	-0.006
	0.0016***	0.2675	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***		<.0001***	<.0001***	0.3027
LEVERAGE	-0.018	0.013	-0.118	-0.108	-0.124	0.019	0.022	-0.003	0.506		0.341	0.015
	0.0014***	0.0262**	<.0001***	<.0001***	<.0001***	0.0014***	0.0002***	0.5976	<.0001***		<.0001***	0.0112**
BTM	-0.009	-0.004	-0.151	-0.145	-0.167	-0.164	-0.180	-0.053	0.179	0.359		0.008
	0.0939*	0.4414	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***	<.0001***		0.1507
QTR4	0.013	-0.006	0.009	0.006	0.006	0.003	0.013	0.003	-0.007	0.017	0.010	
	0.0242**	0.3066	0.1268	0.2606	0.2871	0.5476	0.0176**	0.6387	0.2400	0.0040***	0.0619*	

CHAPTER 5.   RESULTS

5.1   Analysis Using Net Tone

I first consider the market reaction to net tone. This allows me to establish a baseline level of drift associated with the net tone of conference calls consistent with the results of Price, Doran, Peterson, and Bliss (2012).

In the event period, the net tone of the prepared remarks is highly positively associated with returns for both good news and for bad news firms (Table 4). Firms that disclose good news through positive net tone have higher returns, while firms that disclose bad news through negative net tone have lower returns. Size is negatively associated with returns for good news firms. Larger firms have a smaller market reaction because they have more public information. However, for bad news firms, size is positively associated with returns. Good news firms with a high demand for information, measured by leverage, have a larger market reaction. Good news firms with high growth opportunities, measured by the book-to-market ratio, also have a larger market reaction. Returns for the fourth fiscal quarter are higher for bad news firms, which I interpret as a larger market reaction due to increased investor attention.

Table 4: Market Reaction to Net Tone

Panel A: Regression Results of Cumulative Abnormal Returns on Net Tone of the Prepared Remarks

Panel A presents the results from OLS regressions where the dependent variable is the cumulative abnormal return. Returns are presented for the event period of -1 to 1 trading days, where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Anticipated signs for coefficients are presented. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

		EVENT PERIOD (Model 1a)					DRIFT PERIOD (Model 1b)			
	+/-	GOOD NEWS		BAD NEWS		+/-	GOOD NEWS		BAD NEWS	
PRNETTONE	+	3.8052		3.2685		+	0.7239		1.2503	
		<.0001	***	<.0001	***		0.072	*	0.007	***
PRTONEW	-	0.0007		0.0005		+	0.0050		0.0109	
		0.768		0.860			0.266		0.069	*
PRTOTALW	-	-0.0001		-0.0001		+	-0.0001		-0.0003	
		0.312		0.161			0.363		0.084	*
SIZE	-	-0.2714		0.1705		-	-0.1535		0.1364	
		<.0001	***	<.0001	***		0.021	**	0.108	
LEVERAGE	+	0.9683		0.1006		+	1.5341		0.8663	
		0.014	**	0.809			0.031	**	0.351	
BTM	+	0.6937		0.1883		+	0.2870		-0.9768	
		0.001	***	0.193			0.396		0.005	***
QTR4	+	0.0125		0.6096		-	-0.5607		0.2551	
		0.921		<.0001	***		0.015	**	0.407	
INTERCEPT	+/-	1.4331		-3.9598		+/-	-0.3398		-3.8141	
		0.000	***	<.0001	***		0.614		<.0001	***
INDUSTRY FE		YES		YES			YES		YES	
YEAR FE		YES		YES			YES		YES	
R-SQUARED		0.027		0.020			0.014		0.015	
N		16,967		12,725			16,351		12,097	

Table 4 continued

Panel B: Regression Results of Cumulative Abnormal Returns on Net Tone of the Question-and-Answer Session

Panel B presents the results from OLS regressions where the dependent variable is the cumulative abnormal return. Returns are presented for the event period of -1 to 1 trading days, where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Anticipated signs for coefficients are presented. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	+/-	EVENT PERIOD (Model 1a) GOOD NEWS		BAD NEWS		+/-	DRIFT PERIOD (Model 1b) GOOD NEWS		BAD NEWS	
QANETTONE	+	3.2162		3.4482		+	0.9019		0.6105	
		<.0001	***	<.0001	***		0.024	**	0.209	
QATONEW	-	0.0011		0.0070		+	0.0090		0.0184	
		0.766		0.097	*		0.138		0.017	**
QATOTALW	-	-0.0001		-0.0002		+	-0.0003		-0.0002	
		0.118		0.059	*		0.021	**	0.260	
SIZE	-	-0.2175		0.1891		-	-0.0881		0.0877	
		<.0001	***	<.0001	***		0.214		0.339	
LEVERAGE	+	0.5600		-0.0330		+	1.3683		0.8864	
		0.149		0.937			0.056	*	0.340	
BTM	+	0.5520		0.1363		+	0.1985		-0.9693	
		0.004	***	0.349			0.554		0.005	***
QTR4	+	0.0451		0.5650		-	-0.5187		0.2600	
		0.718		0.000	***		0.024	**	0.390	
INTERCEPT	+/-	1.6739		-4.4252		+/-	-0.4147		-3.7868	
		<.0001	***	<.0001	***		0.517		<.0001	***
INDUSTRY FE		YES		YES			YES		YES	
YEAR FE		YES		YES			YES		YES	
R-SQUARED		0.022		0.021			0.014		0.015	
N		16,964		12,716			16,347		12,089	

In the drift period, the net tone of the prepared remarks remains both positive and

statistically significant for both good news firms and for bad news firms, suggesting that net tone

contributes to a delayed price reaction. The coefficient of net tone for bad news firms is larger and highly statistically significant when compared to the coefficient of good news firms. This suggests that there is more post-earnings announcement drift for bad news firms. For bad news firms, the total number of tone words is positively associated with returns in the drift period. This is consistent with investors having a slower price response as the volume of information on a call increases. However, the coefficient on total tone words is negative for bad news firms, suggesting that as the number of total words increases there is a reduction in drift. Size is negatively associated with returns for good news firms. This is consistent with larger firms having a muted reaction because they have more public information. Good news firms with a high demand for information, measured by leverage, have a larger market reaction in the drift period. Bad news growth firms, proxied by the book-to-market ratio, are negatively associated with returns in the drift period, which is the opposite of my anticipated sign. I can interpret the negative sign as accelerated price discovery due to growth opportunities. The fourth quarter call for good news firms is negatively associated with returns. This is consistent with increased investor attention accelerating price response.

I next consider the market reaction to the net tone of the question-and-answer session. I regress cumulative abnormal returns for the event and drift periods on the net tone of the question-and-answer session (Panel B). In the event period, net tone is highly positively associated with cumulative abnormal returns for both good news firms and for bad news firms. The number of total words for bad news firms is negatively associated with event period returns, suggesting that calls with more information may take longer to process. However, the total number of tone words for bad news firms is positively associated with returns. While this is opposite of my anticipated sign, I interpret this coefficient as investors having a larger event period market reaction as bad

news firms disclose more information in their calls. Similar to the prepared remarks, size has a negative association with returns for good news firms and a positive association with returns for bad news firms. Good news firms with high growth opportunities, measured by the book-to-market ratio, are associated with higher event period returns. Calls for a firm's fourth fiscal quarter are associated with higher returns for bad news firms, which I attribute to increased investor attention. In the drift period, the net tone of the question-and-answer session remains positively associated with returns and highly statistically significant for good news firms. This is consistent with net tone contributing to post-earnings announcement drift. However, for bad news firms, net tone is not statistically significant. The total number of tone words is positively associated with drift period returns for bad news firms, suggesting that as the amount of information disclosed in a call increases, investors will be slower to react to that information. However, the total number of words is negatively associated with drift period returns for good news firms. While statistically significant, this coefficient is small in magnitude. Good news firms with a high demand for information, proxied by leverage, experience larger drift period returns. While I anticipate a positive coefficient on book-to-market, the coefficient is negative for bad news firms. I interpret this as growth opportunities accelerating the price response to conference calls. The fourth quarter call for good news firms is negatively associated with returns. This is consistent with increased investor attention accelerating price response.

Overall, these results are consistent with Price, Doran, Peterson, and Bliss (2012), who demonstrate a positive association between net tone and drift period returns for both the prepared remarks and for the question-and-answer session. Bad news firms experience more post-earnings announcement drift than good news firms for the prepared remarks, while good news firms experience more post-earnings announcement drift than bad news firms for the question-and-

answer session. I anticipate that the drift associated with net tone will be negatively associated with net backward-looking tone and positively associated with net forward-looking tone.

5.2   Analysis of the Prepared Remarks

Next, I divide net tone into backward-looking and forward-looking components. I first perform an analysis of the prepared remarks (Table 5). I anticipate both types of tone will be positively associated with event period returns. I hypothesize that backward-looking statements will reduce post-earnings announcement drift. Therefore, I anticipate a negative coefficient in the drift period. Alternatively, I hypothesize that forward-looking statements will be associated with greater uncertainty, contributing to a delayed market reaction. Therefore, I anticipate a positive coefficient in the drift period. To provide evidence of evidence of the market reaction, I regress cumulative abnormal returns for the event and drift periods on net backward-looking tone and net forward-looking tone.

Table 5: Market Reaction to Prepared Remarks

Panel A: Regression Results of CAR on Net Backward-Looking Tone and Net Forward-Looking

Panel A presents the results from OLS regressions where the dependent variable is the cumulative abnormal return. Returns are presented for the event period of -1 to 1 trading days, where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Anticipated signs for coefficients are presented. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

		EVENT PERIOD (Model 2a)			DRIFT PERIOD (Model 2b)	
	+/-	GOOD NEWS	BAD NEWS	+/-	GOOD NEWS	BAD NEWS
PRNETBACK	+	2.7850	2.9713	-	0.8759	1.6707
		<.0001 ***	<.0001 ***		0.013 **	<.0001 ***
PRNETFWD	+	0.9498	0.3360	+	-0.2262	-0.4445
		<.0001 ***	0.223		0.613	0.411
PRTONEW	-	-0.0003	-0.0002	+	0.0048	0.0106
		0.914	0.935		0.292	0.075 *
PRTOTALW	-	-0.0001	-0.0001	+	-0.0001	-0.0003
		0.379	0.185		0.399	0.084 *
SIZE	-	-0.2966	0.1301	-	-0.1630	0.1036
		<.0001 ***	0.002 ***		0.014 **	0.221
LEVERAGE	+	1.1657	0.3242	+	1.5908	1.0206
		0.003 ***	0.434		0.025 **	0.272
BTM	+	0.7312	0.2504	+	0.3162	-0.9366
		0.001 ***	0.086 *		0.355	0.007 ***
QTR4	+	-0.0442	0.5540	-	-0.5808	0.2080
		0.728	0.000 ***		0.012 **	0.499
INTERCEPT	+/-	2.0759	-3.0431	+/-	-0.0946	-3.1457
		<.0001 ***	<.0001 ***		0.888	0.000 ***
INDUSTRY FE		YES	YES		YES	YES
YEAR FE		YES	YES		YES	YES
R-SQUARED		0.031	0.028		0.014	0.016
N		16,940	12,702		16,324	12,077

Table 5 continued

Panel B: Comparison of Coefficients of Net Backward-Looking Tone and Net Forward-Looking Tone

Panel B presents the results of a t-test comparing the specified betas from Panel A. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise.

	EVENT PERIOD		DRIFT PERIOD	
	GOOD NEWS	BAD NEWS	GOOD NEWS	BAD NEWS
PRNETBACK ≠ PRNETFWD	<.0001 ***	<.0001 ***	0.108	0.010 ***

Panel C: Economic Significance of Net Backward-Looking Tone and Net Forward-Looking Tone

Panel C presents calculations for the economic significance of the market reaction to net backward-looking tone and net forward-looking tone. The average market reaction is calculated by multiplying the specified beta from Panel A by the respective mean. Market sensitivity is calculated by multiplying the specified beta from Panel A by the standard deviation of the respective variable. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	AVERAGE MARKET REACTION					
	EVENT PERIOD			DRIFT PERIOD		
	Beta	Mean	Reaction	Beta	Mean	Reaction
GOOD NEWS FIRMS						
PRNETBACK	2.7850	0.3088	0.860 ***	0.8759	0.3088	0.270 **
PRNETFWD	0.9498	0.5166	0.491 ***	-0.2262	0.5166	-0.117
BAD NEWS FIRMS						
PRNETBACK	2.9713	0.1646	0.489 ***	1.6707	0.1646	0.275 ***
PRNETFWD	0.3360	0.4532	0.152	-0.4445	0.4532	-0.201

	MARKET SENSITIVITY					
	EVENT PERIOD			DRIFT PERIOD		
	Beta	Std Dev	Sensitivity	Beta	Std Dev	Sensitivity
GOOD NEWS FIRMS						
PRNETBACK	2.7850	0.3473	0.967 ***	0.8759	0.3473	0.304 **
PRNETFWD	0.9498	0.2596	0.247 ***	-0.2262	0.2596	-0.059
BAD NEWS FIRMS						
PRNETBACK	2.9713	0.3705	1.101 ***	1.6707	0.3705	0.619 ***
PRNETFWD	0.3360	0.2737	0.092	-0.4445	0.2737	-0.122

Table 5 continued

Panel D: Regression Resultsof Cumulative Abnormal Returns on Individual Components of Tone

Panel D presents the results from OLS regressions where the dependent variable is the cumulative abnormal return. Returns are presented for the event period of -1 to 1 trading days, where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Anticipated signs for coefficients are presented. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

		EVENT PERIOD (Model 3a)					DRIFT PERIOD (Model 3b)			
	+/-	GOOD NEWS		BAD NEWS		+/-	GOOD NEWS		BAD NEWS	
PRPOSBACK	+	0.0825		0.1032		-	0.0324		0.0676	
		<.0001	***	<.0001	***		0.007	***	<.0001	**
PRNEGBACK	-	-0.1034		-0.0909		-	-0.0297		-0.0154	
		<.0001	***	<.0001	***		0.080	*	0.381	
PRPOSFWD	+	-0.0002		-0.0076		+	-0.0015		-0.0074	
		0.966		0.142			0.846		0.462	
PRNEGFWD	-	-0.0380		-0.0182		+	0.0120		0.0120	
		0.000	***	0.083	*		0.485		0.549	
PRTOTALW	-	0.0000		-0.0001		+	-0.0001		-0.0003	
		0.495		0.240			0.422		0.124	
SIZE	-	-0.3179		0.1107		-	-0.1720		0.0952	
		<.0001	***	0.009	***		0.010	***	0.262	
LEVERAGE	+	1.1261		0.2784		+	1.5868		0.9050	
		0.004	***	0.505			0.026	**	0.329	
BTM	+	0.7235		0.2405		+	0.2786		-0.9888	
		0.001	***	0.111			0.411		0.005	***
QTR4	+	-0.1072		0.4460		-	-0.6051		0.1466	
		0.400		0.003	***		0.009	***	0.636	
INTERCEPT	+/-	3.4382		-2.3651		+/-	0.0900		-3.0234	
		<.0001	***	<.0001	***		0.886		0.000	***
INDUSTRY FE		YES		YES			YES		YES	
YEAR FE		YES		YES			YES		YES	
R-SQUARED		0.030		0.027			0.014		0.015	
N		16,974		12,730			16,357		12,101	

In the event period, both net backward-looking tone and net forward-looking tone are positively associated with returns for good news firms. However, for bad news firms, only net backward-looking tone is statistically significant. The performance of the remaining control variables is consistent in terms of sign and significance with the baseline event period model (1a). In the drift period, net forward-looking tone is not statistically significant for either good news firms or for bad news firms. This does not support my second hypothesis. For good news firms, forward-looking statements appear to be fully priced in the event period, and do not appear to be related to post-earnings announcement drift. For bad news firms, investors do not appear to price forward-looking statements. Net backward-looking tone has a positive and statistically significant coefficient for good news firms and for bad news firms. This does not support my third hypothesis. However, it is consistent with the alternate view that backward-looking statements are subject to uncertainty. There is strong evidence that tone is managed (Huang et al. 2014; Brown et al. 2018; Huang et al. 2018). Some of this management occurs in backward-looking statements. The coefficient of net backward-looking tone for bad news firms is nearly double the coefficient for good news firms. This suggests that the net backward-looking tone of bad news firms, which can be viewed as firms with more uncertainty, may be associated with larger amounts of drift. The performance of the remaining control variables is consistent in terms of sign and significance with the baseline drift period model (1b). I perform a t-test showing that the coefficients for net backward-looking tone and net forward-looking tone are highly statistically different in the event period for both good news firms and bad news firms (Panel B). The coefficients for net backward-looking tone and net forward-looking tone are only statistically different for bad news firms in the drift period.

I consider the economic magnitude of the market reaction to net backward-looking tone and to net forward-looking tone (Panel C). I multiply the regression coefficients by the respective variable mean to determine the economic magnitude of the average market reaction. For good news firms, the average event period response to net backward-looking tone of the prepared remarks is 0.86 basis points. The average response to net forward-looking tone is 0.49 basis points. For bad news firms, the average event period response to net backward-looking tone is 0.49 basis points. The average market reaction to net forward-looking tone is not statistically significant. I also determine the market sensitivity to changes in net tone by multiplying the regression coefficient by the respective standard deviation. The market is more sensitive to changes in net backward-looking tone than to changes in net forward-looking tone. For good news firms, a one standard deviation increase in net backward-looking tone results in an increased market response of 0.97 basis points, while a one standard deviation increase in net forward-looking tone results in an increased market response of 0.25 basis points. For bad news firms, a one standard deviation increase in net backward-looking tone results in an increased market response of 1.10 basis points. The market reaction to net forward-looking tone is not statistically significant. These results are similar to the results of Bonsall, Bozanic, and Merkley (2013), who examine press releases. They conclude that backward-looking tone dominates forward-looking tone in the event period. Price, Doran, Peterson, and Bliss (2012) argue that the prepared remarks of the conference call approximate the information contained in the press release.

In the drift period, the average market response to net backward-looking tone is 0.27 basis points for good news firms and 0.28 basis points for bad news firms. The market reaction to net forward-looking tone is not statistically significant for either good news firms or for bad news

firms. This suggests the economic magnitude of drift associated with the prepared remarks is similar for both good news firms and for bad news firms.

To provide further insight into the market reaction to backward-looking tone and to forward-looking tone, I regress cumulative abnormal returns on the four individual components of net tone for the prepared remarks by using my third model (Panel D). In the event period, I anticipate a positive market reaction to positive tone and a negative reaction to negative tone. In the drift period, I predict a positive sign on positive forward-looking tone and on negative forward-looking tone, and I predict a negative sign on negative backward-looking tone and on positive backward-looking tone. These anticipated signs are consistent with my second and third hypotheses.

In the event period, positive backward-looking tone, negative backward-looking tone and negative forward-looking tone are statistically significant and have their anticipated signs for both good news firms and for bad news firms. Positive forward-looking tone is not statistically significant for good news firms or for bad news firms. Investors may be cautious of positive forward-looking tone in the prepared remarks, consistent with management's incentives to frame good news as ongoing (Bagnoli and Watts 2007; Bloomfield 2008). These results are consistent with my second model. In the drift period, neither component of forward-looking tone is statistically significant for either good news firms or for bad news firms. This suggests that investors fully price forward-looking tone statements in the event period and that they are not associated with post-earnings announcement drift. However, negative backward-looking tone is significant in the drift period for good news firms. Negative backward-looking tone has a negative sign, suggesting that negative backward-looking tone reduces post-earnings announcement drift. This is consistent with my third hypotheses. Positive backward-looking tone is positively

associated with drift for both good news firms and for bad news firms, which is inconsistent with my third hypothesis. However, backward-looking positive statements may be managed, generating uncertainty that contributes to a delayed market reaction.

Overall, my analysis of the prepared remarks is consistent with my first hypothesis and inconsistent with my second and third hypotheses. The uncertainty associated with forward-looking statements does not appear to contribute to a delayed market reaction. Alternatively, backward-looking tone statements appear to be associated with a delayed market reaction. Investors appear slow to react to backward-looking news, consistent with Bernard and Thomas's (1990) suggestion that investors are slow to reach a consensus on how current performance maps into future performance. Investors also have a larger price response to backward-looking tone than to forward-looking tone. While I present evidence that investors appear to respond to net backward-looking tone and to net forward-looking tone differently, I cannot conclude that the uncertainty of forward-looking statements contributes to a delay in pricing. This suggests that the inherent uncertainty protected by the PSLRA does not negatively impact market efficiency.

5.3   Analysis of the Question-and-Answer Session

Next, I consider the market reaction to the question-and-answer session. Similar to the prepared remarks, I anticipate that the event period responses to both net backward-looking tone and to net forward-looking tone will be positive. My third hypothesis predicts that backward-looking statements will reduce information uncertainty, contributing to a reduction in post-earnings announcement drift. Therefore, I anticipate a negative coefficient in the drift period. Alternatively, my second hypothesis predicts that forward-looking statements will be associated with greater uncertainty, contributing to a delayed market reaction. Therefore, I anticipate a positive coefficient in the drift period. To provide evidence of the market reaction, I first regress

cumulative abnormal returns on net backward-looking tone and on net forward-looking tone using my second model (Table 6).

Table 6: Market Reaction to Question-and-Answer Session

Panel A: Regression Results of Cumulative Abnormal Returns on Net Backward-Looking Tone and Net Forward-Looking Tone

Panel A presents the results from OLS regressions where the dependent variable is the cumulative abnormal return. Returns are presented for the event period of -1 to 1 trading days, where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Anticipated signs for coefficients are presented. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	+/-	EVENT PERIOD (Model 2a)				DRIFT PERIOD (Model 2b)			
		GOOD NEWS		BAD NEWS		GOOD NEWS		BAD NEWS	
QANETBACK	+	1.0937		1.5149		0.7679		0.7196	
		<.0001	***	<.0001	***	0.004	***	0.029	**
QANETFWD	+	2.0787		2.0152		-0.0952		-0.4129	
		<.0001	***	<.0001	***	0.829		0.443	
QATONEW	-	-0.0002		0.0049		0.0091		0.0173	
		0.967		0.250		0.137		0.026	**
QATOTALW	-	-0.0001		-0.0001		-0.0003		-0.0002	
		0.134		0.107		0.023	**	0.304	
SIZE	-	-0.2200		0.1864		-0.0926		0.0903	
		<.0001	***	<.0001	***	0.195		0.326	
LEVERAGE	+	0.5781		0.0442		1.4627		0.7037	
		0.145		0.916		0.042	**	0.453	
BTM	+	0.5817		0.1512		0.1676		-0.9593	
		0.003	***	0.301		0.621		0.006	***
QTR4	+	0.0467		0.5831		-0.5081		0.2655	
		0.710		<.0001	***	0.028	**	0.382	
INTERCEPT	+/-	1.9520		-4.1127		-0.0701		-3.3425	
		<.0001	***	<.0001	***	0.914		<.0001	***
INDUSTRY FE		YES		YES		YES		YES	
YEAR FE		YES		YES		YES		YES	
R-SQUARED		0.022		0.024		0.014		0.015	
N		16,745		12,525		16,139		11,909	

Table 6 continued

Panel B: Comparison of Coefficients of Net Backward-Looking Tone and Net Forward-Looking Tone

Panel B presents the results of a t-test comparing the specified betas from Panel A. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise.

| | EVENT PERIOD | | DRIFT PERIOD | |
	GOOD NEWS	BAD NEWS	GOOD NEWS	BAD NEWS
QANETBACK ≠ QANETFWD	0.001 ***	0.165	0.139	0.118

Panel C: Economic Significance of Net Backward-Looking Tone and Net Forward-Looking Tone

Panel C presents calculations for the economic significance of the market reaction to net backward-looking tone and net forward-looking tone. The average market reaction is calculated by multiplying the specified beta from Panel A by the respective mean. Market sensitivity is calculated by multiplying the specified beta from Panel A by the standard deviation of the respective variable. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

AVERAGE MARKET REACTION

| | EVENT PERIOD | | | DRIFT PERIOD | | |
	Beta	Mean	Reaction	Beta	Mean	Reaction
GOOD NEWS FIRMS						
QANETBACK	1.0937	0.2299	0.251 ***	0.7679	0.2299	0.177 ***
QANETFWD	2.0787	0.4582	0.952 ***	-0.0952	0.4582	-0.044
BAD NEWS FIRMS						
QANETBACK	1.5149	0.1525	0.231 ***	0.7196	0.1525	0.110 ***
QANETFWD	2.0152	0.4177	0.842 ***	-0.4129	0.4177	-0.172

MARKET SENSITIVITY

| | EVENT PERIOD | | | DRIFT PERIOD | | |
	Beta	Std Dev	Sensitivity	Beta	Std Dev	Sensitivity
GOOD NEWS FIRMS						
QANETBACK	1.0937	0.4382	0.479 ***	0.7679	0.4382	0.336 ***
QANETFWD	2.0787	0.2597	0.540 ***	-0.0952	0.2597	-0.025
BAD NEWS FIRMS						
QANETBACK	1.5149	0.4561	0.691 ***	0.7196	0.4561	0.328 ***
QANETFWD	2.0152	0.2758	0.556 ***	-0.4129	0.2758	-0.114

Table 6 continued

Panel D: Regression Resultsof Cumulative Abnormal Returns on Individual Components of Tone

Panel D presents the results from OLS regressions where the dependent variable is the cumulative abnormal return. Returns are presented for the event period of -1 to 1 trading days, where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Anticipated signs for coefficients are presented. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | | EVENT PERIOD (Model 3a) | | | | | DRIFT PERIOD (Model 3b) | | | |
	+/-	GOOD NEWS		BAD NEWS		+/-	GOOD NEWS		BAD NEWS	
QAPOSBACK	+	0.0631		0.1075		-	0.0216		0.0950	
		<.0001	***	<.0001	***		0.288		0.001	***
QANEGBACK	-	-0.1627		-0.1672		-	-0.0385		-0.0416	
		<.0001	***	<.0001	***		0.185		0.236	
QAPOSFWD	+	0.0218		0.0242		+	0.0112		0.0037	
		<.0001	***	<.0001	***		0.177		0.749	
QANEGFWD	-	-0.0448		-0.0315		+	0.0175		0.0300	
		<.0001	***	0.005	***		0.290		0.140	
QATOTALW	-	-0.0001		-0.0001		+	-0.0003		-0.0002	
		0.455		0.220			0.015	**	0.320	
SIZE	-	-0.2296		0.1740		-	-0.0917		0.0837	
		<.0001	***	0.000	***		0.197		0.363	
LEVERAGE	+	0.6760		0.0222		+	1.3515		0.9146	
		0.084	*	0.958			0.059	*	0.325	
BTM	+	0.5515		0.1259		+	0.1808		-0.9539	
		0.004	***	0.381			0.591		0.006	***
QTR4	+	0.0365		0.5701		-	-0.5149		0.2393	
		0.770		0.000	***		0.025	**	0.429	
INTERCEPT	+/-	3.1292		-3.0182		+/-	0.0413		-3.5248	
		<.0001	***	<.0001	***		0.946		<.0001	***
INDUSTRY FE		YES		YES			YES		YES	
YEAR FE		YES		YES			YES		YES	
R-SQUARED		0.025		0.023			0.014		0.015	
N		16,974		12,730			16,357		12,101	

In the event period, both net backward-looking tone and net forward-looking tone are positively associated with returns for both good news firms and for bad news firms. This is consistent with investors responding positively to good news and negatively to bad news. These results are consistent with my first hypothesis. Remaining controls perform consistently with the baseline model (1a). Firm size is negatively associated with returns for good news firms and is positively associated with returns for bad news firms. Good news firms with more growth opportunities, proxied by the book-to-market ratio, experience larger event period returns. Calls for the fourth fiscal quarter for bad news firms have larger market reaction, which I attribute to increased investor attention.

In the drift period, I anticipate a negative coefficient on net backward-looking tone. The results do not support my hypothesis. Both good news firms and bad news firms have a positive and statistically significant coefficient for net backward-looking tone. One possible explanation is that backward-looking tone is subject to uncertainty from tone management. I anticipate a negative coefficient for net forward-looking tone in the drift period. Net forward-looking tone is not statistically significant in the drift period for either good news firms or for bad news firms. This suggests that investors fully price net forward-looking tone in the event period. Remaining controls perform similarly to the baseline drift period model (1b). I present t-tests to show that the coefficients for net backward-looking tone and for net forward-looking tone are statistically different (Panel B). In the drift period, net backward-looking tone and net forward-looking tone are not statistically different for either good news firms or for bad news firms.

To interpret the economic magnitude of the difference between net forward-looking tone and net backward-looking tone, I first present the average market response. I calculate the average market response as the mean of net backward-looking tone or net forward-looking tone multiplied

by the corresponding coefficient. The average market response to net backward-looking tone is 0.25 basis points for good news firms. The average market response to net forward-looking tone is 0.95 basis points for good news firms. For bad news firms, the average market response to net backward-looking tone is 0.23 basis points. The average market response of net forward-looking tone is 0.84 basis points for bad news firms. This pattern is qualitatively different from the prepared remarks. While investors have a stronger event period average price reaction to backward-looking tone in the prepared remarks, they have a stronger event period average price reaction to forward-looking tone in the question-and-answer session. This pattern holds for both good news firms and for bad news firms. In the drift period, net forward-looking tone is not statistically significant for either good news firms or for bad news firms. For good news firms, net backward-looking tone has an average market response of 0.17 basis points. For bad news firms, net backward-looking tone has an average market response of 0.11 basis points.

Next, I consider the four individual components of net tone during question-and-answer session. In the event period, all four components of tone are highly statistically significant and have the anticipated sign, positive for positive tone and negative for negative tone (Panel D). This holds for both good news firms and for bad news firms. Control variables perform consistently with the baseline model (1a).

In the drift period, I anticipate that the elements of backward-looking tone will be negatively associated with post-earnings announcement drift, while the elements of forward-looking tone will be positively associated with post-earnings announcement drift. For good news firms, none of the individual elements of net tone is statistically significant. For bad news firms, positive net backward-looking tone is positively associated with returns. This does not support my third

hypothesis. However, an alternative explanation is that investors may be slow to process backward-looking positive statements because they are subject to tone management.

5.4   Analysis of the Entire Conference Call Data

In the prior analysis, I presented the prepared remarks and the question-and-answer session as distinct. However, investors receive both sets of information almost simultaneously. Thus, I now include both sets of information within the same regression model (Table 7). Alternatively, Price, Doran, Peterson, and Bliss (2012) argue that the question-and-answer session is the only new information contained in a call. They view the net tone of the prepared remarks as a proxy for the information contained in the press release.

Table 7: Market Reaction to Total Call Information

Table 7 presents the results from OLS regressions where the dependent variable is the cumulative abnormal return. Returns are presented for the event period of -1 to 1 trading days, where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Anticipated signs for coefficients are presented. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

		EVENT PERIOD			DRIFT PERIOD	
	+/-	GOOD NEWS	BAD NEWS	+/-	GOOD NEWS	BAD NEWS
PRNETBACK	+	2.5081	2.5959	-	0.7301	1.6130
		<.0001 ***	<.0001 ***		0.039 **	0.000 ***
PRNETFWD	+	0.5142	(0.3508)	+	(0.2785)	(0.3533)
		0.039 **	0.220		0.548	0.530
QANETBACK	+	0.7339	1.1580	-	0.6982	0.5103
		<.0001 ***	<.0001 ***		0.009 ***	0.127
QANETFWD	+	1.2752	1.4247	+	(0.2186)	(0.7793)
		<.0001 ***	<.0001 ***		0.634	0.167
PRTONEW	-	(0.0028)	(0.0039)	-	0.0023	0.0061
		0.288	0.226		0.638	0.336
PRTOTALW	-	(0.0000)	(0.0000)	-	(0.0000)	(0.0002)
		0.997	0.726		0.810	0.225
QATONEW	-	0.0018	0.0074	-	0.0081	0.0157
		0.634	0.102		0.214	0.056 *
QATOTALW	-	(0.0001)	(0.0002)	-	(0.0003)	(0.0001)
		0.058 *	0.041 **		0.044 **	0.389
SIZE	-	(0.2434)	0.1534	-	(0.1121)	0.0463
		<.0001 ***	0.001 ***		0.129	0.621
LEVERAGE	+	1.1678	0.4416	+	1.6131	0.9596
		0.004 ***	0.288		0.025 **	0.306
BTM	+	0.7447	0.3007	+	0.2357	(0.8862)
		0.001 ***	0.041 **		0.495	0.013 **
QTR4	+	(0.0108)	0.5758	+	(0.5416)	0.2524
		0.933	0.000 ***		0.021 **	0.414
INTERCEPT	+/-	1.5847	(3.5133)	+/-	(0.0233)	(2.7341)
		<.0001 ***	<.0001 ***		0.973	0.002 ***
INDUSTRY FE		YES	YES		YES	YES
YEAR FE		YES	YES		YES	YES
R-SQUARED		0.037	0.037		0.015	0.016
N		16,711	12,498		16,106	11,886

Including the tone of both the prepared remarks and the question-and-answer session in the same regression does not appear to qualitatively change my main results. In the event period, the net backward-looking tone of the prepared remarks, the net forward-looking tone of the prepared remarks, the net backward-looking tone of the question-and-answer session, and the net forward-

looking tone of the question-and-answer session are all positively associated with returns for good news firms. For bad news firms, the net forward-looking tone of the prepared remarks is not significant, but the remaining three categories of net tone are. In the drift period, the net forward-looking tone of the prepared remarks is not statistically significant for good news firms or for bad news firms, suggesting that investors may not find it informative. Similarly, the net forward-looking tone of the question-and-answer session is not statistically significant for either good news firms or for bad news firms. Consistent with my prior analyses, net forward-looking tone does not appear to contribute to post-earnings announcement drift. Investors appear to fully price the net forward-looking tone in the event period. For both good news firms and for bad news firms, the net backward-looking tone of the prepared remarks is positively associated with post-earnings announcement drift. The net backward-looking tone of the question-and-answer session is positively associated with post-earnings announcement drift only for good news firms, which is also consistent with the results from my main analyses. The inherent uncertainty associated with forward-looking statements does not appear to contribute to a delayed price reaction. However, the net forward-looking tone of the prepared remarks is not statistically significant in the event period or in the drift period for bad news firms, suggesting that investors may not perceive it as informative.

The purpose of this paper is to determine if the inherent uncertainty of forward-looking statements is associated with a delay in pricing, contributing to post-earnings announcement drift. Overall, my results support my first hypothesis but do not support my second and third hypotheses. I do not find evidence supporting a delay in pricing forward-looking statements. However, I do document systematic differences in the market reaction to net forward-looking tone and to net backward-looking tone in the event and drift periods.

My results have implications for regulators and managers. The PSLRA protects managers from litigation surrounding the uncertainty of forward-looking statements so long as these statements are accompanied by a meaningful cautionary statement. However, uncertainty may lead to a delayed price reaction (Zhang 2006). My results suggest that the inherent uncertainty of forward-looking statements does not contribute to a delayed price reaction. However, my results suggest that investors have a larger market reaction to backward-looking statements in the prepared remarks and a larger market reaction to forward-looking statements in the question-and-answer session. This suggests that managers should focus their prepared remarks on the prior performance of the firm and focus their remarks during the question-and-answer session on future performance.

CHAPTER 6.   ADDITIONAL ANALYSES

6.1   High Earnings Quality Firms versus Low Earnings Quality Firms

The impact of tone statements may also vary based on earnings quality. Firms with low earnings quality may have a higher demand for supplementary information, which may increase the ability of backward-looking statements and forward-looking statements to resolve uncertainty. However, managers may pursue tone management and earnings management as complementary strategies (Brown et al. 2018; Huang et al. 2018; Huang et al. 2014). The combination of tone management and earnings management in low earnings quality firms may amplify the uncertainty associated with both backward-looking statements and forward-looking statements, contributing to post-earnings announcement drift.

I divide my sample into high earnings quality firms and low earnings quality firms (Table 8). Firms that nearly meet or beat earnings thresholds can be viewed as firms with low earnings quality, as they are more likely to have managed earnings (Dechow et al. 2010). Low earnings quality firms are defined as firms with an absolute value of earnings surprise less than 0.02 or an absolute value of net income less than $2 million.

Table 8: High Earnings Quality Firms versus Low Earnings Quality Firms

Panel A: Subsample Descriptive Statistics and Test of Differences in Means

Panel A presents the mean value for conference call characteristics for both the prepared remarks and the question-and-answer session, as well as the difference between those two values. Low Earnings Quality firms are firms with an absolute value of earnings surprise less than 0.02 or an absolute value of net income less than $2 million. High Earnings Quality firms are all other firms. The p-value for a two-tailed t-test with pooled variance is presented. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Variable	Low EQ	High EQ	Difference	p-value	
PRNETTONE	0.4122	0.4236	0.0114	0.021	**
PRNETBACK	0.2070	0.2526	0.0456	<.0001	***
PRNETFWD	0.4942	0.4892	-0.0050	0.301	
PRPOSBACK	15.0	18.3	3.3	<.0001	***
PRPOSFWD	33.9	36.4	2.6	<.0001	***
PRNEGBACK	10.0	11.2	1.2	<.0001	***
PRNEGFWD	11.0	12.1	1.2	<.0001	***
PRTONEW	69.8	78.0	8.2	<.0001	***
PRTOTALW	3,185	3,386	201	<.0001	***
QANETTONE	0.4149	0.4093	-0.0056	0.286	
QANETBACK	0.1947	0.1974	0.0027	0.753	
QANETFWD	0.4530	0.4396	-0.0134	0.010	***
QAPOSBACK	6.8	8.7	1.9	<.0001	***
QAPOSFWD	28.3	34.9	6.6	<.0001	***
QANEGBACK	4.6	5.6	1.1	<.0001	***
QANEGFWD	10.4	13.2	2.9	<.0001	***
QATONEW	50.0	62.5	12.5	<.0001	***
QATOTALW	2,937	3,590	654	<.0001	***

Table 8 continued
Panel B: Regression Results of Cumulative Abnormal Returns on Net Backward-Looking Tone and Net Forward-Looking Tone of the Prepared Remarks

Panel B presents the results from OLS regressions where the dependent variable is the cumulative abnormal return. Returns are presented for the event period of -1 to 1 trading days where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Low Earnings Quality firms are firms with an absolute value of earnings surprise less than 0.02 or an absolute value of net income less than $2 million. High Earnings Quality firms are all other firms. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

		EVENT PERIOD				DRIFT PERIOD			
	+/-	High EQ		Low EQ		+/-	High EQ		Low EQ	
PRNETBACK	+	3.3523		3.1887		-	1.4462		1.6255	
		<.0001	***	<.0001	***		<.0001	***	0.055	*
PRNETFWD	+	0.7457		1.0255		+	-0.2686		-0.2773	
		0.000	***	0.085	*		0.462		0.813	
PRTONEW	-	-0.0001		-0.0076		+	0.0052		0.0184	
		0.954		0.295			0.179		0.141	
PRTOTALW	-	-0.0001		0.0002		+	-0.0002		-0.0005	
		0.027	**	0.418			0.164		0.179	
SIZE	-	-0.1035		-0.1899		-	0.0145		-0.5356	
		0.001	***	0.039	**		0.802		0.003	***
LEVERAGE	+	0.6090		1.2220		+	1.1003		3.7166	
		0.036	**	0.230			0.064	*	0.056	*
BTM	+	0.3619		0.5327		+	-0.4829		-0.0869	
		0.002	***	0.136			0.078	*	0.914	
QTR4	+	0.2809		-0.2184		-	-0.1399		-0.9762	
		0.005	***	0.532			0.471		0.161	
INTERCEPT	+/-	-0.1068		-0.3732		+/-	-1.7545		0.3429	
		0.731		0.688			0.002	***	0.848	
INDUSTRY FE		YES		YES			YES		YES	
YEAR FE		YES		YES			YES		YES	
R-SQUARED		0.034		0.032			0.014		0.020	
N		26,474		3,168			25,363		3,038	

Table 8 continued

Panel C: Regression Results of Cumulative Abnormal Returns on Net Backward-Looking Tone and Net Forward-Looking Tone of the Question-and-Answer Session

Panel C presents the results from OLS regressions where the dependent variable is the cumulative abnormal return. Returns are presented for the event period of -1 to 1 trading days where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Low Earnings Quality firms are firms with an absolute value of earnings surprise less than 0.02 or an absolute value of net income less than \$2 million. High Earnings Quality firms are all other firms. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | | EVENT PERIOD | | | DRIFT PERIOD | |
	+/-	High EQ	Low EQ	+/-	High EQ	Low EQ
QANETBACK	+	1.4714	1.1886	-	0.7633	1.3213
		<.0001 ***	0.000 ***		0.001 ***	0.033 **
QANETFWD	+	2.1860	2.8763	+	-0.1342	-0.1782
		<.0001 ***	<.0001 ***		0.709	0.878
QATONEW	-	0.0007	0.0059	+	0.0134	-0.0014
		0.792	0.579		0.008 ***	0.942
QATOTALW	-	-0.0001	-0.0001	+	-0.0003	0.0001
		0.049 **	0.479		0.010 ***	0.819
SIZE	-	-0.0231	-0.1680	-	0.0456	-0.4588
		0.484	0.094 *		0.456	0.025 **
LEVERAGE	+	0.0280	1.0370	+	0.8570	3.1798
		0.923	0.322		0.155	0.110
BTM	+	0.1793	0.4473	+	-0.5845	-0.1001
		0.113	0.205		0.034 **	0.904
QTR4	+	0.3396	-0.1154	-	-0.0806	-0.9195
		0.001 ***	0.744		0.675	0.190
INTERCEPT	+/-	-0.7368	-0.7513	+/-	-1.7157	-0.4005
		0.017 **	0.391		0.002 ***	0.814
INDUSTRY FE		YES	YES		YES	YES
YEAR FE		YES	YES		YES	YES
R-SQUARED		0.021	0.026		0.013	0.020
N		26,176	3,094		25,082	2,966

I present descriptive statistics for the low earnings quality and high earnings quality subsamples in Panel A. I also present t-tests for the differences in means between the two subsamples. For the prepared remarks, low earnings quality firms have a lower net tone and a lower net forward-looking tone. There is no statistical difference in net forward-looking tone between low earnings quality firms and high earnings quality firms. For the question-and-answer session, there is no statistical difference in net tone and net backward-looking tone between high earnings quality firms and low earnings quality firms. Additionally, firms with low earnings quality have a more positive net forward-looking tone.

I regress cumulative abnormal returns on net backward-looking tone and net forward-looking tone for high earnings quality firms and for low earnings quality firms (Panel B). For the prepared remarks, both high earnings quality firms and low earnings quality firms have a positive event period market reaction to net backward-looking tone. However, only high earnings quality firms have a statistically significant market reaction to net forward-looking tone. Further, neither high earnings quality firms nor low earnings quality firms have a significant reaction to net forward-looking tone in the drift period. This suggests that investors do not price net forward-looking tone for low earnings quality firms. Both high earnings quality firms and low earnings quality firms have a positive coefficient for net backward-looking tone during the drift period. This is consistent with post-earnings announcement drift due to the uncertainty of backward-looking tone statements.

For the question-and-answer session, net backward-looking tone is positively associated with event period returns for both high earnings quality firms and for low earnings quality firms. Unlike the market reaction to the prepared remarks, investors have a positive event period market reaction to net forward-looking tone for both high earnings quality firms and for low earnings

quality firms. This suggests that investors find forward-looking statements in the question-and-answer session informative while forward-looking statements in the prepared remarks are not. I attribute this to the interactive nature of the question-and-answer session. In the drift period, net forward-looking tone is not statistically significant for either high earnings quality firms or for low earnings quality firms. Net backward-looking tone is positive and statistically significant for both low earnings quality firms and for high earnings quality firms. However, the coefficient for low earnings quality firms is nearly double the coefficient for high earnings quality firms. This is consistent with the uncertainty of low earnings quality contributing to a delayed price reaction. These results partially support the idea that the low earnings quality will contribute to a delayed price reaction.

6.2   Alternative Specification of Abnormal Returns

I regress buy-and-hold abnormal returns on net backward-looking tone and net forward-looking tone to provide evidence that my results are robust for an alternative specification of returns (Table 9). For both the prepared remarks and the question-and-answer session, the sign and statistical significance of net backward-looking tone and net forward-looking tone does not qualitatively differ from regressions using cumulative abnormal returns for either the event period or for the drift period. This holds for both good news firms and for bad news firms. My analysis appears robust to an alternative specification of returns.

Table 9: Alternative Measure of Returns

Panel A: Regression Results of Buy-and-Hold Abnormal Returns on Net Forward-Looking Tone and Net Backward-Looking Tone of the Prepared Remarks

Panel A presents the results from OLS regressions where the dependent variable is the buy-and-hold abnormal return. Returns are presented for the event period of -1 to 1 trading days, where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

		EVENT PERIOD				DRIFT PERIOD		
	+/-	GOOD NEWS		BAD NEWS		+/-	GOOD NEWS		BAD NEWS	
PRNETBACK	+	2.8445		3.1628		-	0.9902		1.5169	
		<.0001	***	<.0001	***		0.009	***	0.001	***
PRNETFWD	+	1.0157		0.3981		+	-0.3463		-0.4121	
		0.000	***	0.185			0.465		0.488	
PRTONEW	-	0.0047		-0.0012		+	0.0074		0.0131	
		0.331		0.706			0.128		0.047	**
PRTOTALW	-	-0.0002		-0.0001		+	-0.0002		-0.0004	
		0.123		0.180			0.227		0.047	**
SIZE	-	-0.3745		0.1556		-	-0.1057		0.1530	
		<.0001	***	0.001	***		0.138		0.105	
LEVERAGE	+	1.6122		0.3791		+	1.6293		2.0156	
		0.008	***	0.420			0.067	*	0.089	*
BTM	+	0.5302		0.3822		+	0.0061		-1.5821	
		0.206		0.045	**		0.992		0.002	***
QTR4	+	-0.0893		0.5977		-	-0.5575		0.3589	
		0.545		0.000	***		0.025	**	0.285	
INTERCEPT	+/-	2.7037		-3.3914		+/-	-0.5430		-3.5909	
		<.0001	***	<.0001	***		0.464		0.000	***
INDUSTRY FE		YES		YES			YES		YES	
YEAR FE		YES		YES			YES		YES	
R-SQUARED		0.025		0.028			0.015		0.017	
N		16,940		12,702			16,324		12,077	

Table 9 continued
Panel B: Regression Results of Buy-and-Hold Abnormal Returns on Net Forward-Looking Tone and Net Backward-Looking Tone of the Question-and-Answer Session

Panel B presents the results from OLS regressions where the dependent variable is the buy-and-hold abnormal return. Returns are presented for the event period of -1 to 1 trading days, where 0 is the date of the call, and for the drift period of 2 to 60 trading days after the date of the call. Returns are multiplied by 100 for readability. Good News Firms are firms with a value of zero or greater for earnings surprise. Bad News Firms are firms with a negative value of earnings surprise. Variables are defined in Appendix A. Robust standard errors are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

		EVENT PERIOD				DRIFT PERIOD			
	+/-	GOOD NEWS		BAD NEWS		+/-	GOOD NEWS		BAD NEWS	
QANETBACK	+	1.2999		1.5664		-	0.8396		0.6433	
		<.0001	***	<.0001	***		0.003	***	0.078	*
QANETFWD	+	2.1558		2.1929		+	-0.1066		-0.1092	
		<.0001	***	<.0001	***		0.825		0.857	
QATONEW	-	0.0016		0.0034		+	0.0100		0.0155	
		0.699		0.461			0.119		0.075	*
QATOTALW	-	-0.0002		-0.0001		+	-0.0003		-0.0002	
		0.044	**	0.168			0.021	**	0.392	
SIZE	-	-0.2720		0.2153		-	-0.0314		0.1421	
		<.0001	***	<.0001	***		0.679		0.167	
LEVERAGE	+	1.0211		0.0736		+	1.5008		1.7534	
		0.099	*	0.878			0.094	*	0.144	
BTM	+	0.3761		0.2713		+	-0.1559		-1.5898	
		0.365		0.178			0.809		0.002	***
QTR4	+	0.0217		0.6155		-	-0.4936		0.3971	
		0.877		0.000	***		0.046	**	0.232	
INTERCEPT	+/-	2.5102		-4.5631		+/-	-0.5155		-3.9268	
		<.0001	***	<.0001	***		0.473		<.0001	***
INDUSTRY FE		YES		YES			YES		YES	
YEAR FE		YES		YES			YES		YES	
R-SQUARED		0.019		0.023			0.016		0.016	
N		16,745		12,525			16,139		11,909	

CHAPTER 7.   CONCLUSION

Price, Doran, Peterson, and Bliss (2012) document a positive association between the net tone of conference calls and post-earnings announcement drift. This paper studies whether the inherent uncertainty of forward-looking statements contributes to this delayed price response. Overall, my results do not support the conclusion that the inherent uncertainty surrounding forward-looking statements contributes to a delayed price response. However, I do document a delayed price response associated with backward-looking tone. This is consistent with Bernard and Thomas's (1990) argument that post-earnings announcement drift is primarily the result of investors not fully understanding how current earnings will correlate to future earnings. I also provide evidence that the event period market reaction to net backward-looking tone in the prepared remarks is larger than the event period market reaction to net forward-looking tone in the prepared remarks. For the question-and-answer session, the opposite is true. The event period market reaction to forward-looking tone is larger than the market reaction to backward-looking tone.

My results have implications for both managers and regulators. Managers should focus their prepared remarks on the prior performance of the firm and focus their responses in the question-and-answer session on future performance. The PSLRA provides protection to companies and managers that make forward-looking statements with the belief that these statements will improve market efficiency. The opposing view is that the PSLRA may harm market efficiency because it creates a mechanism for managers to make questionable statements with diminished potential for securities litigation. My results suggest that the inherent uncertainty of forward-looking statements does not contribute to a delayed price reaction.

My results are subject to several limitations. First, I cannot rule out that the results are driven by a correlated omitted variable. Language is inherently complex, with many dimensions. It is

likely that dimensions other than positive/negative tone and backward-looking/forward-looking are important to investors. I have not controlled for these other dimensions. Second, although the market effects of net backward-looking tone and net forward-looking tone are statistically significant, their economic significance, measured in basis points, is small.

APPENDIX A. VARIABLE DEFINITIONS

PRNETTONE	Positive tone words minus negative tone words scaled by total tone words. Only tone words spoken by management during the prepared remarks are included.
PRNETBACK	Positive backward-looking tone words minus negative backward-looking tone words scaled by total backward-looking tone words. Only tone words spoken by management during the prepared remarks are included.
PRNETFWD	Positive forward-looking tone words minus negative forward-looking tone words scaled by total forward-looking tone words. Only tone words spoken by management during the prepared remarks are included.
PRPOSBACK	A count of positive backward-looking tone words spoken by management during the prepared remarks.
PRPOSFWD	A count of positive forward-looking tone words spoken by management during the prepared remarks.
PRNEGBACK	A count of negative backward-looking tone words spoken by management during the prepared remarks.
PRNEGFWD	A count of negative forward-looking tone words spoken by management during the prepared remarks.
PRTONEW	A count of tone words spoken by management during the prepared remarks.
PRTOTALW	A count of total words spoken by management during the prepared remarks.
QANETTONE	Positive tone words minus negative tone words scaled by total tone words. Only tone words spoken by management during the question-and-answer session are included.
QANETBACK	Positive backward-looking tone words minus negative backward-looking tone words scaled by total backward-looking tone words. Only tone words spoken by management during the question-and-answer session are included.
QANETFWD	Positive forward-looking tone words minus negative forward-looking tone words scaled by total forward-looking tone words. Only tone words spoken by management during the question-and-answer session are included.
QAPOSBACK	A count of positive backward-looking tone words spoken by management during the question-and-answer session.
QAPOSFWD	A count of positive forward-looking tone words spoken by management during the question-and-answer session.
QANEGBACK	A count of negative backward-looking tone words spoken by management during the question-and-answer session.
QANEGFWD	A count of negative forward-looking tone words spoken by management during the question-and-answer session.
QATONEW	A count of tone words spoken by management during the question-and-answer session.

QATOTALW	A count of total words spoken by management during the question-and-answer session.
CAR	Three-day cumulative abnormal returns centered on the date of the conference call. Returns are calculated by WRDS Event Study using a market-adjusted model. Returns have been Winsorized at 1% and 99%. To enhance readability, returns were multiplied by 100.
DRIFTCAR	Cumulative abnormal return for 2 to 60 trading days after the call date. Returns are calculated by WRDS Event Study using a market-adjusted model. Returns have been Winsorized at 1% and 99%. To enhance readability, returns were multiplied by 100.
BHAR	Three-day buy-and-hold abnormal returns centered on the date of the conference call. Returns are calculated by WRDS Event Study using a market-adjusted model. Returns have been Winsorized at 1% and 99%. To enhance readability, returns were multiplied by 100.
DRIFTBHAR	Buy-and-hold abnormal return for 2 to 60 trading days after the call date. Returns are calculated by WRDS Event Study using a market-adjusted model. Returns have been Winsorized at 1% and 99%. To enhance readability, returns were multiplied by 100.
SURP	Earnings per share for the current quarter minus the earnings per share in the same quarter of the prior year, divided by the share price from the prior year scaled by 100.
SIZE	Log of total assets, calculated as log(atq) from Compustat
LEVERAGE	Total debt divided by total debt plus total equity, calculated as follows using data from Compustat: (dlcq+dlttq)/(dlcq+dlttq+prccq*cshoq)
BTM	Total net assets divided by total market value of equity, calculated as follows using data from Compustat: teqq/(prccq*cshoq)
QTR4	A dummy variable indicating if the call is for the firm's fourth fiscal quarter. 1 if the call is for the fourth quarter, 0 otherwise.

APPENDIX B. SELECTED TEXT FROM THE PSLRA

Definition of "Forward-looking Statement"

The term 'forward-looking statement' means –
- (A) A statement containing a projection of revenues, income (including income loss), earnings (including earnings loss) per share, capital expenditures, dividends, capital structure, or other financial items;
- (B) A statement of the plans and objectives of management for future operations, including plans or objectives relating to the products or services of the issuer;
- (C) A statement of future economic performance, including any such statement contained in a discussion and analysis of financial condition by the management or in the results of operations included pursuant to the rules and regulations of the Commission;
- (D) Any statement of the assumptions underlying or relating to any statement described in subparagraph (A), (B), or (C);
- (E) Any report issued by an outside reviewer retained by an issuer, to the extent that the report assesses a forward-looking statement made by the issuer; or
- (F) A statement containing a projection or estimate of such other items as may be specified by rule or regulation of the Commission.

Safe Harbor Provision

Except as provided in subsection (b), in any private action arising under this title that is based on an untrue statement of a material fact or omission of a material fact necessary to make the statement not misleading, a person referred to in subsection (a) shall not be liable with respect to any forward-looking statement, whether written or oral, if and to the extent that
- (A) the forward looking statement is
  - (i) identified as a forward-looking statement, and is accompanied by meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those in the forward-looking statement; or
  - (ii) immaterial; or
- (B) the plaintiff fails to prove that the forward-looking statement
  - (i) if made by a natural person, was made with actual knowledge by that person that the statement was false or misleading; or
  - (ii) if made by a business entity; was
    - (I) made by or with the approval of an executive officer of that entity, and
    - (II) made or approved by such an officer with actual knowledge by that officer that the statement was false or misleading

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