The Effects of Conference Call Content on Market Perceptions of Value Uncertainty and Firm Risk

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Abstract

Quarterly earnings conference calls convey fundamental information as well as manager and analyst opinion about the firm. This study examines how the market's uncertainty regarding firm valuation is affected by the discretionary, non-fundamental, portion of earnings conference calls. Using textual analysis, we find that positive conference call linguistic tones in excess of what is justified by firm fundamentals are negatively related to measures of risk from the equity options market. The market trusts analysts' linguistic tone more so than management's, consistent with active shareholder monitoring. Overly optimistic managerial tone increases market uncertainty under certain circumstances, particularly during the financial crisis.

JEL classification: D80; D82; D83; G10; G12; G14; G30

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I. Introduction

Quarterly earnings conference calls have been established as an informative disclosure medium which provides incremental value-relevant information reflected in stock prices and trading volume (Frankel, Johnson, and Skinner 1999; Bushee, Matsumoto, and Miller 2003, 2004; Brown, Hillegeist, and Lo 2004). While the vast majority of studies investigating the impact of earnings conference calls focus exclusively on the equities market, there are no studies examining their influence in the options market, whose participants tend to be relatively more informed and sophisticated than the typical stock investor (Black 1975; Barber and Odean 2001). Unlike a stock price which reflects the current average value of the firm, the implied volatilities from options reflect investors' *uncertainty* about the firm's future value. This value uncertainty, or price risk, is distinct from a stock's price just as the interpretation of a distribution's variance is different from that of its mean.[1] The purpose of this study is to explore the informational content associated with the linguistic tones of management and analysts in conference calls with respect to the price risk perceived by investors. Can the discretionary tones of conference call participants resolve (or intensify) investor uncertainty about the value of the firm?

Anecdotally, both stock and option markets appear to be highly sensitive to conference call content. For example, when hedge-fund manager David Einhorn asked a series of probing questions on a May 1, 2012, conference call for Herbalife Ltd., the result was a one-day slide of 20% in the firm's stock-market value.[2] At the same time, option implied volatilities for the five post-call days surged by 66% for calls (64% for puts) relative to the five pre-call days, indicating a large increase in investor uncertainty about the valuation of Herbalife. Conversely, when

[1] For example, if management discloses information in a conference call which removes uncertainty about its stock's future value, the current price need not change while the implied volatility would decrease.

[2] From Juliet Chung, Joe Light, and Tom McGinty's article in *The Wall Street Journal*, "A Mighty Wind: Sizing Up Fund Manager's Sway," on September 18, 2012.
http://www.wsj.com/articles/SB10000872396390443720204578002362100327312

analysts "started piling on Costco in a conference call" held during the morning hours of October 8, 2013, Costco shares quickly slumped roughly 2%. Then CFO Richard Galanti responded by using Costco's "incredible, giant" rotisserie chicken business as a metaphor for how managers envisioned thriving over the long-run. "…[Once] Galanti started spinning his chicken stories around 10 a.m., the stock climbed all the way back."[3] Around this call date, implied volatilities for the five-day post-call period fell by 10% for calls (13% for puts) relative to the five pre-call days, demonstrating the market-calming ability skilled management can exercise in guiding the perception of conference call discussions even in the presence of unfavorable fundamentals.

In this study, we aspire to determine whether conference call content (i.e. linguistic tones) can influence investor uncertainty about firm value. To accomplish this, we apply established textual analysis techniques to quarterly earnings conference calls and extract the linguistic tones that call participants convey to investors. Investor risk perception is quantified using implied volatilities (IV) derived from the Black and Scholes (1973) option pricing model. IV is commonly used as an ex-ante measure of perceived asset price risk (e.g., Patell and Wolfson 1979, 1981; Poterba and Summers 1986; Canina and Figlewski 1993) and an indication of investor expectations about the underlying asset (Bollen and Whaley 2004; Gârleanu, Pedersen, and Poteshman 2009). By construction, it captures investors' subjective judgments regarding the forward-looking volatility of the underlying stock price over the life of the option (e.g. 30 days, 60 days, etc.) In short, IV represents the market's forecast of future volatility and, thus, investor uncertainty about firm valuation. We examine the potential effects of call tone on the overall level of perceived riskiness of the firm using IV levels directly in addition to IV spreads identified in the literature to help us tease out further nuance and direction with respect to

[3] From Kyle Stock's article in *Bloomberg Business*, "Costco Stands Behind Its Cheap Rotisserie Chicken Strategy," on October 9, 2013.
http://www.bloomberg.com/bw/articles/2013-10-09/costco-stands-behind-its-cheap-rotisserie-chicken-strategy

investor beliefs (Goyal and Saretto 2009; Cremers and Weinbaum 2010; Xing, Zhang, and Zhao 2010).

Our results suggest that investor perceptions of firm risk and their uncertainty of firm value are influenced by conference call linguistic content. We find that unexpectedly positive tone (tone that is more optimistic than justified by firm fundamentals) in the conference call introductory remarks by management leads to a reduction in call- and put-derived IV. Analyst tone has a similar effect, particularly when the earnings surprise is negative. However, longer introductory statements and greater levels of analyst questioning lead to increased IV. When utilizing the call- and put-derived volatility premium measures of Goyal and Saretto (2009), which are defined as spreads between IV and historical volatility (HV) as a measure of changes in perceived firm risk, we find that traders are strongly influenced by unexpected analyst tone. Specifically, abnormal analyst tone is negatively related to the volatility premium spread between IV and HV, suggesting that analysts help reduce investor uncertainty about the earnings event and related corporate communications.

We also examine measures which consider both calls and puts simultaneously following Cremers and Weinbaum (2010) and Xing, Zhang, and Zhao (2010). The Cremers and Weinbaum (2010) volatility spread captures deviations in put-call parity which can help determine directionality of market perceptions of risk. We find evidence that unexpectedly positive management tone during the question and answer portion of conference calls reduces the call-put volatility spread, particularly when the earnings surprise is negative. While a negative earnings surprise can increase uncertainty in puts relative to calls (i.e. investors are comparatively more afraid of a stock price decrease) positive management tone can help equalize price pressures in the options market and decrease the spread. The Xing, Zhang, and Zhao

(2010) measure captures the shape of the implied volatility function across moneyness as an indicator of return skewness and crash risk. That is, their spread uses the difference between the IV of out-of-the-money puts and the IV of at-the-money-calls, where a larger spread indicates a steeper smirk and higher crash risk. We show that unexpectedly positive manager tones, both in the introduction and discussion portions of the calls, are positively related to this spread, suggesting overly optimistic tone increases investors' uncertainty about the firm's crash risk. This result is more pronounced when earnings surprises are positive.

Altogether, our results suggest that discretionary conference call tone has a significant influence on the market's perception of value uncertainty and various firm risks. Positive call tones have an overall calming effect. However, the calming effects are not unbounded. While unexpectedly positive tone is helpful when earnings are unexpectedly disappointing, we find that investors consider management's unexpectedly positive tone to be a cause for concern when earnings are particularly impressive. This concern becomes manifested in the form of option investor pessimism and increased perception of crash risk. We contribute to the voluntary disclosure literature by demonstrating that the impact of conference call content extends beyond the simple conveyance of expected value information to market participants to their perceptions of expected risk as well. This study also contributes to our understanding of investor valuation uncertainty by mapping a specific channel through which investors gather risk-related information. Moreover, we add to the understanding of conference call dynamics and show the extent of managers' and analysts' separate ability to calm the market. These results have implications for managers who voluntarily engage in conference call disclosures, analysts who participate in such calls, investors, and those who seek to utilize options as a risk management tool for hedging.

The remainder of this study proceeds as follows. Related literature is discussed in the next section along with hypothesis development. We describe our sample characteristics and variable construction in section III. Section IV presents the research design and results and Section V provides robustness tests. Section VI concludes.

II. Related literature and hypothesis development

Our study is partially motivated by the early work of Patell and Wolfson (1979, 1981), who provide descriptive evidence of IV leading up to and following earnings announcement dates. Specifically, they analyze options around earnings announcements in order to detect investors' expectations regarding the range of possible stock price reactions. They contend that the options framework presents a viable means of testing forward-looking investor beliefs in situations where disclosures are ambiguous.

Amin and Lee (1997) find that options traders contribute to price discovery with respect to the dissemination of earnings news insofar as they initiate a greater portion of long (short) positions in the days leading up to good (bad) earnings news, where news is defined as the earnings surprise. Skinner (1997) validates the importance of using the options market to better examine earnings announcement disclosures, but argues that Amin and Lee's evidence is weak and economically limited. However, Billings and Jennings (2011) build on this work by supplying evidence that is consistent with options traders being able to anticipate the magnitude of the market response to unexpected earnings. Regardless of whether options traders anticipate information, or simply react to information, their trades provide us with an important means of analyzing the market's perception of firm risk as of a specific point in time. In this study we use

option derived IV because it is the only forward-looking measure of value uncertainty that can be obtained by observing the actions of investors.

Isakov and Pérignon (2001) create a theoretical framework for the evolution of IV around earnings announcement dates. The empirical support they provide for their model using data from the Swiss options market shows that the post-announcement IV path depends on the content of the earnings announcement; market uncertainty is reduced much more quickly (slowly) when the news is good (bad). However, they acknowledge that the earnings surprise is not the sole determinant of the informational content and their ability to model good and bad news is limited to the use of abnormal returns and analyst forecast dispersion. Nofsinger and Prucyk (2003) are similarly limited by the use of market returns to identify good and bad news, but find that bad macroeconomic news increases IV in the options markets, whereas good news is not associated with higher IV.

Using macroeconomic news events and T-Bond, Eurodollar, and Deutschemark options market data to derive IV, Ederington and Lee (1996) find that the unexpected part of an announcement is what drives market reactions and potentially resolves uncertainty. Rogers, Skinner, and Van Buskirk (2009) examine unexpected firm disclosure and uncertainty by studying how management earnings forecasts affect IV. They find that the forecasts increase short term volatility, particularly when they convey surprisingly bad news. However, like many other studies, the analysis relies on event-window stock returns to classify whether the managerial disclosures contain good or bad news.

In contrast, the quarterly earnings conference calls that we use do not suffer from such limitations. Conference call popularity has grown substantially since the implementation of Regulation Fair Disclosure (Reg FD), rendering them the second most utilized means of

voluntary disclosure behind earnings releases themselves (NIRI 2004).[4] Unlike the one-sided press releases, conference calls are an information-rich disclosure medium which provides an important window for management and analysts to express their opinions about recent performance and future firm potential. Most importantly, investors appear to pay keen attention to these calls (Frankel, Johnson, and Skinner 1999; Bowen, Davis, and Matsumoto 2002; Bushee, Matsumoto, and Miller 2003, 2004).

Frankel, Johnson, and Skinner (1999) provide evidence of elevated return variances and trading volumes during earnings conference calls suggesting that investors extract relevant information from the calls which is incremental to that contained in the press releases. Bowen, Davis, and Matsumoto (2002) show conference calls assist in lowering analysts' forecast error and also provide some weak evidence indicating they also can decrease analysts' forecast dispersion.[5] Bushee, Matsumoto, and Miller (2003) find that open calls are associated with a greater increase in small trades, consistent with individuals trading on information released during the call, and higher price volatility during the call period. Bushee, Matsumoto, and Miller (2004) show that the implementation of Reg FD, which mandates open access to all firm disclosures, resulted in increased price volatility for firms that previously held calls with restricted access. Moreover, they establish that individual investor trading around these events increased following the rule change.

Conference call signals can be subtle and nuanced with the added dynamic of hearing from both managers and analysts. Hollander, Pronk, and Roelofsen (2010) show that when managers do not answer analysts' questions investors interpret their silence negatively. Price et

[4] See Bethel (2007) for an overview of the evolution of financial disclosure regulation with a particular emphasis on the implementation of Reg FD in 2000.

[5] Analyst forecast dispersion can serve as a rough proxy for differences in investor beliefs with respect to future earnings. However, unlike option-implied volatility, analyst forecast dispersion does not directly measure investors' degree of value uncertainty.

al. (2012) demonstrate that linguistic call tones influence investor beliefs with a significantly positive relation observed between call tones and stock returns. Indeed, empirical evidence suggests that managers attempt to sway investor perception by strategically managing their word choices and put forth effort to set as high a tone as possible. Brockman, Li, and Price (2014) show that managers attempt to establish a high level of call tone, although other call participants don't necessarily follow suit. Huang, Teoh, and Zhang (2014) show that managers' strategic use of press release tone is effective in manipulating investor perceptions with a positive stock return effect at the earnings announcement. Larcker and Zakolyukina (2012) show that the linguistic content of managerial disclosures is different (e.g. more positive) for firms with subsequent restatements when compared to the linguistic content of firms who do not issue restatements, suggesting that linguistic features of conference call narratives can be used to identify deceptive behavior.

However, both the market and the courts may punish managers if such behavior is deemed to be deceptive. Rogers, Van Buskirk, and Zechman (2011) provide evidence that firms with unusually optimistic earnings announcements relative to other firms experiencing similar economic circumstances are more likely to be sued for material misrepresentation regarding the value of the firm. Similarly, Blau, DeLisle, and Price (2015) find evidence that short sellers profit by targeting firms with unusually optimistic statements by managers. Moreover, the data suggest that managers seek to minimize call risk by limiting the length of conference calls or by avoiding them if possible (Price, Salas, and Sirmans 2015). In an experimental setting, Hales, Kuang, and Venkataraman (2011) provide evidence which suggests that linguistic disclosure content in the context of the overall information environment may exacerbate bubbles in a bull

market and accelerate panics in a bear market. Altogether, conference calls can be a high stakes game.

Importantly, as a whole, the extant conference call literature discussed above establishes a definitive link between revealed call tones and the mean (the first moment) valuation of the firm's stock. However, it largely neglects the variance (the second moment) of the valuation, which is arguably just as important as the mean. In other words, to fully understand how the conference call disclosure mechanism affects investors' valuation process, it is imperative to not only assess the impact on the mean value but also on the uncertainty about that mean value. By ignoring variance researchers implicitly assume that, when forming a valuation estimate, investors either have no uncertainty or uncertainty is constant and homogeneous across all firms. We remove the implicit assumption that exists in current literature by explicitly examining the relation between earnings conference call tones and investors' perceived price risk (value uncertainty).

Given the preponderance of evidence in the literature establishing IV as the premier measure of investors' forward-looking volatility, we use IV and IV spreads to investigate whether conference call tones extend beyond the equities market and the stock price's first moment. That is, given the potential variability in market outcomes corresponding to earnings conference calls and the observed increases in stock price volatility around conference call events, we ask whether the linguistic features of such calls can influence investors' forecasts of price uncertainty as measured by IV. More formally, we test the following hypothesis stated in standard null form:

Hypothesis 1 (H1): *Options traders' perceptions of stock price risk are not related to*

unexpected quarterly earnings conference call linguistic tones.

In the event a significant relation leads us to reject the null, consistent with our expectations, then we further explore the conference call dynamic by asking several related follow-up questions. Specifically, we examine whether call tones improve investors' ability to accurately forecast future volatility. We then test if call tones explain deviations from put-call parity and whether they help us better understand investor preferences for various options which further reveal investor risk expectations. In standard null form the additional hypotheses are as follows:

Hypothesis 2 (H2): *Unexpected quarterly earnings conference call linguistic tones do not affect the observed spreads between IV and HV, measuring perceived changes in firm risk.*

Hypothesis 3 (H3): *Unexpected quarterly earnings conference call linguistic tones do not affect the observed spreads between put-derived IV and call-derived IV, measuring investor optimism.*

Hypothesis 4 (H4): *Unexpected quarterly earnings conference call linguistic tones do not affect the shape of the IV smirk as reflected by the spreads between out-of-the-money put-derived IV and at-the-money call-derived IV, measuring crash risk.*

III. Sample and variable descriptions

A. Sample construction

We construct our sample according to the steps in Table 1, Panel A. The initial list of firm conference call transcript observations comes from the FD (Fair Disclosure) database provided by LexisNexis.[6] We download all 302,274 transcripts in this database, which spans the universe of transcripts filed under Reg FD. This sample includes corporate calls, as well as other calls such as calls hosted by state and federal agencies. We next check for data sufficiency. Following Panel A of Table 1, we only keep earnings conference call observations with sufficient data on Compustat[7] (52,658 observations), and sufficient data in our options database (9,044 observations). Lastly, we write C++ computer code that identifies each word, by speaker, within a given conference call transcript and then tabulates the speaker-specific frequency distribution of those words which correspond to predefined word lists (i.e. specialized dictionaries) associated with categories of interest (e.g. positive, negative).[8] This process enables us to quantify the tones attributable to each of the distinct call components - the introductory remarks by management, the analyst questions, and the managerial responses.

In Table 1, Panel B, we report the ten most frequently occurring positive and negative words. We report the positive words in column 1, and the percentage of the total count of positive words that this word represents in column 2. In column 3 we report the most frequently occurring negative words. Finally, in column 4 we report the percentage of the total count of negative words that this word represents. The most frequently occurring positive word is

[6] Corporate conference call transcripts are publically available under Reg FD which was promulgated by the SEC in August 2000 (17 CFR 243.200). Compliant firms publish transcripts of their conference calls on the Fair Disclosure Wire. LexisNexis, the legal-information services provider, has archived these transcripts in their FD Database.
[7] We use a computerized matching algorithm which requires the company name in Compustat to exactly match the company name in the conference call.
[8] See Loughran and McDonald (2011) for the dictionary used to categorize words and a detailed description of this process as applied in financial research.

STRONG and accounts for only 2.15% of the total positive words in our sample. The next most frequently occurring positive word is GREAT at 1.63% and the tenth most frequently occurring positive word is PROGRESS at 1.39%. Overall, the occurrences of positive words are reasonably well distributed and no single word, or group of words, accounts for an overly large portion of the sample. We see the same distribution occurring in the negative word list, where the most frequently occurring negative word is QUESTION at 2.64% and the tenth most frequently occurring negative word is AGAINST which accounts for 1.15% of the sample. In summary, the occurrences of both the positive and negative words appear reasonably well distributed which suggest that no single word, or group of words, biases our sample.

Table 2 reports the distribution of this sample across industry and time. Panel A reports that the largest industry in our sample is "Business Equipment" with a total of 1,973 firm observations which represents 21.8% of the sample. Health is second at 1,413 observations (15.6%) followed by Manufacturing at 1,275 observations (14.1%). The industry with the smallest number of observations is consumer Durables at 168 observations (1.9%). All of the Fama and French (1997) 12 industry categories are represented in the sample. Panel B reports the distribution of the sample by year. The bulk of the sample is distributed over the years 2005 through 2011. The year 2008 (1,711) has the greatest number of observations and the year 2002 has the least (1).

B. Firm Characteristic Data

We obtain firm accounting and business segment data for our sample of post-Reg FD conference call firms from Compustat, price and historical volatility data from CRSP,

institutional ownership from Thomson Reuters, analyst data from IBES, and option data from OptionMetrics.

Our firm characteristic control variables build on the expected conference call tone model from Huang, Teoh, and Zhang (2014). We create the variables ROA, MOM, SIZE, BM, STD_RET, STD_EARN, AGE, BUSSEG, GEOSEG, LOSS, ΔEARN, SUE, and AF following their methods. We then expand the Huang, Teoh, and Zhang set of explanatory variables to include those deemed by Altman (1968) as important to determining financial distress. These additional variables are sales growth measured over the previous year (SGROWTH), working capital to total assets (WCAPRAT), retained earnings to total assets (RERAT), EBIT to total assets (EBITRAT), leverage as total liabilities to total assets (DEBTRAT), and sales to total assets (SALESRAT). All variable definitions may be found in the Appendix.

Since the market's perception of the firm post-conference call is largely due to updated fundamentals as well as management's tone in their presentation, we construct an earnings surprise measure SUE from the revealed earnings for the quarter relative to analyst forecasts for that quarter's earnings from IBES following Livnat and Mendenhall (2006).

We measure the market's perception of the riskiness of the firm post-conference call using the natural log of implied volatility data from OptionMetrics.[9] Specifically, we capture the implied volatility for the 20 day window starting two days after the earnings call from the standardized options file in OptionMetrics for 30, 60, and 91-day maturities.[10] Based on these 20-day average implied volatilities, we create spreads previously identified in the options

[9] Volatilities (implied and realized) are log-normally distributed. Therefore we take the natural log of the implied volatilities to normalize the distributions (see, for example, Christensen and Prabhala 1998). Henceforth, all mention of implied or realized volatilities are actually the natural logs of the volatilities.

[10] The standardized options file uses a kernel-smoothing technique to interpolate a constant-maturity contract on each day for a given maturity from actual price data. This enables a cleaner time series comparison by keeping option maturity constant during the entire observation window, thereby avoiding term structure issues. Hentschel (2003) suggests such a method can reduce problems related to asynchronous timing and model misspecification.

literature as indicative of investor beliefs about risk. The use of spreads, rather than the implied volatility levels directly, allows us to control for the overall level of perceived riskiness of the firm.

The first implied volatility spread we create is CW, call minus put implied volatility, following Cremers and Weinbaum (2010) as a measure of investor optimism about the firm. The authors find that this spread reflects investor expectations, consistent with the price pressure argument of Gârleanu, Pedersen, and Poteshman (2009): investors with optimistic (pessimistic) expectations will buy calls (puts), driving up the implied volatility. This spread, therefore, allows us to measure the effect of unexpected tones from the conference call on the subsequent degree of optimism about the firm in the market. We create this spread for each firm *i* at each date *t* from the 20-day averages of the constant maturity standardized options data we obtain from OptionMetrics for options with 30, 60, and 91 day maturities.

$$CW_{i,t} = Call\_IV_{i,t} - Put\_IV_{i.t} \quad (1)$$

The next spread we create is GS, call implied volatility minus the prior year's realized volatility, following Goyal and Saretto (2009). This volatility premium reflects investor perceptions about the overall future riskiness of the firm. Goyal and Saretto (2009) find that firms with poor (good) performance experience an increase (decrease) in the volatility premium, as investors extrapolate future performance based on recent results. This spread allows us to measure the market's beliefs about the riskiness of the firm. We again compute it for each firm-date from the 30, 60, and 91-day standardized contracts.

$$GS_{i,t} = Call\_IV_{i,t} - Realized\_IV_{i.t} \quad (2)$$

The last spread we create is XZZ, out-of-the-money (OTM) put implied volatility minus the at-the-money (ATM) call implied volatility, following Xing, Zhang, and Zhao (2010). This

spread picks up the slope of the implied volatility function (IVF) across strike prices, indicative of tail risk. The implied volatility "smirk" in options reflects tail risk fears, and OTM puts have higher implied volatilities than their ATM call counterparts due to investor demand for the insurance they provide (Bollen and Whaley 2004; Gârleanu, Pedersen and Poteshman 2009). The sloped implied volatility function may also be due to stochastic volatility or jumps in the underlying price process (Bakshi, Cao, and Chen 1997; Bates 2000; Aït-Sahalia, Wang, and Yared 2001; Liu, Pan, and Wang 2005; Broadie, Chernov, and Johannes 2009). In both cases, however, the higher the slope of the implied volatility function and the spread between OTM and ATM volatilities (i.e. a situation where traders prefer to trade OTM puts), the more significant the investor concerns about tail or crash risk in the firm. We also compute this spread for 30, 60, and 91 day maturities from the OptionMetrics volatility surface. The OTM puts are those with moneyness, measured as the ratio of spot and strike prices, between .8 and .95. The ATM put IVs are taken from the standardized options file, which is at-the-money by construction. The implied volatility spread proxying for investor fears about tail risk is thus defined as

$$XZZ_{i,t} = Put\_IV_{i,t}^{OTM} - Call\_IV_{i,t}^{ATM} \quad (3)$$

IV. Research design and results

A. Methodology

We begin our analysis by first constructing the unanticipated tones of the management and the analysts by orthogonalizing the tones of the call to the fundamentals of the firm. The tones of each portion of each call are calculated similar to Price et al. (2012):

TONE = (# Positive words - # Negative words)/(# Positive words + # Negative words) (4)

The tones are calculated separately for management during the introductory session of the call (ITONE), management during the question and answer (Q&A) portion of the call (MTONE), and analysts during the Q&A session of the call (ATONE). Then, similar to Huang, Teoh, and Zhang (2014) and Brockman, Li, and Price (2014), we regress each TONE variable on firm fundamentals, characteristics (e.g. operating risks, growth opportunities, and firm complexity), and analysts' estimates:

$$\begin{aligned} TONE_{i,t} = \ & \alpha + \beta_1 ROA_{i,t} + \beta_2 MOM_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 BM_{i,t} + \beta_5 STD\_RET_{i,t} \\ & + \beta_6 STD\_EARN_{i,t} + \beta_7 AGE_{i,t} + \beta_8 BUSSEG_{i,t} + \beta_9 GEOSEG_{i,t} + \beta_{10} LOSS_{i,t} \\ & + \beta_{11} \Delta EARN_{i,t} + \beta_{12} SUE_{i,t} + \beta_{13} AF_{i,t} + \beta_{14} SGROWTH_{i,t} + \beta_{15} WCAPRAT_{i,t} \\ & + \beta_{16} RERAT_{i,t} + \beta_{17} EBITRAT_{i,t} + \beta_{18} DEBTRAT_{i,t} + \beta_{19} SALESRAT_{i,t} + f_{i,t} \\ & + \varepsilon_{i,t} \end{aligned} \tag{5}$$

Where $f_{i,t}$ represents a vector of fixed effects that includes firm, year-quarter, and Fama and French (1997) industry dummies. The residuals from this regression, $\varepsilon_{i,t}$, represent the TONE unrelated to the firm's characteristics and performance, or the abnormal tone (ABTONE). Panel A of Table 3 presents the summary statistics for the variables in equation (5). The mean ITONE, MTONE, and ATONE are 0.056, -0.122, and -0.281, respectively. This indicates that the tone of the introduction of the call is, on average, relatively more positive than the tones in the Q&A session. The TONE variables have very similar standard deviations, ranging from 0.334 (MTONE) to 0.341 (ATONE).

There are three ABTONE variables constructed for each call in the sample: the management's introduction abnormal tone (I_ABTONE), management's Q&A abnormal tone (M_ABTONE), and analysts' Q&A abnormal tone (A_ABTONE). We are interested in the

relation between these abnormal tone measures and the implied volatility (IV) variables. Panel B of Table 3 presents the summary statistics for these variables and the controls we use in this second stage of the estimation. As expected, the three abnormal tone measures are centered about zero, but with standard deviations ranging from .33 to .38. The following regression is used to explore these relations:

$$
\begin{aligned}
IV\ MEASURE_{i,t} &= \alpha + \gamma_1 I\_ABTONE_{i,t} + \gamma_2 M\_ABTONE_{i,t} + \gamma_3 A\_ABTONE_{i,t} + \gamma_4 SUE_{i,t} \\
&+ \gamma_5 SIZE_{i,t} + \gamma_6 MB_{i,t} + \gamma_7 MOM_{i,t} + \gamma_8 EXPER_{i,t} + \gamma_9 CALLAN_{i,t} \\
&+ \gamma_{10} ANALYST_{i,t} + \gamma_{11} IO_{i,t} + \gamma_{12} ICOUNT_{i,t} + \gamma_{13} MCOUNT_{i,t} + \gamma_{14} ACOUNT_{i,t} \\
&+ f_{i,t} + \epsilon_{i,t}
\end{aligned}
\tag{6}
$$

Where SUE is the standardized unexpected earnings, SIZE is the log of the firm's market capitalization, MB is the market to book equity ratio, MOM is the buy and hold return over the previous 60 trading days, EXPER is the number of earnings conference calls the firm has previously held, CALLAN is the log of the number of analysts who speak in the Q&A portion of the call, ANALYST is the log of the number of analysts who issue earnings forecasts for the firm, IO is the percentage of total outstanding shares owned by institutional investors, ICOUNT is the log of the number of words spoken by management in the introductory session of the call, MCOUNT is the log of the number of words spoken by management in the Q&A session of the call, and ACOUNT is the log of the number of words spoken by analysts in the Q&A session of the call. The IV MEASURE is one of the various implied volatility measures discussed in the previous section and $f_{i,t}$ is a vector of fixed effects that includes year-quarter and Fama and French (1997) industry dummy variables. The regression estimations' standard errors are

clustered by firm and industry according to Petersen (2009).[11] In order to reduce the impact of outliers, all variables in these regressions are winsorized at the 1% and 99% levels. If the estimated values for γ_1, γ_2, or γ_3 are statistically different than zero, then there will be evidence to reject the null hypotheses.

B. ABTONE Creation Results

Panel A of Table 4 shows the correlations between the variables. The correlation between raw tone variables by section, ITONE and MTONE (ATONE) is 0.373 (0.235), and the correlation between MTONE and ATONE is 0.290. Thus the TONE variables tend to move with each other. Outside of this, ITONE is most heavily correlated with STD_RET at -0.106. The largest correlation for both MTONE and ATONE is with MOM at 0.075 and 0.134, respectively. There are 9,044 firms with enough data to be included in the regressions.

We then fit the model in (5) to the three tone measures, ITONE, MTONE, and ATONE, to separate these overall tones into the portion justified by fundamentals and the abnormal tones unrelated to those fundamentals, which we call I_ABTONE, M_ABTONE, and A_ABTONE respectively. Table 5 presents the results of this first-stage regression. This isolation of abnormal tones follows and extends the approach of Huang, Teoh, and Zhang (2014). Notably, the R-square measure is significantly higher than that of the earlier work due to the inclusion of additional explanatory variables and firm and time fixed effects. Our models thus explain 50% to 20% of overall variation, significantly higher than the 4% achieved by Huang, Teoh, and Zhang and other prior work.

[11] The sample is an unbalanced panel where a large number of firms appear in the data only once. Thus, rather than cluster errors at the firm level, we cluster at the industry level to ensure there are sufficient numbers of firms per cluster (Thompson 2011). However, the results are similar when standard errors are clustered by firm.

The effects of our fundamental performance variables on the three tone measures are, on the whole, not surprising. MOM, the abnormal performance over the prior 60 days, boosts all three tone measures with a 1% significance level. SIZE, on the other hand, reduces all three with the same high significance, and firm AGE reduces managerial introductory tone at the 1% level, indicative of managers moderating their discussion over time. STD_RET, LOSS, ΔEARN, EBITRAT, SALESRAT all affect tone in predictable ways. Some fundamentals affect tone in unexpected ways, consistent with attempts at damage control by management and skepticism by analysts: ROA significantly reduces analyst Q&A tone, while STD_EARN significantly increases management intro tone and SGROWTH significantly reduces it.

After fitting the models in (5), we create predicted levels of ITONE, MTONE, and ATONE and define the abnormal tone measures I_ABTONE, M_ABTONE, and A_ABTONE as the difference between the actual and predicted values. These are the portions of manager and analyst tone that are discretionary and not driven by fundamentals, and it is these measures that reflect the opinions of management and analysts rather than the underlying fundamental facts about the firm.

C. Relation between Implied Volatility Measures and ABTONE

The correlations between the variables in the regressions are presented in Panel B of Table 4. The correlations between I_ABTONE, M_ABTONE, and A_ABTONE are all positive, ranging from 0.241 to 0.298. As a preliminary test of a relation between implied volatility and abnormal call tone, each quarter we sort the sample into quartiles by the various ABTONEs and examine the implied volatility measures in the quartiles. Panel A of Table 6 shows the results of these sorts. CALLVOL, PUTVOL, and GS decrease monotonically as the quartiles of

I_ABTONE, M_ABTONE, and A_ABTONE increase from low to high. Additionally, the differences in these measures between high and low quartiles are statistically significant at the 1% level. This indicates abnormally high positive tone by management and analysts can decrease the uncertainty of firm valuation. In terms of magnitude of the differences, I_ABTONE and M_ABTONE have a larger effect on CALLVOL (-0.130 and -0.128, respectively) and PUTVOL (-0.130 and -0.127, respectively) than does A_ABTONE (-0.069 for both CALLVOL and PUTVOL). However, A_ABTONE has about twice as large of an effect on the difference in GS (-0.060 for A_ABTONE, -0.030 for M_ABTONE, and -0.036 for I_ABTONE). CW does not appear to have any relation to the abnormal tone measures. Interestingly, there is a positive and significant relation between both abnormal management tone measures and XZZ. This result signifies that high abnormal tone by management, while the results outlined above show decreases firm value uncertainty, increases the market's perception of crash risk. These results seem contradictory, and will be examined more closely later.

Barberis, Shleifer, and Vishny (1998), Veronesi (1999), and Nofsinger and Prucyk (2003) show that investors' uncertainty reacts differently to good news than to bad news. This motivates us to separate the sample into good news and bad news events. Since the conference call pertains to earnings announcements, we use SUE to delineate good news from bad by separating the sample into calls associated with either negative (bad news) or positive (good news) SUE. In Table 6, Panel B shows the sorting results when SUE is negative and Panel C shows the results when SUE is positive. The differences in the high and low quartiles of I_ABTONE are similar whether SUE is negative or positive. This is also the case when sorted by M_ABTONE, with the exception that there is a statistically significant difference in GS measure only when SUE is positive (good news). When sorted by A_ABTONE, the magnitudes of the differences are nearly

double when SUE is negative than when SUE is positive. Since bad news generally increases uncertainty, analysts have a larger impact on resolving uncertainty when SUE is negative. These tests involve relatively simple sorts, therefore there could be confounding elements that may be biasing the results. Thus, we estimate equation (6) to control for a variety of firm characteristics. The results of the estimations are discussed in the following subsections.

C.1 Call Implied Volatility

Panel A of Table 7 presents the results of regressing CALLVOL on the ABTONE and control variables. I_ABTONE, M_ABTONE, and A_ABTONE are all negatively related to CALLVOL of all maturities and positive and negative SUE. However, only I_ABTONE is statistically significant at the 5% level or better for all specifications, with coefficient estimates ranging from -0.0454 to -0.0539. This indicates that management's unanticipated positive (negative) tone in the introduction of the conference call has a calming (upsetting) effect in the call option market with respect to value uncertainty. A_ABTONE has a statistically significant effect, but it is limited to firms that have negative SUE. This shows that the call option market is only soothed by unexpected positive analyst tone when the firm does not meet analysts' expectations. This effect is also limited to call options of 30- and 60-day maturities with estimated coefficients of -0.0255 and -0.0178, respectively. Thus, there is evidence to reject hypothesis H1. However, unexpected management tone in the Q&A session has no effect on the Call IVs.

C.2 Put Implied Volatility

Similar to CALLVOL, Panel B of Table 7 shows I_ABTONE, M_ABTONE, and A_ABTONE are all negatively related to PUTVOL of all maturities and positive and negative SUE. Also similar to the CALLVOL results, only I_ABTONE is statistically significant at the 5% level or better for all specifications with coefficients ranging from -0.0440 to -0.0533 which shows management's unexpected positive (negative) tone in the introduction of the conference call has a calming (disconcerting) effect in the put option market. Again, A-TONE only has a statistically significant effect when firms have negative SUE. However, in this case, A-TONE has a significant effect across all three maturities and at higher significance level (1% level for 30- and 60-day maturities and 5% for the 90-day maturity) with estimates ranging from -0.0249 to -0.0334. Although management's unanticipated tone in the Q&A session has no effect on the Put IVs, there is additional evidence to reject hypothesis H1.

C.3 Goyal and Saretto Change in Perceived Risk Measure

Panel A of Table 8 displays the results when we use the GS measure of volatility premium as the dependent variable in the regressions. There is a strong relation between A_ABTONE and GS as the estimated parameters (ranging from -0.0428 to -0.0666) on A_ABTONE are statistically significant at the 1% level across all regression specifications. Thus, unexpected positive analysts' tone can reduce the volatility premium of the firm. All management-related abnormal tone is not significantly related to GS. This is evidence in favor of rejecting hypothesis H2 and demonstrates that only analysts, not management, can provide tone that influences investor perceptions of the firm's future price risk. Panel B uses an alternate form of GS, where Put IVs are used instead of Call IVs. The resulting parameter estimates and significance levels are almost identical to the original form of GS. These results suggest that

unexpectedly positive (negative) tone by analysts will reduce (increase) the uncertainty that investors have about firm value. In this particular context, management does not seem to possess this type of power over the investors.

C.4 Cremers and Weinbaum Direction of Risk Measure

The results for the CW measure are shown in Table 9. Unlike the earlier sorts, there is evidence that abnormal tone and CW are related, but only in certain circumstances. Statistical significance is concentrated in the Q&A session and only when SUE is negative. Interestingly, M_ABTONE and A_ABTONE have differing effects on the optimism of option investors. There is a negative and statistically significant (at the 1% level) relation between M_ABTONE and the 30- and 60-day CW measure. This indicates that option investors perceive unexpectedly optimistic tone by management in the Q&A session as bad news and react pessimistically. Given that this happens when the firms miss analysts' earnings estimates, options investors may believe that management is unjustly overcompensating in their tone because they missed earnings expectations and the higher the unanticipated tone is, the more pessimistic options investors become.[12] Unexpectedly positive analyst tone, however, is met by options investors by more optimistic trading, as shown by the positive and significant (at the 1% level) parameter estimated for the 60- and 90-day CW measures. Thus, it appears option investors believe analysts' abnormal tone and disbelieve management's abnormal tone when they receive bad news about not meeting earnings forecasts. These results suggest that null hypothesis H3 should be rejected.

[12] This explanation is related to the concept of "inflated talk" proposed by Kartik, Ottaviani, and Squintani (2007). Blau, DeLisle, and Price (2015) find short sellers react to such inflated talk by aggressively short selling the stock, and show the short sellers are well-informed in doing so by earning abnormally high returns on their trades. Option investors are also considered well-informed, and could have a similar response to inflated talk.

C.5 Xing, Zhang, and Zhou Crash Risk Measure

Table 10 presents the results from the regressions using the XZZ measure as the dependent variable. The results corroborate the findings when using the CW measure. In the full sample regressions, the I_ABTONE and M_ABTONE are both positive and statistically significant at the 5% level for the 30- and 60-day options. This indicates that options investors expect higher crash risk when management speaks with higher unexpected tone. Again, it appears options investors are disbelieving, or at least wary, of unexpectedly high management tone in the conference call. This is particularly true when SUE is positive (the firm exceeds analysts' earnings forecasts).[13] The estimated parameter on A_ABTONE is only statistically significant (and at the 1% level) with 90-day options and when SUE is negative. So when the firm has bad news in terms of not meeting earnings expectations, analysts can reduce the perception of crash risk with unpredictably positive tone.

V. Robustness

Since our sample allows us to track the evolution of the market's reaction to abnormal tones in conference calls through time, we conduct a subsample analysis to test whether the market and call participants learn about each other over time. The financial crisis of 2007-2009 is a strong negative shock to the earnings of most firms during that period, and we use it to study the market's and managers' reaction to the management of firm fundamentals revealed during the calls. We create three subsamples: the 2002-2006 pre-crisis period, the 2007-2009 crisis, and the 2010-2012 post-crisis period. Table 11 presents the second-stage regressions of option-based

[13] Interestingly, this is the case (high abnormal tone and positive earnings surprise) in which Blau, DeLisle, and Price (2015) find short sellers aggressively short inflated talk.

risk measures on abnormal tone and firm characteristic controls following the model in equation (6). The control variable coefficients are suppressed for brevity.

Panel A of Table 11 presents the 2002-2006 pre-crisis period estimates for the three risk measures. Consistent with the full-sample results in Table 8, the GS change in perceived risk measure is negatively related to positive analyst abnormal tone, and this relationship does not significantly diminish with option maturity. In other words, firms are perceived as being less risky when unexpected analyst tone is positive. There is no significant relationship between the CW directional risk measure and any of the three abnormal tones, unlike in Table 9. The XZZ measure is positively related to positive analyst abnormal tone, unlike in Table 10, but this relationship decays through time and becomes insignificant at the 91 day maturity.

Panel B presents the crisis period estimates from 2007-2009. The GS measure is again negatively related to unexpected positive analyst tone. The CW directional risk measure is negatively related to management abnormal tone during the Q&A session, but positively to the analyst abnormal tone. The options market distrusts management abnormal tone during the crisis period, but trusts the analysts. These results are stronger versions of the full-sample ones in Table 9. Consistent with the finding that the market does not trust management during the crisis period, the XZZ tail risk measure is positively related to management's positive abnormal tone in the Q&A session. These results are also stronger than the full-sample Table 10 results. Overall, the options market has a stronger and more negative reaction to manager abnormal tone during the crisis, consistent with a higher degree of suspicion during the period of higher risk aversion.

Panel C presents the post-crisis findings from 2010-2012, which confirms the relationship between the GS change in risk perception measure and analyst abnormal positive tone. The market reduces the volatility premium with positive abnormal analyst tone throughout the

subsamples as well as the full sample, making this the most robust of our findings. The CW risk direction measure is not significant post-crisis. Notably, the coefficient on the XZZ tail risk measure reverses itself and becomes negatively related to abnormal manager Q&A tone post-crisis. This suggests that management has either re-established the trust of the options market after the financial crisis, or has at least learned how better to manage the market's reaction to the discretionary component of its tone during earnings conference calls.

VI. Conclusion

Quarterly earnings conference calls are an important medium through which managers and analysts are able to communicate with each other. Such voluntary disclosures, which are uniformly open to the public after the implementation of Reg FD in 2000, provide investors with an opportunity to gather information and further assess their firm valuations. The literature shows conference call content to be informative, providing value-relevant information which is incremental to the preceding earnings announcement. The generally observed relation is that positive call content leads to ensuing returns that are similarly positive, while negative call content leads to negative subsequent returns. Thus, the manner in which conference call communication is received by the market is an important matter with economic consequences that can be substantial.

We examine option implied volatilities around quarterly earnings conference calls. IV is a commonly used ex-ante measure of perceived asset price risk that helps us understand forward-looking investor beliefs regarding the range of possible stock price outcomes. Given the potential variability in market reactions corresponding to earnings conference calls, and the observed increases in stock price volatility around conference call events documented in the

literature, we ask whether the content of such calls can influence investors' forecasts of future price volatility (i.e. investors' perception of price risk and value uncertainty).

Using both call- and put-derived IV levels and several IV spread constructs from the option pricing literature, we also investigate 1) whether call content can improve the accuracy of these forecasts, 2) whether call content can explain deviations from put-call parity which can help determine directionality of risk perceptions, and 3) whether call content helps us better understand investor preferences for various types of options and whether they are in-the-money, which further reveals investor risk expectations.

Through established content analytical techniques (i.e. textual/linguistic analysis) we find that measures of conference call tone (i.e. the sentiment revealed by word choices) can influence market perceptions of firm risk. Overall, we find that abnormal call tones are negatively related to IV. In other words, positive call tones can have a significant calming (reduction in uncertainty) effect. However, we further identify a scenario in which there can be too much of a good thing. In cases where earnings are particularly impressive overly positive call tone by management can be a cause for investor pessimism and increased uncertainty. Furthermore, we find that the options market responds favorably to unexpectedly positive analyst tone, and less so to unexpectedly positive management tone. This effect becomes stronger during the 2007-2009 economic downturn. This discounting of managerial tone not justified by fundamentals is consistent with shareholder discipline, which prior research confirms is stronger during recessions.

Altogether, this study contributes to the literature in several ways. First, we demonstrate that the impact of conference call content extends beyond the simple conveyance of value-relevant information to market participants. That is, we show linguistic call content has the

ability to influence traders' perceptions of risk. Second, we expand the general understanding of investor risk perception by mapping a specific channel through which investors gather risk-related information. Third, we add to the understanding of conference call dynamics and investor trust by showing the extent of managers' and analysts' separate ability to calm (or upset) the market.

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Table 1: Sample Selection

This table reports our sample selection procedure as well as the most frequently occurring positive and negative words in our sample. In Panel A we begin our sample selection procedure by identifying all conference calls in the Fair Disclosure database. This database is very large and contains 302,274 observations. However, not all of these are corporate conference calls, some are conference calls by state and federal agencies. Furthermore, not all firms with conference called are reported on Compustat. When we limit our search to just corporate conference calls with financial data available on Compustat, the number drops to 52,658 transcripts. We further limit our sample to those firms with reported option data. This leaves us with a sample size of 9,044 firm observations. Panel B reports the ten most frequently occurring positive and negative words. We report the positive words in column 1, and the percentage of the total count that this word represents in column 2. In column 3 we report the most frequently occurring negative words. Finally, in column 4 we report the percentage of the total count that this negative word represents.

Panel A: Attrition of data due to matching

Data Selection Step	Observations
Size of the LexisNexis Fair Disclosure database (as of October 2013)	302,274
Number of transcripts exactly matched to Compustat firms	52,658
Observations which matched to option data	9,044

Panel B: Most frequently used positive and negative words

Top 10 Positive Words	Percent of Positive Words	Top 10 Negative Words	Percent of Negative Words
STRONG	2.15%	QUESTION	2.64%
GREAT	1.63%	LOSS	2.33%
OPPORTUNITIES	1.58%	DECLINE	1.85%
IMPROVEMENT	1.57%	ILL	1.65%
IMPROVED	1.46%	RESTRUCTURING	1.61%
OPPORTUNITY	1.44%	LOSSES	1.43%
PLEASED	1.43%	NEGATIVE	1.30%
POSITIVE	1.43%	DECLINED	1.29%
BETTER	1.42%	DIFFICULT	1.27%
PROGRESS	1.39%	AGAINST	1.15%

Table 2: Distribution of sample over industry and time

This table reports the sample distribution by industry and by year. The complete sample is composed of 9,044 firm observations. It spans the time period of 2001 through to 2012. Panel A reports distribution by Fama and French (1997) 12 industry classifications. Panel B reports distribution by year.

Panel A	Number of Firms	Percent of Total
Business Equipment	1973	21.8%
Chemicals	332	3.7%
Durables	168	1.9%
Energy	590	6.5%
Health	1413	15.6%
Manufacturing	1275	14.1%
Financial	241	2.7%
Non-Durables	341	3.8%
Other	992	11.0%
Shops	832	9.2%
Telecom	183	2.0%
Utilities	704	7.8%
Total	9044	100%

Panel B	Number of Firms	Percent of Total
2002	1	0.0%
2003	37	0.4%
2004	210	2.3%
2005	1019	11.3%
2006	930	10.3%
2007	1383	15.3%
2008	1711	18.9%
2009	1076	11.9%
2010	1191	13.2%
2011	1472	16.3%
2012	14	0.2%
Total	9044	100%

Table 3: Descriptive Statistics

This table provides descriptive statistics for the variables used in the first stage regressions for abnormal tone calculation (Panel A) and for the variables in the second stage analysis (Panel B). Individual variable definitions are outlined in the Appendix.

Panel A: First Stage Variables	Mean	Standard Deviation	Minimum	25th Percentile	Median	75th Percentile	Maximum
ITONE	0.056	0.340	-1.000	-0.192	0.057	0.303	1.000
MTONE	-0.122	0.334	-1.000	-0.355	-0.135	0.089	1.000
ATONE	-0.281	0.341	-1.000	-0.527	-0.316	-0.079	1.000
ROA	0.004	0.070	-2.405	0.002	0.010	0.022	5.027
MOM	0.023	0.218	-0.857	-0.090	0.021	0.125	6.244
SIZE	14.425	1.572	9.540	13.290	14.251	15.395	20.054
BM	0.523	0.505	-5.988	0.257	0.435	0.682	12.683
STD_RET	0.479	0.274	0.012	0.299	0.421	0.585	6.379
STD_EARN	0.537	1.044	0.011	0.151	0.275	0.558	45.028
AGE	8.539	0.983	4.477	7.934	8.581	9.284	10.353
BUSSEG	1.101	0.520	0.693	0.693	0.693	1.609	2.996
GEOSEG	1.151	0.526	0.693	0.693	1.099	1.609	3.296
LOSS	0.216	0.412	0.000	0.000	0.000	0.000	1.000
DEARN	0.002	1.900	-155.650	-0.110	0.010	0.130	102.18
SUE	0.000	0.046	-2.988	0.000	0.001	0.002	1.599
AF	0.025	0.380	-32.416	0.022	0.049	0.071	2.299
SGROWTH	0.164	18.118	-16.955	-0.182	-0.079	0.025	2651.26
WCAPRAT	0.255	0.239	-1.222	0.064	0.213	0.415	0.969
RERAT	-0.178	1.532	-68.290	-0.081	0.109	0.303	4.012
EBITRAT	0.010	0.112	-3.020	0.005	0.019	0.034	10.045
DEBTRAT	0.000	0.002	0.000	0.000	0.000	0.000	0.077
SALESRAT	0.225	0.200	-0.203	0.094	0.182	0.287	2.491

Table 3: (Continued)

Panel B: Second Stage Variables	Mean	Standard Deviation	Minimum	25th Percentile	Median	75th Percentile	Maximum
CALLVOL(30-day)	-0.880	0.461	-1.907	-1.194	-0.885	-0.579	0.259
CALLVOL(60-day)	-0.880	0.454	-1.908	-1.183	-0.884	-0.584	0.244
CALLVOL(91-day)	-0.877	0.445	-1.898	-1.171	-0.876	-0.587	0.224
PUTVOL (30-day)	-0.865	0.459	-1.876	-1.180	-0.872	-0.567	0.293
PUTVOL (60-day)	-0.865	0.454	-1.883	-1.169	-0.871	-0.570	0.291
PUTVOL (91-day)	-0.861	0.446	-1.873	-1.157	-0.864	-0.573	0.277
CW (30-day)	-0.014	0.051	-0.244	-0.026	-0.010	0.003	0.166
CW (60-day)	-0.015	0.046	-0.243	-0.024	-0.010	0.001	0.141
CW (91-day)	-0.016	0.047	-0.263	-0.023	-0.010	0.000	0.126
XZZ (30-day)	0.118	0.114	-0.122	0.057	0.096	0.149	0.612
XZZ (60-day)	0.098	0.086	-0.103	0.054	0.084	0.123	0.478
XZZ (91-day)	0.087	0.071	-0.093	0.050	0.078	0.111	0.396
GS (30-day)	-0.014	0.439	-1.125	-0.268	-0.003	0.239	1.246
GS (60-day)	-0.014	0.428	-1.096	-0.256	0.000	0.232	1.214
GS (91-day)	-0.012	0.416	-1.067	-0.246	0.002	0.231	1.170
GS (Put, 30-day)	0.000	0.439	-1.110	-0.254	0.012	0.250	1.266
GS (Put, 60-day)	0.001	0.429	-1.083	-0.241	0.014	0.244	1.239
GS (Put, 91-day)	0.005	0.418	-1.055	-0.230	0.018	0.244	1.196
I_ABTONE	0.000	0.353	-0.832	-0.248	0.003	0.257	0.760
M_ABTONE	-0.001	0.334	-0.739	-0.228	-0.018	0.212	0.954
A_ABTONE	0.000	0.385	-0.878	-0.261	-0.014	0.250	1.003
ICOUNT	7.936	0.456	6.382	7.687	7.981	8.241	8.913
MCOUNT	7.763	0.661	4.917	7.489	7.894	8.200	8.787
ACOUNT	7.041	0.526	5.187	6.771	7.125	7.405	7.977
MOM	0.020	0.196	-0.505	-0.090	0.021	0.125	0.652
EXPER	1.542	0.960	0.000	0.693	1.609	2.303	3.258
CALLAN	2.443	1.695	0.000	0.000	3.296	3.761	4.443
ANALYST	1.665	0.846	0.000	1.099	1.792	2.303	3.296
IO	0.555	0.131	0.146	0.486	0.582	0.646	0.796
SUE	0.001	0.009	-0.056	0.000	0.001	0.002	0.036
SIZE	14.425	1.551	11.393	13.290	14.251	15.395	18.650
MB	2.951	3.721	-12.886	1.393	2.188	3.637	21.286

Table 4: Correlations

This table provides unconditional correlation coefficients for the variables used in the first stage regressions for abnormal tone calculation (Panel A) and for the variables in the second stage analysis (Panel B). Individual variable definitions are outlined in the Appendix.

Panel A: First Stage Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) ITONE	1																					
(2) MTONE	0.373	1																				
(3) ATONE	0.235	0.290	1																			
(4) ROA	0.026	-0.003	-0.009	1																		
(5) MOM	0.076	0.075	0.134	0.002	1																	
(6) SIZE	0.047	-0.017	-0.074	0.250	-0.031	1																
(7) BM	-0.007	-0.016	-0.006	0.273	0.017	-0.014	1															
(8) STD_RET	-0.106	-0.045	-0.019	-0.008	0.033	-0.178	-0.008	1														
(9) STD_EARN	-0.019	0.018	0.049	-0.223	0.069	-0.480	0.017	0.096	1													
(10) AGE	-0.013	-0.016	-0.009	0.003	0.009	0.051	-0.005	0.098	0.054	1												
(11) BUSSEG	-0.077	-0.074	-0.047	0.119	-0.016	0.400	-0.002	0.040	-0.295	-0.037	1											
(12) GEOSEG	-0.030	-0.058	-0.065	0.097	0.000	0.228	-0.012	0.081	-0.179	0.057	0.306	1										
(13) LOSS	0.080	0.042	0.023	0.099	0.012	0.165	-0.013	-0.043	-0.047	0.016	0.116	0.125	1									
(14) DEARN	-0.048	0.020	0.006	-0.540	0.028	-0.353	0.000	0.026	0.329	0.032	-0.192	-0.147	-0.101	1								
(15) SUE	0.018	0.001	0.001	0.028	-0.040	0.015	-0.001	-0.048	-0.003	-0.043	0.014	0.003	0.004	-0.043	1							
(16) AF	0.023	0.019	0.013	0.246	-0.014	0.014	0.251	-0.031	-0.003	-0.007	0.011	-0.002	-0.002	-0.123	0.019	1						
(17) SGROWTH	-0.049	-0.047	-0.049	0.308	-0.038	0.210	-0.019	0.086	-0.205	0.017	0.119	0.129	0.065	-0.334	-0.017	-0.048	1					
(18) WCAPRAT	0.065	0.053	0.045	-0.095	-0.002	-0.378	0.019	-0.107	0.240	-0.106	-0.255	-0.228	0.103	0.236	-0.001	0.052	-0.160	1				
(19) RERAT	-0.026	-0.025	-0.039	0.452	-0.033	0.290	-0.034	0.197	-0.300	-0.049	0.202	0.166	0.093	-0.392	-0.003	-0.015	0.353	-0.218	1			
(20) EBITRAT	0.024	0.002	-0.001	0.926	0.006	0.212	0.185	-0.055	-0.178	-0.008	0.095	0.069	0.056	-0.470	0.032	0.226	0.216	-0.075	0.358	1		
(21) DEBTRAT	-0.089	-0.045	-0.017	-0.054	0.015	-0.062	-0.007	0.258	0.111	0.134	0.022	0.056	-0.116	0.079	-0.034	-0.028	0.004	-0.297	0.024	-0.045	1	
(22) SALESRAT	0.040	0.025	0.018	0.205	-0.011	-0.051	0.072	0.015	-0.010	-0.033	-0.056	0.040	-0.031	-0.213	0.014	0.048	0.093	-0.043	0.155	0.161	-0.092	1

Table 4: (Continued)

Panel B: Second Stage Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1) CALLVOL(30-day)	1																		
(2) PUTVOL (30-day)	0.989	1																	
(3) CW (30-day)	0.154	0.017	1																
(4) XZZ (30-day)	-0.514	-0.449	-0.488	1															
(5) GS (30-day)	0.357	0.349	0.075	-0.163	1														
(6) I_ABTONE	-0.130	-0.131	-0.009	0.044	-0.026	1													
(7) M_ABTONE	-0.112	-0.112	-0.020	0.062	-0.024	0.298	1												
(8) A_ABTONE	-0.057	-0.058	-0.005	0.023	-0.043	0.241	0.267	1											
(9) SUE	-0.030	-0.029	-0.012	-0.005	-0.047	0.030	0.019	0.033	1										
(10) SIZE	-0.578	-0.578	-0.042	0.165	0.057	0.112	0.159	0.078	0.016	1									
(11) MB	0.010	0.015	-0.039	-0.028	0.031	0.069	-0.012	0.057	0.015	0.091	1								
(12) MOM	-0.140	-0.136	-0.041	0.055	-0.247	-0.005	0.001	0.008	0.001	-0.022	-0.023	1							
(13) EXPER	0.090	0.088	0.028	-0.043	-0.023	-0.031	-0.014	0.006	0.037	-0.027	-0.037	0.036	1						
(14) CALLAN	-0.145	-0.144	-0.026	0.020	-0.015	0.021	-0.090	-0.084	0.016	0.214	-0.011	-0.004	-0.004	1					
(15) ANALYST	-0.172	-0.174	0.006	-0.022	-0.034	0.011	0.085	0.073	0.005	0.473	0.032	0.005	0.063	0.207	1				
(16) IO	-0.149	-0.155	0.021	-0.005	0.057	0.106	0.026	-0.006	-0.006	0.193	-0.045	-0.036	0.049	0.182	0.231	1			
(17) ICOUNT	-0.043	-0.045	0.010	-0.032	0.024	0.057	0.096	0.046	0.016	0.184	0.018	-0.033	0.048	-0.079	0.108	0.119	1		
(18) MCOUNT	-0.066	-0.067	0.002	-0.036	-0.040	0.106	-0.052	-0.008	0.022	0.189	0.032	-0.030	0.036	0.544	0.193	0.210	0.163	1	
(19) ACOUNT	-0.147	-0.149	-0.001	-0.010	-0.036	0.084	-0.053	-0.062	0.018	0.297	0.008	-0.017	0.014	0.885	0.275	0.238	-0.012	0.631	1

Table 5: Abnormal Tone Construction

This table shows the first stage regression results used to obtain measures of abnormal conference call tone. Tone measures for the various parts of the call (Introduction, Manager Q&A, and Analyst Q&A) are individually regressed on controls for firm fundamentals, characteristics, and analyst estimates. Firm, year-quarter, and industry fixed effects (indicator variables) are included. Individual variable definitions are outlined in the Appendix. ***, **, * denotes statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. Robust t-statistics are presented in parentheses.

	ITONE	MTONE	ATONE
ROA	-0.122	-0.356*	-0.586***
	(-0.722)	(-1.816)	(-2.723)
MOM	0.112***	0.105***	0.174***
	(7.663)	(6.159)	(9.287)
SIZE	-0.0207**	-0.0400***	-0.0575***
	(-2.023)	(-3.362)	(-4.406)
BM	-0.00886	-0.0215	-0.0308
	(-0.600)	(-1.253)	(-1.640)
STD_RET	0.0127	-0.0331	-0.0625**
	(0.610)	(-1.367)	(-2.356)
STD_EARN	0.0152**	0.0050	0.0045
	(2.111)	(0.595)	(0.489)
AGE	-0.101***	-0.0289	0.0287
	(-2.842)	(-0.703)	(0.637)
BUSSEG	-0.0031	-0.0048	0.0006
	(-0.180)	(-0.238)	(0.0270)
GEOSEG	0.0186	0.0156	0.0312
	(1.013)	(0.734)	(1.334)
LOSS	-0.0227**	0.00945	-0.0240*
	(-2.189)	(0.785)	(-1.820)
ΔEARN	0.00529**	0.000705	0.00316
	(2.208)	(0.253)	(1.035)
SUE	0.0183	0.230	0.0746
	(0.126)	(1.370)	(0.405)
AF	-0.0488	-0.0991**	-0.0457
	(-1.346)	(-2.356)	(-0.989)
SGROWTH	-0.0003**	-0.0003**	0.0000
	(-2.297)	(-2.099)	(0.158)
WCAPRAT	0.0634*	0.00170	0.0230
	(1.822)	(0.0422)	(0.518)
RERAT	-0.00184	0.00971	0.00131
	(-0.356)	(1.614)	(0.199)
EBITRAT	0.0744	0.206*	0.334***
	(0.796)	(1.899)	(2.805)
DEBTRAT	8.110	5.764	8.342
	(0.915)	(0.560)	(0.739)
SALESRAT	0.228***	0.230***	0.0423
	(4.230)	(3.669)	(0.614)

Constant	1.611***	1.295**	1.322*
	(2.976)	(2.061)	(1.918)
Obs.	9044	9044	9044
R-squared	0.532	0.350	0.259

Table 6: Implied Volatility Measures Sorted by Abnormal Tone

This table contains tabulations of the natural log of the thirty-day measures of implied volatility levels and spreads when sorted into quartiles by abnormal tone measures for the various parts of the call (Introduction, Manager Q&A, and Analyst Q&A). The full sample is included in Panel A. Panel B contains observations for which unexpected earnings is negative. Positive unexpected earnings observations are in Panel C. Individual variable definitions are outlined in the Appendix. ***, **, * denotes statistically significant differences between the high and low quartiles at the 0.01, 0.05, and 0.10 levels, respectively. Robust t-statistics are presented in parentheses.

Panel A: Full Sample

I_ABTONE	30d CALLVOL	30d PUTVOL	30d GS	30d CW	30d XZZ
1 (L)	-0.839	-0.825	0.013	-0.013	0.109
2	-0.869	-0.857	0.013	-0.013	0.113
3	-0.905	-0.894	-0.008	-0.010	0.113
4 (H)	-0.969	-0.955	-0.023	-0.014	0.122
H-L	-0.130***	-0.130***	-0.036***	-0.001	0.013***
(t-stat)	(-9.92)	(-10.02)	(-3.09)	(-0.37)	(3.88)
M_ABTONE	30d CALLVOL	30d PUTVOL	30d GS	30d CW	30d XZZ
1 (L)	-0.824	-0.811	0.017	-0.013	0.107
2	-0.894	-0.882	-0.002	-0.012	0.115
3	-0.912	-0.900	-0.007	-0.011	0.111
4 (H)	-0.952	-0.938	-0.013	-0.014	0.124
H-L	-0.128***	-0.127***	-0.030***	-0.002	0.017***
(t-stat)	(-9.58)	(-9.60)	(-2.60)	(-1.03)	(4.82)
A_ABTONE	30d CALLVOL	30d PUTVOL	30d GS	30d CW	30d XZZ
1 (L)	-0.857	-0.844	0.026	-0.013	0.113
2	-0.889	-0.876	0.009	-0.013	0.110
3	-0.910	-0.898	-0.005	-0.012	0.115
4 (H)	-0.926	-0.913	-0.034	-0.013	0.118
H-L	-0.069***	-0.069***	-0.060***	0.000	0.005
(t-stat)	(-5.22)	(-5.05)	(-5.15)	(0.14)	(1.54)

Panel B: Negative SUE Firms

I_ABTONE	30d CALLVOL	30d PUTVOL	30d GS	30d CW	30d XZZ
1 (L)	-0.791	-0.776	0.043	-0.014	0.107
2	-0.818	-0.807	0.025	-0.010	0.109
3	-0.839	-0.828	0.034	-0.010	0.108
4 (H)	-0.919	-0.905	0.004	-0.015	0.124
H-L	-0.128***	-0.129***	-0.039**	-0.002	0.018***
(t-stat)	(-5.73)	(-5.80)	(-1.97)	(-0.56)	(3.00)
M_ABTONE	30d CALLVOL	30d PUTVOL	30d GS	30d CW	30d XZZ
1 (L)	-0.787	-0.774	0.031	-0.012	0.104
2	-0.834	-0.826	0.038	-0.009	0.112
3	-0.836	-0.822	0.039	-0.012	0.109
4 (H)	-0.898	-0.882	0.002	-0.015	0.122
H-L	-0.112***	-0.107***	-0.029	-0.002	0.018***
(t-stat)	(-4.93)	(-4.81)	(-1.53)	(-0.85)	(3.08)
A_ABTONE	30d CALLVOL	30d PUTVOL	30d GS	30d CW	30d XZZ
1 (L)	-0.782	-0.770	0.059	-0.011	0.105
2	-0.823	-0.808	0.040	-0.013	0.107
3	-0.879	-0.866	0.017	-0.013	0.119
4 (H)	-0.877	-0.865	-0.013	-0.011	0.116
H-L	-0.095***	-0.095***	-0.072***	0.000	0.011*
(t-stat)	(-4.20)	(-4.24)	(-3.68)	(-0.04)	(1.85)

Table 6: (Continued)

Panel C: Positive SUE Firms

I_ABTONE	30d CALLVOL	30d PUTVOL	30d GS	30d CW	30d XZZ
1 (L)	-0.871	-0.858	-0.007	-0.013	0.110
2	-0.901	-0.887	0.006	-0.014	0.115
3	-0.941	-0.931	-0.031	-0.011	0.116
4 (H)	-0.990	-0.977	-0.035	-0.013	0.120
H-L	-0.119***	-0.119***	-0.028*	0.000	0.011**
(t-stat)	(-7.34)	(-7.39)	(-1.89)	(-0.10)	(2.56)
M_ABTONE	30d CALLVOL	30d PUTVOL	30d GS	30d CW	30d XZZ
1 (L)	-0.848	-0.835	0.008	-0.013	0.109
2	-0.932	-0.918	-0.027	-0.014	0.117
3	-0.949	-0.939	-0.030	-0.011	0.111
4 (H)	-0.979	-0.966	-0.021	-0.014	0.125
H-L	-0.131***	-0.132***	-0.029**	-0.001	0.016***
(t-stat)	(-7.98)	(-8.09)	(-1.97)	(-0.63)	(3.62)
A_ABTONE	30d CALLVOL	30d PUTVOL	30d GS	30d CW	30d XZZ
1 (L)	-0.907	-0.893	0.003	-0.014	0.118
2	-0.928	-0.917	-0.009	-0.012	0.112
3	-0.926	-0.915	-0.017	-0.012	0.114
4 (H)	-0.950	-0.936	-0.045	-0.013	0.119
H-L	-0.043***	-0.043***	-0.048**	0.001	0.001
(t-stat)	(-2.63)	(-2.66)	(-3.30)	(0.38)	(0.25)

Table 7: Call and Put Option Implied Volatilities

This table presents results from regressing measures of call (Panel A) and put (Panel B) implied volatility derived from options with 30, 60, and 91 day maturities on abnormal conference call tones for the various parts of the call (Introduction, Manager Q&A, and Analyst Q&A) and controls. Columns (1) – (3) contain the full sample, columns (4) – (6) include only those observations for which the earnings either equaled or did not meet analyst expectations, and columns (7) – (9) include only those observations for which earnings exceeded analyst forecasts. Year-quarter and industry fixed effects (indicator variables) are included. Standard errors are clustered by firm and industry following Peterson (2009). Individual variable definitions are outlined in the Appendix. ***, **, * denotes statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. Robust t-statistics are presented in parentheses.

Panel A	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	30d CALLVOL	60d CALLVOL	91d CALLVOL	30d CALLVOL, SUE<=0	60d CALLVOL, SUE<=0	91d CALLVOL, SUE<=0	30d CALLVOL, SUE>0	60d CALLVOL, SUE>0	91d CALLVOL, SUE>0
I_ABTONE	-0.0515***	-0.0533***	-0.0526***	-0.0513**	-0.0496**	-0.0454**	-0.0498***	-0.0530***	-0.0539***
	(-3.528)	(-3.546)	(-3.448)	(-2.548)	(-2.470)	(-2.251)	(-3.079)	(-3.190)	(-3.180)
M_ABTONE	-0.0130	-0.0138	-0.0139	-0.0157	-0.0146	-0.0160	-0.0119	-0.0145	-0.0145
	(-0.971)	(-1.042)	(-1.037)	(-0.707)	(-0.655)	(-0.743)	(-0.683)	(-0.855)	(-0.832)
A_ABTONE	-0.0243*	-0.0179	-0.0145	-0.0255**	-0.0178*	-0.0156	-0.0193	-0.0138	-0.00981
	(-1.741)	(-1.269)	(-1.066)	(-2.541)	(-1.673)	(-1.535)	(-1.130)	(-0.809)	(-0.605)
SUE	-0.731	-0.735	-0.632	-3.541***	-3.778***	-3.852***	6.440***	6.646***	6.868***
	(-1.388)	(-1.372)	(-1.188)	(-4.396)	(-4.736)	(-4.819)	(5.088)	(5.204)	(5.277)
SIZE	-0.161***	-0.157***	-0.153***	-0.160***	-0.156***	-0.151***	-0.151***	-0.146***	-0.142***
	(-21.32)	(-20.48)	(-19.60)	(-17.08)	(-16.50)	(-15.84)	(-19.22)	(-17.94)	(-17.00)
MB	0.00286**	0.00298**	0.00307**	0.00236	0.00261	0.00259	0.00429**	0.00433**	0.00460**
	(2.109)	(2.117)	(2.084)	(1.396)	(1.547)	(1.460)	(2.578)	(2.450)	(2.546)
MOM	-0.134**	-0.133**	-0.127**	-0.0904**	-0.0902**	-0.0849**	-0.179***	-0.178***	-0.171***
	(-2.396)	(-2.434)	(-2.508)	(-2.033)	(-2.087)	(-2.163)	(-2.587)	(-2.655)	(-2.739)
EXPER	-0.00770*	-0.00850*	-0.00889**	-0.0111	-0.0114	-0.0130*	-0.00410	-0.00517	-0.00485
	(-1.678)	(-1.939)	(-2.108)	(-1.623)	(-1.601)	(-1.789)	(-0.822)	(-1.085)	(-1.079)
CALLAN	-0.0715***	-0.0771***	-0.0833***	-0.0807***	-0.0870***	-0.0965***	-0.0589***	-0.0628***	-0.0671***
	(-3.921)	(-4.192)	(-4.603)	(-2.728)	(-2.998)	(-3.344)	(-3.129)	(-3.373)	(-3.668)
ANALYST	0.0399***	0.0418***	0.0438***	0.0391***	0.0421***	0.0439***	0.0400***	0.0412***	0.0434***
	(5.097)	(5.010)	(5.178)	(4.929)	(5.316)	(5.563)	(4.221)	(4.086)	(4.302)
IO	-0.393***	-0.392***	-0.388***	-0.401***	-0.402***	-0.396***	-0.311***	-0.307***	-0.302***
	(-6.048)	(-5.797)	(-5.672)	(-5.526)	(-5.379)	(-5.361)	(-4.467)	(-4.419)	(-4.381)
ICOUNT	0.0330***	0.0323***	0.0311**	0.0567***	0.0534***	0.0504***	0.0160	0.0169	0.0166
	(2.954)	(2.714)	(2.478)	(4.478)	(4.371)	(4.107)	(1.027)	(1.051)	(1.033)
MCOUNT	0.00639	0.00979	0.0102	0.0136	0.0174	0.0177	0.00314	0.00628	0.00693
	(0.646)	(0.831)	(0.852)	(1.018)	(1.159)	(1.199)	(0.319)	(0.534)	(0.576)
ACOUNT	0.0581***	0.0627***	0.0680***	0.0614***	0.0665***	0.0727***	0.0481**	0.0513***	0.0558***
	(4.771)	(5.661)	(6.127)	(2.789)	(3.105)	(3.597)	(2.410)	(2.593)	(2.795)
Constant	0.998***	0.751***	0.616**	0.723***	0.641***	0.565***	0.983***	0.724**	0.577*
	(4.417)	(3.143)	(2.475)	(4.807)	(4.600)	(4.343)	(3.319)	(2.335)	(1.841)
Obs.	8995	8995	8987	3244	3244	3242	5751	5751	5745
R-squared	0.711	0.712	0.713	0.724	0.728	0.728	0.714	0.715	0.717

Table 7: (Continued)

Panel B	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	30d PUTVOL	60d PUTVOL	91d PUTVOL	30d PUTVOL, SUE<=0	60d PUTVOL, SUE<=0	91d PUTVOL, SUE<=0	30d PUTVOL, SUE>0	60d PUTVOL, SUE>0	91d PUTVOL, SUE>0
I_ABTONE	-0.0504***	-0.0524***	-0.0518***	-0.0471**	-0.0460**	-0.0440**	-0.0501***	-0.0533***	-0.0531***
	(-3.531)	(-3.611)	(-3.491)	(-2.447)	(-2.384)	(-2.303)	(-3.235)	(-3.431)	(-3.302)
M_ABTONE	-0.0122	-0.0140	-0.0139	-0.0105	-0.0107	-0.0133	-0.0141	-0.0176	-0.0164
	(-0.905)	(-1.109)	(-1.079)	(-0.520)	(-0.510)	(-0.645)	(-0.834)	(-1.094)	(-0.971)
A_ABTONE	-0.0250*	-0.0205	-0.0188	-0.0334***	-0.0280***	-0.0249**	-0.0159	-0.0120	-0.0113
	(-1.861)	(-1.515)	(-1.434)	(-3.449)	(-2.861)	(-2.574)	(-0.914)	(-0.709)	(-0.702)
SUE	-0.712	-0.708	-0.690	-3.359***	-3.616***	-3.660***	6.181***	6.433***	6.507***
	(-1.374)	(-1.317)	(-1.254)	(-4.342)	(-4.559)	(-4.599)	(4.460)	(4.569)	(4.586)
SIZE	-0.161***	-0.157***	-0.153***	-0.160***	-0.156***	-0.152***	-0.151***	-0.146***	-0.142***
	(-21.38)	(-20.61)	(-19.87)	(-16.95)	(-16.68)	(-16.33)	(-18.72)	(-17.46)	(-16.65)
MB	0.00327**	0.00340**	0.00363**	0.00304**	0.00332**	0.00346**	0.00455**	0.00456**	0.00490**
	(2.368)	(2.373)	(2.476)	(1.979)	(2.153)	(2.253)	(2.511)	(2.382)	(2.499)
MOM	-0.121**	-0.123**	-0.119**	-0.0744*	-0.0787*	-0.0766*	-0.167**	-0.168**	-0.162***
	(-2.160)	(-2.257)	(-2.362)	(-1.706)	(-1.837)	(-1.959)	(-2.407)	(-2.504)	(-2.605)
EXPER	-0.00726	-0.00875**	-0.00970**	-0.0119*	-0.0124*	-0.0135**	-0.00278	-0.00495	-0.00581
	(-1.643)	(-2.051)	(-2.320)	(-1.868)	(-1.900)	(-1.971)	(-0.544)	(-1.015)	(-1.241)
CALLAN	-0.0659***	-0.0704***	-0.0759***	-0.0811***	-0.0833***	-0.0903***	-0.0505***	-0.0547***	-0.0588***
	(-4.037)	(-4.101)	(-4.271)	(-2.885)	(-2.971)	(-3.153)	(-2.798)	(-2.992)	(-3.282)
ANALYST	0.0396***	0.0411***	0.0435***	0.0386***	0.0413***	0.0437***	0.0400***	0.0406***	0.0431***
	(5.273)	(5.042)	(5.289)	(4.536)	(4.932)	(5.236)	(4.400)	(4.091)	(4.382)
IO	-0.405***	-0.397***	-0.395***	-0.416***	-0.405***	-0.404***	-0.323***	-0.314***	-0.310***
	(-6.680)	(-6.213)	(-6.165)	(-5.900)	(-5.774)	(-5.985)	(-4.943)	(-4.677)	(-4.560)
ICOUNT	0.0298**	0.0311**	0.0301**	0.0485***	0.0483***	0.0471***	0.0156	0.0176	0.0169
	(2.554)	(2.456)	(2.264)	(3.711)	(3.758)	(3.785)	(0.966)	(1.051)	(1.008)
MCOUNT	0.00976	0.0120	0.0137	0.0176	0.0187	0.0196	0.00616	0.00930	0.0115
	(0.932)	(1.001)	(1.094)	(1.383)	(1.260)	(1.296)	(0.554)	(0.738)	(0.876)
ACOUNT	0.0517***	0.0579***	0.0630***	0.0645***	0.0672***	0.0727***	0.0366*	0.0430**	0.0475**
	(4.328)	(4.916)	(5.057)	(2.950)	(3.205)	(3.513)	(1.850)	(2.186)	(2.462)
Constant	0.986***	0.682***	0.566**	0.722***	0.649***	0.584***	0.981***	0.659**	0.534*
	(4.498)	(2.887)	(2.258)	(5.643)	(5.421)	(4.735)	(3.396)	(2.145)	(1.703)
Obs.	8995	8995	8987	3244	3244	3242	5751	5751	5745
R-squared	0.708	0.710	0.711	0.719	0.725	0.726	0.712	0.714	0.715

Table 8: Call and Put Option Implied Volatilities, GS

This table presents results from regressing the Goyal and Saretto (2009) call (Panel A) and put (Panel B) option implied volatility spreads from options with 30, 60, and 91 day maturities on abnormal conference call tones for the various parts of the call (Introduction, Manager Q&A, and Analyst Q&A) and controls. Columns (1) – (3) contain the full sample, columns (4) – (6) include only those observations with negative earnings surprise, and columns (7) – (9) include only those observations with positive earnings surprise. Year-quarter and industry fixed effects (indicator variables) are included. Standard errors are clustered by firm and industry following Peterson (2009). Individual variable definitions are outlined in the Appendix. ***, **, * denotes statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. Robust t-statistics are presented in parentheses.

Panel A	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	30d Call GS	60d Call GS	91d Call GS	30d Call GS, SUE<=0	60d Call GS, SUE<=0	91d Call GS, SUE<=0	30d Call GS, SUE>0	60d Call GS, SUE>0	91d Call GS, SUE>0
I_ABTONE	-0.00440	-0.00596	-0.00487	-0.0204	-0.0179	-0.0138	0.00183	-0.00142	-0.00158
	(-0.348)	(-0.478)	(-0.403)	(-1.214)	(-1.023)	(-0.799)	(0.138)	(-0.111)	(-0.125)
M_ABTONE	-0.00224	-0.00318	-0.00329	-0.00828	-0.00753	-0.00839	0.00408	0.00146	0.00119
	(-0.214)	(-0.362)	(-0.395)	(-0.362)	(-0.365)	(-0.457)	(0.268)	(0.101)	(0.0865)
A_ABTONE	-0.0597***	-0.0532***	-0.0496***	-0.0666***	-0.0582***	-0.0554***	-0.0520***	-0.0468***	-0.0428***
	(-6.414)	(-6.355)	(-6.505)	(-6.421)	(-5.917)	(-5.847)	(-4.616)	(-4.494)	(-4.623)
SUE	-1.609**	-1.622**	-1.530**	-0.646	-0.877	-0.938	-1.062	-0.864	-0.670
	(-2.440)	(-2.493)	(-2.432)	(-0.830)	(-1.181)	(-1.264)	(-0.742)	(-0.613)	(-0.486)
SIZE	-0.000295	0.00381	0.00822*	-0.00132	0.00257	0.00727	-3.07e-05	0.00464	0.00905*
	(-0.0649)	(0.878)	(1.922)	(-0.218)	(0.472)	(1.405)	(-0.00584)	(0.897)	(1.757)
MB	-0.00294***	-0.00281***	-0.00269***	-0.00507***	-0.00483***	-0.00483**	-0.00142	-0.00137	-0.00107
	(-3.125)	(-3.037)	(-2.819)	(-2.770)	(-2.616)	(-2.486)	(-1.125)	(-1.230)	(-1.013)
MOM	-0.166***	-0.165***	-0.158***	-0.161***	-0.161***	-0.157***	-0.174***	-0.173***	-0.165***
	(-2.833)	(-2.906)	(-3.074)	(-2.947)	(-3.012)	(-3.249)	(-2.605)	(-2.698)	(-2.810)
EXPER	-0.00462	-0.00526	-0.00564	-0.00269	-0.00273	-0.00403	-0.00502	-0.00600	-0.00585
	(-0.810)	(-0.966)	(-1.090)	(-0.513)	(-0.547)	(-0.787)	(-0.769)	(-0.932)	(-0.976)
CALLAN	0.0293**	0.0233**	0.0174	0.0215*	0.0150	0.00550	0.0289*	0.0244	0.0207
	(2.347)	(2.035)	(1.619)	(1.700)	(1.093)	(0.387)	(1.754)	(1.601)	(1.500)
ANALYST	-0.00741	-0.00538	-0.00337	-0.0109	-0.00768	-0.00595	-0.00550	-0.00415	-0.00187
	(-1.358)	(-1.124)	(-0.761)	(-1.305)	(-1.060)	(-0.856)	(-0.930)	(-0.745)	(-0.355)
IO	0.00515	0.00680	0.0109	0.00951	0.0108	0.0151	0.00358	0.00789	0.0136
	(0.144)	(0.195)	(0.318)	(0.219)	(0.282)	(0.410)	(0.0828)	(0.180)	(0.308)
ICOUNT	0.00209	0.00135	8.02e-05	0.0162	0.0125	0.00974	-0.00533	-0.00433	-0.00487
	(0.276)	(0.179)	(0.0103)	(1.149)	(1.006)	(0.836)	(-0.474)	(-0.376)	(-0.424)
MCOUNT	-0.0102*	-0.00712	-0.00695	-0.0197*	-0.0165	-0.0163	-0.00709	-0.00414	-0.00382
	(-1.711)	(-1.355)	(-1.455)	(-1.840)	(-1.493)	(-1.539)	(-1.029)	(-0.649)	(-0.621)
ACOUNT	-0.0467**	-0.0418***	-0.0367**	-0.0219	-0.0166	-0.00993	-0.0545**	-0.0510**	-0.0470**
	(-2.500)	(-2.624)	(-2.570)	(-1.320)	(-1.127)	(-0.773)	(-2.377)	(-2.441)	(-2.465)
Constant	0.548***	0.300**	0.168	0.127	0.0492	-0.0289	0.630***	0.369**	0.227
	(4.166)	(2.260)	(1.248)	(0.824)	(0.381)	(-0.259)	(3.624)	(2.062)	(1.300)
Obs.	8995	8995	8987	3244	3244	3242	5751	5751	5745
R-squared	0.598	0.615	0.625	0.586	0.602	0.611	0.615	0.631	0.642

Table 8: (Continued)

Panel B	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	30d Put GS	60d Put GS	91d Put GS	30d Put GS, SUE<=0	60d Put GS, SUE<=0	91d Put GS, SUE<=0	30d Put GS, SUE>0	60d Put GS, SUE>0	91d Put GS, SUE>0
I_ABTONE	-0.00336	-0.00508	-0.00399	-0.0160	-0.0145	-0.0126	0.00133	-0.00167	-0.000716
	(-0.273)	(-0.422)	(-0.325)	(-0.990)	(-0.879)	(-0.721)	(0.111)	(-0.144)	(-0.0602)
M_ABTONE	-0.000981	-0.00277	-0.00273	-0.00240	-0.00289	-0.00536	0.00216	-0.00107	1.10e-05
	(-0.0977)	(-0.317)	(-0.306)	(-0.115)	(-0.150)	(-0.295)	(0.146)	(-0.0778)	(0.000816)
A_ABTONE	-0.0604***	-0.0561***	-0.0542***	-0.0742***	-0.0681***	-0.0645***	-0.0488***	-0.0456***	-0.0447***
	(-6.418)	(-6.618)	(-7.280)	(-7.635)	(-7.377)	(-6.866)	(-4.105)	(-4.223)	(-4.861)
SUE	-1.587***	-1.589***	-1.576***	-0.455	-0.698	-0.735	-1.312	-1.093	-1.051
	(-2.592)	(-2.652)	(-2.595)	(-0.604)	(-0.945)	(-0.971)	(-0.974)	(-0.836)	(-0.811)
SIZE	0.000251	0.00461	0.00836**	-0.00145	0.00280	0.00639	0.000313	0.00523	0.00906*
	(0.0556)	(1.100)	(2.050)	(-0.250)	(0.533)	(1.264)	(0.0617)	(1.056)	(1.849)
MB	-0.00246**	-0.00230**	-0.00210**	-0.00431***	-0.00405**	-0.00395**	-0.00110	-0.00105	-0.000716
	(-2.552)	(-2.470)	(-2.178)	(-2.608)	(-2.468)	(-2.328)	(-0.874)	(-0.936)	(-0.691)
MOM	-0.153***	-0.155***	-0.150***	-0.146***	-0.150***	-0.148***	-0.162**	-0.162**	-0.156***
	(-2.644)	(-2.757)	(-2.941)	(-2.809)	(-2.907)	(-3.176)	(-2.412)	(-2.525)	(-2.647)
EXPER	-0.00400	-0.00529	-0.00628	-0.00307	-0.00329	-0.00421	-0.00365	-0.00570	-0.00673
	(-0.757)	(-1.012)	(-1.246)	(-0.577)	(-0.643)	(-0.790)	(-0.580)	(-0.910)	(-1.129)
CALLAN	0.0348***	0.0300***	0.0248**	0.0208	0.0183	0.0108	0.0373**	0.0331**	0.0297**
	(3.161)	(3.029)	(2.510)	(1.460)	(1.229)	(0.693)	(2.383)	(2.373)	(2.212)
ANALYST	-0.00768	-0.00604	-0.00362	-0.0115	-0.00848	-0.00592	-0.00546	-0.00475	-0.00232
	(-1.292)	(-1.143)	(-0.759)	(-1.310)	(-1.065)	(-0.806)	(-0.853)	(-0.797)	(-0.425)
IO	-0.00461	0.00288	0.00473	-0.00370	0.00910	0.00988	-0.00650	0.00116	0.00412
	(-0.132)	(0.0875)	(0.144)	(-0.0842)	(0.247)	(0.277)	(-0.154)	(0.0278)	(0.0969)
ICOUNT	-0.000647	0.000319	-0.000835	0.00851	0.00798	0.00670	-0.00513	-0.00351	-0.00451
	(-0.0823)	(0.0395)	(-0.0988)	(0.598)	(0.621)	(0.560)	(-0.452)	(-0.293)	(-0.374)
MCOUNT	-0.00689	-0.00472	-0.00340	-0.0155	-0.0146	-0.0141	-0.00448	-0.00124	0.000667
	(-1.323)	(-0.936)	(-0.689)	(-1.628)	(-1.355)	(-1.312)	(-0.689)	(-0.185)	(0.0990)
ACOUNT	-0.0528***	-0.0464***	-0.0413***	-0.0186	-0.0156	-0.00940	-0.0657***	-0.0592***	-0.0551***
	(-3.122)	(-3.232)	(-2.987)	(-1.220)	(-1.171)	(-0.767)	(-3.012)	(-2.947)	(-2.806)
Constant	0.529***	0.225*	0.112	0.120	0.0468	-0.0159	0.623***	0.301*	0.182
	(4.277)	(1.782)	(0.845)	(0.792)	(0.385)	(-0.155)	(3.719)	(1.745)	(1.063)
Obs.	8995	8995	8987	3244	3244	3242	5751	5751	5745
R-squared	0.599	0.619	0.629	0.584	0.603	0.613	0.617	0.636	0.646

Table 9: Option Implied Volatilities, CW

This table presents results from regressing the Cremers and Weinbaum (2010) implied volatility spreads from options with 30, 60, and 91 day maturities on abnormal conference call tones for the various parts of the call (Introduction, Manager Q&A, and Analyst Q&A) and controls. Columns (1) – (3) contain the full sample, columns (4) – (6) include only those observations with negative earnings surprise, and columns (7) – (9) include only those observations with positive earnings surprise. Year-quarter and industry fixed effects (indicator variables) are included. Standard errors are clustered by firm and industry following Peterson (2009). Individual variable definitions are outlined in the Appendix. ***, **, * denotes statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. Robust t-statistics are presented in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	30d CW	60d CW	91d CW	30d CW, SUE<=0	60d CW, SUE<=0	91d CW, SUE<=0	30d CW, SUE>0	60d CW, SUE>0	91d CW, SUE>0
I_ABTONE	-0.000842	-0.000454	-0.000187	-0.00406	-0.00212	-0.000716	0.000612	0.000125	-0.000125
	(-0.545)	(-0.243)	(-0.0886)	(-1.455)	(-0.644)	(-0.207)	(0.361)	(0.0520)	(-0.0503)
M_ABTONE	-0.00261*	-0.00215*	-0.00212	-0.00418***	-0.00520***	-0.00336	-0.00137	-6.37e-05	-0.00134
	(-1.923)	(-1.685)	(-1.353)	(-11.87)	(-3.687)	(-1.454)	(-0.733)	(-0.0401)	(-1.213)
A_ABTONE	0.000467	0.00220	0.00360**	0.00529	0.00792***	0.00786***	-0.00209	-0.000973	0.00129
	(0.294)	(1.201)	(2.383)	(1.532)	(2.959)	(5.221)	(-0.806)	(-0.379)	(0.587)
SUE	-0.0326	-0.0513	0.0315	-0.112	-0.146	-0.178	0.246	0.178	0.291*
	(-0.370)	(-0.592)	(0.431)	(-0.900)	(-1.094)	(-1.401)	(1.213)	(0.947)	(1.846)
SIZE	4.55e-06	-0.000202	0.000252	0.000151	0.000128	0.00102	0.000413	4.13e-05	0.000385
	(0.00623)	(-0.264)	(0.350)	(0.133)	(0.115)	(0.881)	(0.505)	(0.0494)	(0.499)
MB	-0.000408**	-0.000421**	-0.000471**	-0.000660**	-0.000692***	-0.000714***	-0.000244	-0.000227	-0.000275
	(-2.379)	(-2.430)	(-2.170)	(-2.440)	(-3.037)	(-2.653)	(-0.829)	(-0.821)	(-0.828)
MOM	-0.0111***	-0.00974***	-0.00765**	-0.0146**	-0.0109*	-0.00884	-0.00910**	-0.00943***	-0.00709**
	(-2.731)	(-3.188)	(-2.511)	(-2.047)	(-1.740)	(-1.567)	(-2.169)	(-3.255)	(-2.511)
EXPER	-0.000345	6.19e-05	0.000548	0.000143	-7.85e-06	-0.000330	-0.000683	0.000137	0.00108
	(-0.560)	(0.107)	(0.790)	(0.118)	(-0.00733)	(-0.261)	(-0.791)	(0.209)	(1.641)
CALLAN	-0.00593	-0.00618**	-0.00635**	-0.000469	-0.00230	-0.00260	-0.00881**	-0.00841***	-0.00871***
	(-1.565)	(-1.995)	(-2.422)	(-0.114)	(-0.627)	(-0.655)	(-2.215)	(-2.643)	(-2.853)
ANALYST	0.000155	0.000570	-4.26e-05	0.00152	0.00177*	0.000731	-0.000658	-6.92e-06	-0.000424
	(0.154)	(0.583)	(-0.0463)	(1.368)	(1.747)	(0.628)	(-0.531)	(-0.00575)	(-0.363)
IO	0.00711	0.00460	0.00515	0.00680	-0.00191	0.000917	0.00974	0.00963	0.00967
	(0.732)	(0.486)	(0.496)	(0.502)	(-0.148)	(0.0721)	(0.935)	(0.970)	(0.922)
ICOUNT	0.00197	0.000238	0.000258	0.00520*	0.00224	0.00140	-0.000163	-0.00118	-0.000838
	(1.238)	(0.171)	(0.170)	(1.947)	(0.919)	(0.526)	(-0.0976)	(-0.852)	(-0.605)
MCOUNT	-0.00191	-0.00147	-0.00206	-0.00298	-0.000637	-0.000266	-0.00116	-0.00190	-0.00294*
	(-1.284)	(-1.052)	(-1.330)	(-0.904)	(-0.222)	(-0.0862)	(-0.732)	(-1.263)	(-1.716)
ACOUNT	0.00549	0.00480	0.00428	-0.00274	-0.00181	-0.00292	0.0105**	0.00893***	0.00879**
	(1.390)	(1.452)	(1.543)	(-0.463)	(-0.346)	(-0.488)	(2.516)	(2.597)	(2.574)
Constant	0.0135	0.0620***	0.0425***	0.0221	0.0108	-0.00694	-0.00829	0.0459***	0.0263*
	(0.863)	(4.489)	(3.659)	(0.740)	(0.503)	(-0.276)	(-0.402)	(2.712)	(1.784)
Obs.	8995	8995	8987	3244	3244	3242	5751	5751	5745
R-squared	0.053	0.058	0.055	0.072	0.077	0.070	0.065	0.066	0.065

Table 10: Option Implied Volatilities, XZZ

This table presents results from regressing the Xing, Zhang, and Zhao (2010) implied volatility spreads from options with 30, 60, and 91 day maturities on abnormal conference call tones for the various parts of the call (Introduction, Manager Q&A, and Analyst Q&A) and controls. Columns (1) – (3) contain the full sample, columns (4) – (6) include only those observations with negative earnings surprise, and columns (7) – (9) include only those observations with positive earnings surprise. Year-quarter and industry fixed effects (indicator variables) are included. Standard errors are clustered by firm and industry following Peterson (2009). Individual variable definitions are outlined in the Appendix. ***, **, * denotes statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. Robust t-statistics are presented in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	30d XZZ	60d XZZ	91d XZZ	30d XZZ, SUE<=0	60d XZZ, SUE<=0	91d XZZ, SUE<=0	30d XZZ, SUE>0	60d XZZ, SUE>0	91d XZZ, SUE>0
I_ABTONE	0.00954**	0.00580*	0.00463	0.00786	0.00559	0.00607	0.0107*	0.00660	0.00441
	(2.298)	(1.778)	(1.278)	(1.042)	(1.150)	(1.475)	(1.952)	(1.443)	(0.966)
M_ABTONE	0.00823**	0.00590**	0.00250	0.0129	0.00877	0.00347	0.00547*	0.00420***	0.00201
	(2.305)	(2.135)	(0.821)	(1.639)	(1.471)	(0.646)	(1.672)	(3.636)	(0.885)
A_ABTONE	0.00423	0.00136	-0.00165	0.00333	-0.00390	-0.00611***	0.00393	0.00404	0.000837
	(1.452)	(0.571)	(-0.641)	(0.945)	(-1.448)	(-2.824)	(0.755)	(1.004)	(0.243)
SUE	-0.193	-0.220*	-0.246***	0.501*	0.167	0.0698	-1.752***	-1.073***	-0.839***
	(-1.352)	(-1.739)	(-2.623)	(1.902)	(0.736)	(0.322)	(-4.735)	(-3.930)	(-3.519)
SIZE	0.0128***	0.00976***	0.00890***	0.0100***	0.00800***	0.00766***	0.0116***	0.00908***	0.00836***
	(6.603)	(6.249)	(6.952)	(3.261)	(3.638)	(3.938)	(5.781)	(5.984)	(6.390)
MB	-6.17e-05	-7.57e-05	4.89e-05	0.000500	0.000494	0.000566	-0.000676	-0.000586	-0.000432
	(-0.178)	(-0.235)	(0.164)	(0.806)	(0.937)	(1.245)	(-1.546)	(-1.596)	(-1.213)
MOM	0.0121**	0.0103**	0.0111***	0.00157	0.00257	0.00395	0.0206***	0.0165***	0.0167***
	(2.323)	(2.350)	(2.669)	(0.186)	(0.316)	(0.560)	(2.869)	(2.995)	(3.421)
EXPER	-0.000384	-7.03e-05	-0.000295	-0.00110	-0.00101	0.000254	7.77e-05	0.000460	-0.000669
	(-0.274)	(-0.0775)	(-0.513)	(-0.394)	(-0.483)	(0.175)	(0.0520)	(0.503)	(-1.446)
CALLAN	0.0182***	0.0156***	0.0147***	0.0137*	0.0119*	0.0145***	0.0179**	0.0156**	0.0137***
	(2.792)	(2.956)	(3.343)	(1.653)	(1.925)	(2.659)	(2.531)	(2.570)	(2.912)
ANALYST	-0.00962***	-0.00576**	-0.00338*	-0.00790***	-0.00607**	-0.00484**	-0.0103***	-0.00540*	-0.00234
	(-3.019)	(-2.302)	(-1.899)	(-2.688)	(-2.229)	(-2.361)	(-2.592)	(-1.961)	(-1.180)
IO	0.0461**	0.0240	0.0175	0.0433	0.0281	0.0206	0.0323	0.0136	0.00973
	(2.106)	(1.427)	(1.180)	(1.507)	(1.149)	(0.987)	(1.579)	(0.838)	(0.721)
ICOUNT	-0.0150***	-0.00686**	-0.00215	-0.0190***	-0.0105**	-0.00395*	-0.0117**	-0.00381	-0.000204
	(-3.370)	(-2.413)	(-1.132)	(-3.000)	(-2.577)	(-1.737)	(-2.188)	(-1.202)	(-0.0976)
MCOUNT	0.00278	0.00263	0.00345**	0.00470	0.00370	0.00400	0.000829	0.00158	0.00275
	(0.960)	(1.362)	(2.165)	(0.893)	(1.101)	(1.421)	(0.402)	(0.771)	(1.546)
ACOUNT	-0.0177***	-0.0147***	-0.0121***	-0.00665	-0.00741	-0.00867	-0.0219***	-0.0172***	-0.0131***
	(-2.860)	(-3.019)	(-3.302)	(-0.854)	(-1.186)	(-1.584)	(-2.626)	(-2.662)	(-2.710)
Constant	0.122**	0.0306	0.00974	0.113***	0.0200	-0.0583*	0.169**	0.0480	0.0257
	(2.133)	(0.834)	(0.486)	(4.583)	(0.537)	(-1.951)	(2.089)	(0.932)	(0.863)
Obs.	8640	8640	8632	3140	3140	3138	5500	5500	5494
R-squared	0.220	0.171	0.135	0.211	0.171	0.138	0.249	0.194	0.156

Table 11: Call and Put Option Implied Volatility Spreads, by Subperiod

This table presents subperiod results from regressing the implied volatility spreads of GS, CW, and XZZ from options with 30, 60, and 91 day maturities on abnormal conference call tones and controls. Panel A includes observations from 2002–2006. Panels B and C contain observations from 2007–2009 and 2010–2012, respectively. Year-quarter and industry fixed effects (indicator variables) are included. Standard errors are clustered by firm and industry following Peterson (2009). Individual variable definitions are outlined in the Appendix. ***, **, * denotes statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. Robust t-statistics are presented in parentheses.

Panel A:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2002-2006	30d GS	60d GS	91d GS	30d CW	60d CW	91d CW	30d XZZ	60d XZZ	91d XZZ
I_ABTONE	0.00303	0.00273	0.00491	0.00252	0.00199	0.00417	0.00706	0.00618	0.00320
	(0.239)	(0.242)	(0.483)	(0.876)	(0.679)	(1.263)	(1.022)	(1.158)	(0.640)
M_ABTONE	0.0144	0.00586	0.00349	0.00233	-0.000563	-0.00286	0.0105*	0.00798	0.00547
	(1.263)	(0.504)	(0.273)	(0.792)	(-0.245)	(-1.223)	(1.676)	(1.611)	(1.153)
A_ABTONE	-0.0509***	-0.0442***	-0.0424***	-0.00133	-0.00126	0.000417	0.0125**	0.00706*	0.00345
	(-3.802)	(-3.580)	(-3.677)	(-0.692)	(-0.627)	(0.256)	(2.186)	(1.881)	(1.209)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	3455	3455	3454	3455	3455	3454	3161	3161	3160
R-squared	0.304	0.316	0.331	0.067	0.071	0.072	0.282	0.254	0.200
Panel B:									
2007-2009	30d GS	60d GS	91d GS	30d CW	60d CW	91d CW	30d XZZ	60d XZZ	91d XZZ
I_ABTONE	-0.0172	-0.0173	-0.0158	-0.00170	-0.00139	-0.00165	0.00687	0.00147	0.000436
	(-0.766)	(-0.820)	(-0.754)	(-0.726)	(-0.536)	(-0.599)	(1.241)	(0.324)	(0.0941)
M_ABTONE	-0.0170	-0.0150	-0.0164	-0.00704***	-0.00504**	-0.00602***	0.0142***	0.0105***	0.00867***
	(-0.800)	(-0.741)	(-0.855)	(-2.590)	(-2.162)	(-2.714)	(4.250)	(3.903)	(4.146)
A_ABTONE	-0.0720***	-0.0682***	-0.0635***	0.00224	0.00471**	0.00731***	0.000255	-0.00165	-0.00428
	(-6.079)	(-6.417)	(-6.715)	(1.196)	(2.585)	(3.821)	(0.0526)	(-0.465)	(-1.303)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	3955	3955	3948	3955	3955	3948	3917	3917	3910
R-squared	0.727	0.739	0.745	0.067	0.065	0.071	0.210	0.153	0.136
Panel C:									
2010-2012	30d GS	60d GS	91d GS	30d CW	60d CW	91d CW	30d XZZ	60d XZZ	91d XZZ
I_ABTONE	0.0141	0.00466	0.00382	-0.00568	-0.00161	-0.00365	0.0248**	0.0187*	0.0186*
	(0.376)	(0.141)	(0.128)	(-0.938)	(-0.283)	(-0.647)	(2.039)	(1.755)	(1.856)
M_ABTONE	-0.00628	0.00222	0.00895	-0.00174	0.00105	0.00800	-0.0166*	-0.00985	-0.0165***
	(-0.187)	(0.0801)	(0.347)	(-0.284)	(0.229)	(1.546)	(-1.730)	(-1.476)	(-3.096)
A_ABTONE	-0.0550**	-0.0421**	-0.0345*	-0.00229	0.00193	0.000362	0.00457	0.00191	-0.00352
	(-2.164)	(-2.049)	(-1.851)	(-0.431)	(0.353)	(0.0646)	(0.472)	(0.223)	(-0.368)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1585	1585	1585	1585	1585	1585	1562	1562	1562
R-squared	0.471	0.477	0.472	0.061	0.078	0.067	0.211	0.192	0.155

Appendix

Variable Definitions:

ITONE	(number of positive words – number of negative words)/ (number of positive words + number of negative words) in the introduction portion of the conference call
MTONE	(number of positive words – number of negative words)/ (number of positive words + number of negative words) by management in the Q&A portion of the conference call
ATONE	(number of positive words – number of negative words)/ (number of positive words + number of negative words) by analysts in the Q&A portion of the conference call
ROA	Earnings before extraordinary items/beginning total assets
MOM	Buy-and-hold monthly returns for 60 trading days prior to the conference call
SIZE	Ln(market value of equity at the fiscal year end)
BM	Book-to-market ratio measured at the fiscal year end
STD_RET	Standard deviation of *RET* over the last 12 months ending three months after the fiscal year end
STD_EARN	Standard deviation of *EARN* over the last five years
AGE	Ln(1 + number of years since a firm appears in CRSP monthly file)
BUSSEG	Ln(1 + number of business segments)
GEOSEG	Ln(1 + number of geographic segments)
LOSS	1 if *EARN* is negative, 0 otherwise
EARN	Earnings before extraordinary items/beginning total assets
ΔEARN	Change in earnings before extraordinary items/beginning total assets
SUE	(IBES actual EPS – median of most recent analysts' forecasts)/ stock price at the fiscal year end
AF	Analyst consensus forecast for one year ahead EPS/stock price at the fiscal year end
EBITRAT	Operating income before interest, taxes, and depreciation/beginning total assets
SGROWTH	Change in sales from sales 4 quarters prior/sales 4 quarters prior
WCAPRAT	Working capital/beginning total assets
RERAT	Retained earnings/beginning total assets
DEBTRAT	Total outstanding debt/beginning total assets
SALESRAT	Total revenue/beginning total assets
I_ABTONE	Management's unexpected tone in the introduction portion of the conference call, calculated from equation (5)
M_ABTONE	Management's unexpected tone in the Q&A portion of the conference call, calculated from equation (5)
A_ABTONE	Analyst's unexpected tone in the Q&A portion of the conference call, calculated from equation (5)
MB	Market-to-book ratio measured at the fiscal year end
EXPER	Ln(1 + number of previous calls the firm has held)
CALLAN	Ln(1 + number of analysts which speak during the call)
ANALYST	Ln(1 + number of analysts which issue earnings forecasts for the firm)
IO	The percentage of outstanding shares owned by institutional investors
ICOUNT	Ln(1 + number of total words spoken by management in the introduction portion of the conference call)
MCOUNT	Ln(1 + number of total words spoken by management in the Q&A portion of the conference call)

ACOUNT	Ln(1 + number of total words spoken by analysts in the Q&A portion of the conference call)
CALLVOL	Ln(implied volatility of at-the-money call options)
PUTVOL	Ln(implied volatility of at-the-money put options)
GS	The Goyal and Saretto (2009) measure of the difference between implied and historical volatility, represents market's perception of firm riskiness
CW	The Cremers and Weinbaum (2010) measure of the difference between ATM call and ATM put implied volatility, represents market's degree of optimism about the firm
XZZ	The Xing, Zhang, and Zhou (2010) measure of the difference between OTM put and ATM call implied volatility, represents markets perception of the firm's crash risk