The Effect of Managerial "Style" on the Tone of Earnings Conference Calls[*]

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Abstract:

The use of more or less optimistic language in corporate disclosures (sometimes referred to as "tone") has been the subject of increased interest in the academic literature. We add to this stream of research by examining the manager-specific component or "style" in the tone of earnings-announcement related conference calls. We find that the tone of conference calls that is not explained by current and future performance, which we call "residual tone", has a significant manager-specific component. We also find that "residual tone" is significantly associated with manager-specific factors such as gender, early career experiences, and involvement in charitable organizations. Taken together, our findings indicate that, in addition to reflecting current and future performance, the tone in conference calls is significantly influenced by managerial "style". Moreover, we examine the impact of managers' style on the market's interpretation of tone. Consistent with prior studies, we find evidence that the market reacts to the tone of conference calls. We also find evidence of a manager-specific component to conference call returns, which is consistent with managers' tone "style" impacting investors' interpretation of disclosures made in conference calls.

1.   Introduction

In recent years, numerous studies have used linguistic analysis tools to examine various dimensions of the language used in corporate disclosures. One of the first such studies was Li (2008), which examined the readability of annual report disclosures. Other studies have examined the risk sentiment disclosed in annual reports (Li 2007), level of perceived competition disclosed in MD&A disclosures (Li et al. 2010), and deceptive language used in conference calls (Larcker and Zakolyukina 2012). However, perhaps the most common aspect examined in prior studies is the "tone" of the language used – i.e., the use of optimistic versus pessimistic language. For example, prior studies have examined the tone of language used in earnings press releases (Davis et al. 2012; Demers and Vega 2011), conference calls (Frankel et al. 2009; Price et al. 2012), and MD&A disclosures (Davis and Tama-Sweet 2012).[1] The findings from these studies generally indicate that the tone of these disclosures is related to both current and future firm profitability and that the market reacts in a directionally consistent manner to the tone in these disclosures, after controlling for the information contained in the numerical measures of performance (e.g., the earnings surprise).

While the results of these studies are consistent with the notion that managers use the tone of corporate disclosures to convey their private information about future performance, it is possible that language choice is a function of other factors, including manager-specific factors. Recent studies have examined the impact of manager-specific effects on firms' accounting choices (Ge et al. 2011), forecasting choices (Bamber et al. 2010; Yang 2010), and tax aggressiveness (Dyreng et al. 2010). The general conclusion from these studies is that manager-specific effects, often referred to as "managerial style," have an impact on firms' financial

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[1] Other studies have examined the language used in media reports and their impact on the market (Tetlock 2007 and Tetlock 2008). We do not consider these corporate disclosures although the original source of the information used by the media is potentially corporate disclosures.

reporting and disclosure choices, beyond the economic factors that are specific to the firm. These studies raise the possibility that managers' choice of optimistic or pessimistic language in corporate disclosures would similarly be impacted by a manager's style. Given the limited constraints that exist with respect to the choice of language and the difficulty of verifying the legitimacy of language ex post, it is likely to be particularly prone to the effects of managerial style (Hambrick 2007). On the other hand, given the potential litigation costs (Rogers et al. 2011) as well as reputational costs associated with using overly optimistic (or pessimistic) language, one might argue that corporate disclosures are carefully "vetted" prior to release. Such a "vetting" would likely limit the impact of managerial style on corporate disclosures such as conference calls. The purpose of this study is to examine the extent to which manager-specific style impacts the language used in firms' conference calls.

We focus our examination on earnings-announcement related conference calls because of the importance of these calls as a voluntary disclosure mechanism (Frankel et al. 1999; Bowen et al. 2002; Kimbrough 2005). In addition, the unstructured and unregulated nature of these calls provides managers with greater opportunity to exert their style in their choice of language.[2] By focusing only on conference calls related to earnings announcements, we are also able to control for the underlying economic news communicated in the disclosure (i.e., the earnings surprise).

We utilize a methodology similar to that used in prior studies (Bertrand and Schoar 2003; Ge et al. 2011; Bamber et al. 2010; Dyreng et al. 2010) – following managers across firms to

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[2] Earnings press releases are also relatively unregulated (compared to audited financial statements) but these releases are potentially the product of numerous agents of the firm and not just the CEO or CFO (e.g., investor relations and legal department personnel). Thus, the ability of a specific manager such as the CEO or CFO to affect the tone in press releases based on their personal style is likely to be more limited. Arguably, the presentation portion of a conference call is also not the sole product of the managers participating on the call but the manager's influence over tone in a presentation is likely greater than the tone in a press release.

measure a manager-specific fixed effect.[3] Specifically, we identify a sample of managers (either CEOs or CFOs) who have worked for at least two different firms and for which we are able to obtain conference call transcripts for 1) at least two quarters during the manager's tenure at each firm and 2) at least two quarters before or after the manager joins the firm. We then estimate the tone of the language used by managers in the call by counting the frequency of positive and negative words as defined by three different wordlists: 1) the DICTION wordlist used in Davis et al. (2012), 2) the wordlist developed in Henry (2006), and 3) the wordlist developed by Loughran and McDonald (2009).

We begin by demonstrating that language choice has a significant impact on market returns. To the extent the market ignores managers' choice of language, managerial style with respect to language would be less costly to the firm and, therefore, less important to understand. However, if the market reacts to managers' choice of language, then documenting the existence of style effects is important because of the potential effects on market participants. To demonstrate the effect of language choice on market reactions, we regress two-day earnings announcement returns on our measures of tone. Results indicate a strong, positive market reaction to tone, suggesting that managers' language choice impacts market reactions to earnings announcements.

We next demonstrate the extent to which managers exhibit a particular style in their choice of language by estimating manager fixed effects with respect to tone. Because we are

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[3] A recent working paper by Fee et al. (2011) questions the manager-fixed effect methodology employed by Bertrand and Schoar (2003). To address their concern, we conduct a robustness test based on a regression of average tone residuals across the different firms for which a manager works as additional corroborating evidence (see Section 4). The criticism in Fee et al. (2011) also stems from the fact that they fail to find evidence of a significant change in firm policies upon the appointment of a new CEO if the manager change was due to an exogenous shock (e.g., death of a CEO). However, the lack of change in firm policies in this circumstance may simply reflect the fact that the new CEO has a similar style to that of the former CEO. Finally, it is important to note that our evidence does not address the optimality of a manager's style with respect to tone. It is possible that firms select managers based on their styles to meet firms' needs (i.e, there is an optimal sorting of manager styles to the firms for which they work).

interested in managers' use of language to *describe* the economic events of the firm, we first regress tone on measures of current and future performance to control for the effects of the economic events themselves on our measures of tone. We call the residuals from these regressions our "residual tone" measures. We then regress residual tone on firm, year, quarter and manager fixed effects and test the joint significance of the manager fixed effects. The results of this analysis indicate that manager-specific factors are a statistically significant determinant of residual tone. Adding manager fixed effects to a base model that includes only firm, year, and quarter fixed effects increases the adjusted R^2's by 6 to 7% across our three tone measures. These increases are statistically significant indicating that a manager-specific factor influences the residual tone of the language used in conference calls (i.e. the tone that does not relate to current or future performance).[4]

We then examine whether observable manager-specific characteristics (e.g., gender, age, educational and career experiences) explain variation in residual tone. We find evidence that female CEOs and CFOs use less optimistic language than their male counterparts while those involved in charitable organizations use more optimistic language. We also find that CEOs and CFOs who previously worked for an investment bank use less optimistic language than those without such experience. It is possible that involvement in an investment bank makes managers particularly sensitive to the negative consequences of inflating investors' expectations. Finally, consistent with recent evidence by Schoar and Zuo (2011) that managers who begin their careers during recession periods adopt more conservative corporate policies, we find that such CEOs also use less optimistic language during conference calls. This evidence further supports our contention that manager-specific factors influence the tone of earnings conference calls.

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[4] While these increases in R^2's may appear small, they are larger than those reported in Ge et al. (2011) (average increase of 2%) and Bertrand and Schoar (2003) and in line with those reported by Bamber et al. (2010).

Overall, our results suggest that managers' individual styles potentially impact the market reaction to earnings announcements. In further analysis, we also demonstrate a manager-specific effect on earnings announcement returns, albeit a much weaker effect than the manager-specific effect on language choice. This evidence, however is consistent with managers influencing the market's interpretation of the firm's performance based on their choice of language.

Our study contributes to the literature in three ways. First, our paper considers an alternative determinant of the tone expressed by managers in corporate disclosures. Prior research primarily considers the potential for tone to signal managers' private information about future performance. However, tone is also potentially subject to managerial biases – both those that are strategic in nature (e.g., "hyping" a stock prior to a seasoned-equity offering as in Lang and Lundholm 2000) as well as those that are potentially unintentional.[5] To the extent strategic biases are unlikely to be consistent across time and firms for a given manager, our results suggest that the tone used in corporate disclosures is potentially influenced by unintentional, manager-specific tendencies to be overly optimistic or pessimistic.[6] More generally, our evidence suggests that measures of tone do not simply reflect the economic events of the firm but also a manager's choice of words used to describe these events and their implications for future performance. Although prior studies control for quantifiable current performance (e.g., reported earnings) when examining the relation between tone and market returns, these measures do not necessarily capture all events that occur during the quarter. Thus, it is not clear from these prior

[5]In a recent (concurrent) working paper, Huang et al. (2011) examine whether managers use their discretion over tone for strategic purposes. Specifically, they examine whether "abnormal" tone is related to meeting/beating benchmarks, restatements, equity offerings and stock option grants. Their evidence supports the conclusion that managers use tone for strategic purposes.

[6] If strategic biases are time-varying and firms hire managers with specific tendencies to meet these strategic objectives, our evidence of manager-specific language effects could be due to strategic biases. For example, if firms hire optimistic managers prior to issuing equity, the manager-specific effect could be partially due to managers fulfilling firms' strategic incentives. However, it is still the case that the firm identified a particular manager as optimistic, indicating that managers have language styles. In this case, however, the language style is possibly not due to unintentional, cognitive biases.

studies whether tone measures simply reflect events that occurred during the quarter (content) or the words used to describe them (language). Because economic events are not likely to be manager-specific, our results suggest there is a language component to tone.

We also contribute to the managerial "style" literature by identifying certain observable, manager-specific characteristics that explain the use of optimistic language. While prior studies have provided evidence on managerial style over various corporate reporting choices, little is known about person-specific factors that influence the formation of certain managerial styles. For example, both Ge et al. (2011) and Dyreng et al. (2010) find limited (and mixed) evidence that observable manager characteristics explain the accounting choices examined in their studies. It is possible that the effect of managerial style on the choices examined in these prior studies is weaker, making it more difficult to identify the underlying manager-specific characteristics that determine a manager's style. By providing a potentially stronger setting, our study sheds light on the determinants of having a relatively optimistic/pessimistic managerial style. In addition, we identify a relatively unexplored manager-specific characteristic that appears to influence managerial optimism: involvement in charitable organizations.

Finally, our study is one of the first to examine the impact of managerial style on the financial markets.[7] In particular, we provide evidence of a manager specific effect in market reaction to conference calls and some evidence that this market reaction effect is related to manager-specific effects on tone.

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[7] The one other study that examines the market's response to managerial style is Yang (2012). She finds evidence consistent with the market incorporating manager-specific prior accuracy when interpreting subsequent managerial forecasts. While her evidence is consistent with the market recognizing differences in manager-specific effect, it is not clear that this result necessarily implies that the market recognizes manager-specific style difference with respect to residual tone. The use of language that is ex post overly optimistic or pessimistic is likely to be far more difficult to identify than prior forecast accuracy.

The remainder of the paper is organized as follows. In the next section we discuss the related literature and our empirical predictions. In Section Three we discuss our sample selection process, measurements of tone and research design. In Section Four we discuss our analysis of the manager-specific effects on tone in Section Five. In Section Five we examine the determinants of managerial style. Section Six provides additional analysis and Section Seven concludes.

2.   Prior Literature and Predictions

Until recently, the possibility that manager specific factors might impact corporate level decisions has not been widely recognized in the accounting literature. Traditionally, managers were viewed as homogeneous and perfect substitutes – responding to their economic circumstances in rational and systematic ways. In contrast, the management literature – specifically, upper echelons theory (Hambrick and Mason, 1984; Hambrick, 2007) – has long recognized the likelihood that individual specific attributes of top managers can influence their decisions and potentially impact corporate level decisions. This potential impact was first demonstrated in the finance literature by Bertrand and Schoar (2003) with respect to investment and financing decisions of the firm (e.g., investment to cash flow sensitivity, leverage). Their results indicate an identifiable manager-specific component to these types of corporate decisions.

More recently, in the accounting literature, studies have found similar identifiable manager-specific components related to 1) a variety of accounting choices, including discretionary accruals, pension rate assumptions, the use of operating versus capital leases, and meeting/beating behavior (Ge et al. 2011), 2) forecasting behavior, including the frequency, precision, accuracy and bias associated with management forecasts (Bamber et al. 2010), and 3)

tax aggressiveness, specifically GAAP effective tax rates and cash effective tax rates (Dyreng et al. 2010). These studies support the notion that managerial style can affect financial reporting decisions, even though many of these decisions are constrained by factors such as Generally Accepted Accounting Principles, external auditors, and regulators.

The extent to which these prior findings apply to the setting of the tone used in conference calls is an open question. On the one hand, conference call tone may be particularly susceptible to the influence of managerial style because the choice of language is relatively unconstrained and difficult to verify ex-post when compared to audited financial statements and explicit management forecasts. Managers are obviously constrained from making statements that are verifiably false, but positioning factual statements in a more or less positive fashion is less likely to cause regulatory intervention. One of the main factors that upper echelons theory predicts will moderate a manager's ability to impart his style on corporate decisions is the level of managerial discretion (Hambrick and Finkelstein 1987). Ge et al. (2010) find evidence consistent with this theory – management style is less evident when the firms they work for have industry-expert auditors, which should limit managerial discretion. The relatively unconstrained nature of language choice should increase the likelihood of a manager-specific effect.

On the other hand, using language that is consistently more optimistic (or pessimistic) than is warranted by future performance is costly. Prior studies have demonstrated a market reaction to the tone of corporate disclosures, suggesting that overly optimistic or pessimistic language can bias investors' beliefs (Davis et al. 2012; Demers and Vega 2010; Price et al. 2012; Huang et al. 2011).[8] More recently, Rogers et al. (2011) present evidence that optimistic

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[8] It is important to note, however, that most of these studies do not directly control for future performance in their market reaction tests. Thus, the market reaction to tone is potentially due to managers' use of tone to signal future performance. Whether the market reacts to the portion of tone that is *not* supported by future performance is an empirical question. Huang et al. (2011) provide some evidence that this is true – they find that an abnormally

language in corporate disclosures increases the likelihood of class action lawsuits. At a minimum, being systematically optimistic is likely to damage a manager's reputation. Thus, being overly optimistic or pessimistic in conveying the performance of the firm is likely costly, both to the manager as well as to the firm. Given these costs, it is likely firms expend resources to monitor managers' language during conference calls, constraining managers' ability to exert their style. In addition, if managers themselves recognize these costs, they are unlikely to exhibit a consistent "style" in their use of language.

The above discussion, however, assumes that managers knowingly exert their style in their choice of tone. Alternatively, it is possible managers' use of optimistic or pessimistic language is the result of unintentional biases that come from their personalities, prior experiences, and values. Within the psychology literature, optimism – or the belief that good (as opposed to bad) things will generally occur in one's life – is often considered a dispositional trait that is relatively stable across time and situations (Scheier and Carver 1993).[9] Studies in psychology have demonstrated the tendency for optimists to focus on positive factors in the face of negative events, such as the loss of a loved one (Davis et al. 1998) or gambling losses (Gibson and Sanbonmatsu 2004). Other studies have demonstrated that optimists exhibit an unconscious attentional bias toward positive stimuli as demonstrated by performance on the emotional Stroop task (Segerstrom 2001).[10] While these studies are far removed from decisions about corporate

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positive tone in earnings press release results in a positive stock return at the time of the announcement and negative returns in the subsequent two quarters. This evidence, however, is contrary to that found in Demers and Vega (2011) and Price et al. (2012), both of which find a *positive* relation between unexpected tone and post-announcement returns, suggesting an *under*-reaction to tone rather than an *over*-reaction.

[9] Studies on dispositional optimism often measure this construct using the Life Orientation Test (or LOT). Longitudinal studies have noted high correlations in LOT scores across time, consistent with optimism being a personality trait (Scheier and Carver 1993). In addition, studies of identical twins raised separately and together suggest a strong hereditary component to optimism/pessimism (Plomin et al. 1992).

[10] The emotional Stroop task involves having subjects identify the ink color of a list of words that vary in emotional significance, ignoring the word's meaning. Ignoring the meaning of words with high emotional significance is more difficult, leading to response latency in identifying the ink color (referred to as "interference"). This study examined

disclosures, they suggest the possibility that an individual's pre-disposition toward optimism influences his or her assessment of current events and their implications for future performance, and therefore affects an individual's style in describing events in public disclosures.

Given the above evidence, we predict that manager-specific factors influence their use of language during conference calls. In particular, we expect that the net optimism expressed in conference calls that is unrelated to current and future performance – deemed residual tone – is influenced by managerial style. In other words, there is a manager-specific component to residual tone.

3. Measures of Tone and Sample Construction

3.1   *Measures of Tone*

We evaluate whether managers' language is positive or negative using frequency counts of "positive" and "negative" words. Prior studies have used different sources for their wordlists, some of which are based on linguistic software packages while other are designed specifically for financial contexts. There is currently no consensus in the literature regarding which wordlist is the most appropriate for the analysis of language in contexts such as financial disclosures. Therefore, to ensure that our results are not driven by one particular wordlist, we rely on three wordlists that have been examined in prior research.

The first wordlist we use is from the textual analysis software DICTION, which is a dictionary-based program that counts types of words most frequently used in contemporary American public discourse (Hart, 1984). Davis et al. (2012) and Demers and Vega (2011) use the DICTION wordlist to count optimistic words and pessimistic words in the full texts of

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the relation between interference associated with positive and negative words and subjects' score on the LOT test (discussed in footnote 9).

earnings press releases. Davis et al. (2010) suggest that the DICTION wordlist is appropriate in analyzing earnings press releases because managers' narrative disclosures and public discourse often share common themes.

However, one limitation of general wordlists such as the one from DICTION is that they do not analyze language in the context of financial disclosures.[11] To overcome this limitation, we also use two wordlists specifically designed for financial disclosures: 1) a wordlist developed by Henry (2006, 2008) that was specifically designed for analyzing language in earnings press releases and 2) a wordlist developed by Loughran and McDonald (2009) that was designed for analyzing language in 10-K filings.[12] We obtain the Henry wordlist from Figure 1 of Henry (2008) and the Loughran and McDonald wordlist from the authors' website (http://www.nd.edu/~mcdonald/Word_Lists.html).

We use the above-mentioned three wordlists to count both optimism-increasing words and optimism-decreasing words used in each conference call transcript. We use a textual analysis programming language to extract the comments made by a specific manager in the presentation portion and the Question and Answer (Q&A) portion of the conference call.[13] Our language measure, *TONE*, is calculated as the difference between the optimistic words and the pessimistic words spoken by the manager, scaled by the total words spoken by the manager.

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[11] For example, some words have positive or negative meaning within the setting of financial disclosures but are not included in the DICTION wordlist (for example, the word "record" has a positive meaning in a financial reporting context but is not included in the DICTION wordlist).

[12] Henry and Leone (2009) show that the tone measure derived from the Henry wordlist outperforms other tone measures designed for general contexts (i.e., the DICTION wordlist and the General Inquirer wordlist) in terms of the statistical and economic significance of associations between tone measures in earnings press releases and stock market reactions. Loughran and McDonald (2009) compare their wordlist with the wordlist from General Inquirer and find that the tone measure of 10-K texts based on their wordlist is significantly associated with the stock returns around the 10-K filing date while the tone measure based on the General Inquirer wordlist is not.

[13] Because the presentation portion of the call generally consists of prepared remarks, which may or may not be read by the individual manager, it is possible that the CEO influences the remarks made by the CFO during the presentation portion of the call and vice versa. If this is the case, we should use all comments made during the presentation rather than just the comments made by our manager of interest. We tested the sensitivity of our results to using the tone of the entire presentation transcript along with the tone of the specific comments made by the manager during the Q&A. Results are inferentially similar.

TONE_D, *TONE_H*, and *TONE_LM* correspond to the measures based on wordlists from

DICTION, Henry (2008), and Loughran and McDonald (2009) respectively.

3.2   Sample construction

We construct a manager-firm matched panel dataset – tracking the same manager across

different firms over time as well as including data for the same firm under different managers.

We focus on CEOs and CFOs because they are the managers who are usually in charge of

conference calls. We are able to estimate both manager and firm fixed effects using this dataset;

therefore the impact of the managers on conference calls can be disentangled from the

underlying factors that are specific to the firm.

To construct this sample, we use Execucomp to track the names of the CEOs and CFOs

in 1,500 publicly traded U.S. firms from 2002 through 2009.[14] We first merge Execucomp with

Quarterly Compustat to keep the observations that have data for total assets, sales, common

shares outstanding, income before extraordinary items, and stock price at the end of quarter. We

identify a total of 206 CEOs and CFOs who have worked for at least two companies at the CEO

or CFO position for at least one year.[15] Table 2 Panel A reports the results of our sample

selection procedure. Next, the firms in our sample have to appear under more than one CEO or

CFO to enable us to separate the firm effect from the manager effect. Therefore, we also include

data for the same firm in the quarters prior to the starting quarter of the manager and the quarters

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[14] We start our sample period from 2002 because the CQ FD Disclosure database only provides earnings conference call transcripts for conference calls that occurred since 2001.

[15] We use the variable "titlean" in Excecucomp to identify the CFO of the firm. The following key words are chosen: "Chief Financial Officer," "CFO," "Vice President in Finance," "VP Finance," etc. Note that Execucomp collects data from proxy statements; therefore, it only includes CFOs who are in the top five paid executives and have compensation higher than $100,000. Among all CEO and CFO job changes on Excecucomp from 2002 through 2009, 77 of them are at the CEO position in both firms they have worked for, 120 of them are at the CFO position in both firms, 9 of them moved from the CFO position to the CEO position at the second firm, and 3 of them moved from the CEO positive to the CFO position at the second firm.

following the final quarter of the manager at the firm. We call these quarters "filler quarters" and call the sample excluding the filler quarters our "manager-firm matched sample."[16]

We next obtain earnings announcement dates from Quarterly Compustat and collect conference call transcripts from the CQ FD Disclosure database through Factiva.[17] We remove observations with missing conference call transcripts, resulting in the loss of 32 managers from our sample. Of the remaining 174 managers in the sample, we exclude 53 managers when there are fewer than two filler quarters for a firm or when there are fewer than two quarters of conference call transcripts for one of their two firms. The resulting manager-firm matched sample contains 2,098 firm-quarters, 225 firms, and 121 individual managers (i.e., excluding the "filler" observations).

Table 2 Panel B reports the frequency of manager-firm pairs based on the number of quarters of conference call transcripts that we have for a given manager at a given firm. For about 80 percent of our manager-firm pairs, we have conference call transcripts available for at least four quarters). The average number of quarters of conference call transcripts of a manager at a given firm in our sample is 8.63 quarters.

Table 2 Panel C presents the distribution of the sample firms based on the number of distinct managers in our sample. Only 17 out of the 225 firms in the sample have two or more distinct managers. The majority of the firms have only one manager in the manager-firm matched sample. As discussed previously, we need the observations of the firm under a different manager in order to disentangle the manager fixed effect from the firm fixed effect. Therefore,

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[16] Execucomp is an annual database and does not identify the exact month that a CEO or a CFO joins a company; therefore we read each conference call transcript to ensure that the the name of the manager is mentioned in the transcript and this manager participates in the conference call. If not, we consider that firm-quarter observation as a "filler quarter."

[17] The CQ FD Disclosure database occasionally provides only an event brief for a conference call. We require the availability of full transcripts to be included in our sample.

we add 2,966 filler quarter observations to our sample. Table 2 Panel D tabulates the distribution

of managers based on how many times they have changed jobs. All of the managers in our

sample have assumed the CEO or CFO position in at least two companies, and only one of them

has changed jobs more than once.

[Table 2]

4.   The effect of individual managers on the tone of conference calls

4.1   Research design

We analyze the effects of individual managers on conference call tone using a two-stage

regression approach. In the first stage regression, we regress each tone variable (i.e, *TONE_D*,

TONE_H, and *TONE_LM)* on our measures of current and future performance:

$$TONE_{it} = \alpha_0 + \alpha_1 MBE_{it} + \alpha_2 SURP_{it} + \alpha_3 LOSS_{it} + \alpha_4 RETURN_{it} + \alpha_5 GROWTH_{it} + \alpha_6 ROA_{it}$$
$$+ \alpha_7 ROA_{it+1} + \alpha_8 ROA_{it+2} + \alpha_9 ROA_{it+3} + \alpha_{10} ROA_{it+4} + \varepsilon_{it} \tag{1}$$

TONE_i is based on words spoken by the specific manager in whom we are interested.

We include five contemporaneous quarterly firm performance variables to capture the effects of

current performance on managers' tone:

- An indicator variable equal to one if the firm meets or beats the analyst forecast for a given quarter (*MBE*), which prior studies have suggested can impact the tone of a conference call (Frankel et al. 2009).
- The earnings surprise measured as the difference between quarterly EPS and the consensus analyst forecast deflated by stock price at the beginning of the quarter (*SURP*).
- An indicator variable equal to one for firms reporting negative earnings in the fiscal quarter (*LOSS*).
- The firm's market-adjusted stock return during the fiscal quarter (*RETURN*), which captures current firm performance that goes beyond earnings numbers (e.g., the release of a new product).
- The firm's quarterly sales growth relative to the same quarter last year (*GROWTH*).
- Current quarterly return on assets (*ROA*), calculated as quarterly earnings before extraordinary items deflated by beginning assets.

We also include future performance variables in Equation (1): return on assets in each of the next four quarters ($ROA_{t+1}, ROA_{t+2}, ROA_{t+3}, ROA_{t+4}$) to capture the impact of future prospects on a manager's tone.[18] We expect managers' tones to be positively related to both contemporaneous firm performance and future performance; therefore, we expect positive coefficient estimates on α_1 to α_{10}, with the exception of α_3, which we expect to be negative.

We then calculate the residuals for each firm-quarter observation from the first stage regression (i.e., Equation 1) and call this variable residual tone (*RESIDUAL*). In the second stage, we regress *RESIDUAL* on firm, year, quarter and manager fixed effects:

$$RESIDUAL_{it} = \beta_0 + FIRM_i + YEAR_t + QTR_k + MANAGER_j + \varepsilon_{it} \qquad (2)$$

The firm fixed effects (*FIRM_i*) control for static firm-specific factors that might impact the residual tone expressed in conference calls. The year and quarter fixed effects (*YEAR_t*, and *QTR_k*) control for time-specific factors and fiscal quarter factors that might influence the residual tone in conference calls. Thus, the manager fixed effects (*MANAGER_j*) capture commonalities in residual tone across the various firms that a manager works for and that are different from the average residual tone that occurs across time for a given firm and the average residual tone that occurs across firms in a given year or fiscal quarter. To test our prediction that manager specific factors influence the residual tone in conference calls, we perform an F-test for the joint significance of the manager indicator variables.[19]

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[18] Because the market is forward looking, the variable *RETURN* should also capture expectations of future performance.

[19] Theoretically, a two-stage approach is not necessary and we could have included the firm, year, quarter and manager effects in the first stage regression (i.e., equation 2). Results using a one-stage approach are nearly identical. We report results using a two-stage approach because we find the correlations between tone and concurrent and future performance descriptively interesting.

4.2   Descriptive Statistics

Table 3, Panel A presents summary statistics for the variables used in our analyses and Panel B compares the means and medians to the Compustat universe between 2002 and 2009. The means of our tone measures are 1.54%, 1.93%, and 0.57% for *TONE_D*, *TONE_H*, and *TONE_LM*, respectively, suggesting that on average the language used by the managers in our sample is optimistic.[20,21]

[Table 3]

In terms of total assets (*ASSETS*), firms in our sample appear to be significantly larger than the Compustat average. This difference is not surprising because our main data source is Execucomp, which covers relatively large firms.[22] The average firm in our sample also has better operating performance than an average Compustat firm, as reflected in higher current and future return on assets, a higher likelihood of meeting or beating analyst forecast, and a smaller likelihood of having losses.

4.3   Market reaction to tone

Before we present the results of our main analysis, we first provide evidence that the market reacts to the tone of the language used during conference calls. Prior studies have documented a positive association between measures of tone in corporate disclosures and stock returns. For example, Davis et al. (2012) and Demers and Vega (2011) both provide evidence of

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[20] By construction, *TONE_D*, *TONE_H*, and *TONE_LM* are weighted averages of the net optimistic language used by managers in the presentation and Q&A portions of the call. In untabulated analysis, we find that the average net optimistic language during the presentation (Q&A) portion of the call is 1.67% (1.34%), 2.22% (1.43%), and 0.76% (0.34%) using *TONE_D*, *TONE_H*, and *TONE_LM*. Thus, the average optimism expressed by managers during the presentation portion of the call is generally higher than the average optimism expressed during the Q&A.

[21] The lower mean for *TONE_LM* (relative to the other two measures) is likely due to the nature of the L&M wordlist, which has a significantly higher number of negative words (2,337) versus positive words (353) compared to those of DICTION (914 negative, 697 positive) and Henry (98 negative 188 positive).

[22] Also, our sample only consists of firms whose manager moves to another publicly traded firm. This procedure would result in larger firms because CEOs and CFOs from larger firms are more likely to move between public firms. CEOs and CFOs from smaller firms might move to a private firm or to a divisional position in a large firm.

a market reaction to the tone in earnings press releases, while Price et al. (2012) find similar evidence for the tone of the Q&A session during conference calls. Evidence of a market response to managers' tone emphasizes the importance of understanding the effects of individual managers on the tone of conference calls. We therefore begin by demonstrating that these effects hold for our sample of earnings announcement-related conference calls using our measures of tone. We estimate the following regression:

$$CAR_{it} = \gamma_0 + \gamma_1 MBE_{it} + \gamma_2 SURP_{it} + \gamma_3 LOSS_{it} + \gamma_4 RETURN_{it} + \gamma_5 GROWTH_{it} + \gamma_6 ROA_{it}$$
$$+ \gamma_7 ROA_{it+1} + \gamma_8 ROA_{it+2} + \gamma_9 ROA_{it+3} + \gamma_{10} ROA_{it+4} + \gamma_{11} TONE^{ALL}{}_{it} + \varepsilon_{it} \qquad (3)$$

CAR is the value-weighted market-adjusted return for the two-day window (0, +1) centered around the conference call date. *TONE*^{ALL} refers to the tone (optimistic words less pessimistic words) of the words spoken by all participants during the call, scaled by the total words in the transcript, using the three dictionaries described previously (*TONE_D*^{ALL}, *TONE_H*^{ALL}, and *TONE_LM*^{ALL}). Note that for these tests we use the tone of the words spoken by all participants on the call because the market reaction is likely a function of all comments made during the call as opposed to the tone of the comments of the specific manager in our sample.[23] Because we include our measures of current and future performance in equation (3), the coefficient estimate on *TONE*^{ALL} (γ_{11}) captures the stock market reaction to residual tone – albeit, the residual tone of all words spoken during the call (and not just the words spoken by the manager in our manager-firm matched sample).

Results of this analysis are presented in Table 4. Consistent with prior research, we find positive and significant coefficients on *MBE* and *SURP*. The coefficient on *LOSS* is positive

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[23] Results are inferentially similar if we exclude words spoken by analysts during the call.

rather than negative, perhaps due to collinearity with other measures of performance.[24] We also

find a negative coefficient on *RETURN*, consistent with increases (decreases) in market

expectations over the quarter leading to negative (positive) surprises at the earnings

announcement. Of more direct interest to this study, we find that the coefficients on all three

tone measures are positive and statistically significant at a less than 1 percent level. Overall,

these results suggest that the market recognizes and prices the tone of the language used during

conference calls, even when that language is unrelated to current and future realized

performance.[25] Therefore, the determinants of this language choice are important to understand

given that managers' language choice potentially impacts the market's interpretation of a firm's

performance. We next provide direct evidence that managerial "style" is an important

determinant of managers' language choice.

[Table 4]

4.4   Results of empirical analysis of managerial "style"

Table 5 presents the regression results for our first stage regression (i.e., equation one) in

our analysis of the effects of individual managers on conference call tone. Across the three

columns where *TONE_D*, *TONE_H*, and *TONE_LM* are the dependent variables respectively, the

coefficient estimate on *MBE* is consistently significantly positive at a less than one percent

significance level, suggesting that meeting/beating market expectations leads to more optimistic

use of language during conference calls. The coefficient estimate on *LOSS* is significantly

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[24] The univariate correlation between *CAR* and *LOSS* is negative (-0.23) and significant at the one percent level. However, it is important to recognize that because losses may not be unexpected, it is unclear what the appropriate sign should be on this variable.

[25] The fact that the market reacts to the portion of tone that is unrelated to current and future realized performance could be interpreted as evidence of market inefficiency. We do not directly test for market inefficiency (i.e., by looking for price reversals in post conference call returns) because our sample sizes are relatively small and our primary research interest is on the effect of managerial style on conference call tone. We note, however, that a concurrent working paper by Huang et al. (2011) finds evidence of price reversals associated with the tone in earnings announcement press releases.

negative for all three regressions at a one percent significance level, indicating that managers are less optimistic when firms have losses. In addition, the coefficient on *ROA* and *RETURN* are positive and statistically significant in the *TONE_H* and *TONE_LM* regressions. Earnings surprise (*SURP*), however, is not positively associated with the tone during conference calls; however, this is likely due to the positive correlations between *SURP* and other contemporaneous performance variables.[26]

Turning to the future performance variables (ROA_{t+1} to ROA_{t+4}) , we find that the coefficient estimates on one- and two-quarter ahead return on assets are significantly positive for *TONE_H* and *TONE_LM*, suggesting that managers' tone during conference calls is predictive of future operating performance. This result is consistent with the finding in Davis et al. (2012) that tone in earnings press releases is associated with future earnings. However, the coefficients on the future ROA variables are not significant for *TONE_D*, which is surprising given that Diction is the linguistic dictionary used by Davis et al. (2012). One possible explanation is that our analysis is based on manager specific comments rather than the entire conference call transcript. Thus, depending on the manager represented in the sample, certain remarks that are commonly made during conference calls (e.g., a recap of the financial performance in the prior quarter) are not included in our analysis.[27]

In terms of the magnitude of coefficient estimates and adjusted R^2's, the association between tone and firm performance is stronger for *TONE_H* (i.e., based on Henry, 2008) and *TONE_LM* (i.e., based on Loughran and McDonald, 2009) than *TONE_D* (i.e., based on the

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[26] Consistent with this conjecture, when we exclude *MBE* from the regression, the coefficient on *SURP* is positively associated with our tone variables and generally significant.

[27] In untabulated analysis, we examined the relation between the tone of the entire presentation comments and current and future performance. In this analysis, the coefficients on one- and two- quarter ahead ROA are significantly positive for all three tone measures, the coefficients on three-quarter ahead ROA are significant for the Henry and LM tone measures.

DICTION wordlist) (e.g., the adjusted R^2's are 9.2% and 7.5% for *TONE_H* and *TONE_LM*, versus 2.2% for *TONE_D*).

[Table 5]

Table 6 reports the results of our analyses of managers' effects on conference call tone. Panel A of Table 6 shows the regression results for equation two (i.e., second stage regression). For each tone measure, the first row reports the adjusted R^2 from a base regression excluding the manager indicator variables (i.e., regressing the tone residuals on the firm and quarter indicator variables only). The second row of each measure presents the F-statistics, the associated p-value from tests of the joint significance of the manager fixed effects, and the adjusted R^2 when the manager indicator variables are added into the base regression.

The adjusted R^2 in the base regression for our first tone measure, *TONE_D*, is 37 percent, suggesting that firm-specific and quarter-specific factors account for a significant portion of the variation in tone that is not explained by performance related variables included in the first stage regression. Adding manager fixed effects to the base regression increases the adjusted R^2's by 7 percent to 44 percent. The F-test of the manager fixed effects generates a significance level less than one percent. The F-tests of the manager fixed effects for *TONE_H* and *TONE_LM* are also significant at less than one percent. The adjusted R^2 increases by 6 percent for *TONE_H* and 7 percent for *TONE_LM*. Based on this evidence, we reject the null hypothesis of no manager fixed effect on the tone of earnings conference calls.

For each of our tone measures, we also count the frequency of the significant manager fixed effects estimated in Panel A to ensure that it is not just a small number of managers that drive the significant results in the F-test results. These frequencies are reported in Panel B of Table 6. The average percent of manager fixed effects that are significant at the 5 percent level across our

three tone measures is 29.3 percent (i.e., ranging from 25 percent to 33 percent) and at the ten

percent level is 40 percent (i.e., ranging from 36 percent to 43 percent). These percentages are

much higher than expected under the null of no manager fixed effects on tone. They are also much

higher than the percentages reported in Ge et al. (2011) related to CFO fixed effects on accounting

choices (i.e., an average of 9 percent at the 5 percent significance level), consistent with the

conjecture that manager specific factors have a greater effect on relatively unconstrained language

choices than on more constrained accounting choices.

Finally, Panel C of Table 6 reports the mean, median, lower quartile, and upper quartile

values of the manager fixed effects estimated in Panel A of Table 6. The interquartile ranges of

the manager fixed effects are 0.74, 0.80, and 0.68 for *TONE_D*, *TONE_H*, and *TONE_LM*,

respectively. The average number of words in a manager's comments during conference calls is

2,604, which translates into a difference of roughly 18 to 21 more optimistic than pessimistic

words spoken by managers at the third quartile relative to the first quartile.[28]

We also test the robustness of our results to an alternative research design. A recent

study by Fee et al. (2011) questions the validity of the manager fixed effect research design and

suggests that a more appropriate test is based on a regression of residuals across the firms for

which a manager works. Specifically, we first regress our tone measures on our control variables

(as in equation 1) along with firm, year, and quarter fixed effects. We then average the residuals

for each manager-firm pair in our manager-firm matched sample and regress each managers'

average residual from the second firm for which a manager works (firm 2) on the average

residual from the first firm (firm 1). A positive coefficient on the firm 1 average residual

indicates that the manager carries his "tone style" with him to the new firm. Results of this

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[28] We also examine the correlations among manager fixed effects based on the three different tone measures. The average Spearman correlation is 0.62, suggesting that managers' styles are similar across the three measures although they are not perfect substitutes.

analysis (untabulated) indicate a positive and statistically significant coefficient on the firm 1 average residuals for our *TONE_D* and *TONE_LM* measures (p<10%) but not for our *TONE_H* measure. This evidence generally corroborates our prior findings and suggests a distinct manager-specific "tone style."

In summary, our results suggest that a significant portion of managers have a measurable style when it comes to their choice of language during conference calls. Adjusted R^2's increase, on average, 7% from including manager fixed effects, which are greater increases than those found in Ge et al. (2011) with respect to CFOs' effects on accounting choices. It appears that manager-specific factors have a statistically and economically significant influence over the tone of their language during earnings conference calls. In other words, managers appear to be consistent in their choice of language across the firms that they work – either portraying their firms' prospects in an overly optimistic or pessimistic way, relative to actual performance.

[Table 6]

5. Determinants of Managerial Style

In this section, we explore the potential determinants of manager-specific styles. While recent studies document the impact of manager styles on various firm reporting choices, there is much less evidence on how managers' personal characteristics influence the formation of their styles. Both Ge et al. (2011) and Dyreng et al. (2010) find little evidence of a relation between observable manager characteristics (e.g., gender, age and education) and the extent to which managers make aggressive accounting/tax choices.[29] The results of our prior analysis, however,

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[29] Bamber et al. (2010) does find some evidence on the impact of military and educational background on management forecast characteristics, although results vary across the different forecast properties. However, because this study examines a variety of forecast properties – including frequency, accuracy, bias, precision, and direction of news – the underlying cognitive characteristics associated with their measures of style are likely varied (e.g., optimism is not likely the cognitive characteristic driving manager-specific forecast accuracy). The variable most closely related to our tone measure is forecast bias. They find one manager-specific characteristic associated

are stronger than those in prior studies (i.e., in terms of the percentage of significant managers and incremental R^2's), suggesting that the choice of language is likely to be particularly prone to the impact of management style. Thus our study provides a relatively stronger setting in which to examine the impact of observable managerial characteristics on the formation of an optimistic managerial style.

5.1 Measures and predictions

We examine three dimensions of manager characteristics – gender, age, and experiences. Experiences are divided into three categories: 1) educational, 2) career-related, and 3) charitable involvement. We next discuss the measures we use and our predictions for each.

A substantial body of literature in sociology and psychology suggests that women tend to be less optimistic, less overconfident, and more risk averse than men (Maccoby and Jacklin, 1974, Halpern, 2000; Prince, 1993; Lundeberg, Fox, and Puncochar, 1994; Fellner and Maciejovsky, 2007).[30] We therefore expect female managers to use less optimistic language in conference calls than male managers. We define the variable *WOMEN* as equal to one if the manager is a woman and zero otherwise.

It is also well-documented that in the psychology literature that risk aversion increases with age (e.g., Cohn, Lewellen, Lease, and Schlarbaum, 1975; Palsson 1996). Therefore, if older managers are more risk-averse, we predict that older managers will be less likely to make

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with forecast bias: having a finance or accounting background. Thus, the evidence in Bamber et al. (2010) is equally limited.

[30] Note that we do not make a distinction between optimism, over-confidence and risk-aversion. Any of these three cognitive characteristics potentially lead to the use of more optimistic language in conference calls. Over-confidence, which refers to one's "assuredness" about one's own judgments (Reber, 1995), may lead to the use of more optimistic language because overconfident managers may overestimate their ability to improve firm performance in the future. In fact, Ben-David, Graham and Harvey (2006) find evidence consistent with over-confidence being related to optimism in that overconfident managers tend to hold optimistic views about the future of the U.S. economy. In addition, because being overly optimistic in disclosures could be costly to firms and managers in terms of legal costs (Rogers et al. 2010) as well as reputational costs, risk-averse managers are likely to make less optimistic language choices than risk-seeking managers. We believe it is beyond the scope of this paper to distinguish between these three underlying cognitive characteristics.

optimistic statements than younger managers. *AGE* is defined as the age of the manager as of the year of the conference call.

Prior experiences – whether educational, career-related or other – potentially explain variation in managerial style either because they reflect managers' innate cognitive characteristics (i.e., self-selection) or because these experiences directly affect and have long-lasting impact on managers' cognitive characteristics. With regard to education, we examine three particular backgrounds: whether the manager has 1) an accounting or finance undergraduate or graduate degree (*ACC_FIN_EDU*), 2) an MBA (*MBA*), or 3) a juris doctorate degree (*GRAD_LAW*). Overall, the evidence in the existing literature is limited and occasionally mixed regarding the connection between educational background and specific cognitive characteristics. Graham, Harvey, and Puri (2009) suggest that the individuals who choose to obtain an MBA are likely more conservative because aggressive individuals might consider an MBA degree unnecessary, while Chevalier and Ellison (1999) document that mutual fund managers with MBAs appear to take more risk by holding portfolios with higher systematic risk. Bamber et al. (2010) provide some evidence that managers who have accounting or finance backgrounds tend to be more conservative in their forecasts of earnings. Finally, a recent study by Goodman-Delahunty et al. (2010) finds that on average lawyers are overconfident in predicting the likelihood that they would meet their litigation goals. However, because this evidence is rather limited (and occasionally mixed), we do not state directional predictions with regard to the effect of educational experiences on the use of optimistic language.

In terms of career experiences, we examine both when a manager began his career and whether he/she worked in particular industries. Recent work by Schoar and Zuo (2011) find that CEOs who began their career during a recession tend to make more conservative corporate

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decisions (e.g., lower capital and R&D expenditures, lower leverage, etc.). Beginning one's career in a recession could lead one to become less optimistic, less overconfident, and more risk averse; therefore, we expect managers who start their careers during recession periods will use less optimistic language in conference calls. Following Schoar and Zuo (2011), we define an indicator variable (*RECESSION*) equal to one if the manager enters the labor force (based on year of birth plus 22 years) during a recession year. We define a recession year as one with more than six recession months, where recession months are defined as the month following a business cycle peak to the month of a business cycle trough (as defined by the National Bureau of Economic Research).

The three particular industries we identify and code when examining managers' prior work experience are audit, consulting and investment banking. These industries were chosen largely because classifying firms into these categories based on the firm names listed in the managers' biography was relatively straightforward. Overall, there is limited evidence in the prior literature regarding the impact of particular prior work experiences on optimism, over-confidence, or risk-aversion; therefore, we do not provide specific directional predictions related to these variables. We define three indicator variables equal to one if the manager has worked as an auditor at an accounting firm (*AUDITOR*), worked for a consulting firm (*CONSULTING*), or an investment bank (*INVESTBANK*), and zero otherwise.

Our final experience-related variable is involvement in a charitable organization. Prior research suggests a positive relation between dispositional optimism and volunteerism (Mellor et al. 2008). In addition, prior studies have shown both that happier people are more likely to engage in charitable behavior and that charitable activities increase happiness (Anik et al. 2009). Since psychology studies have also suggested a positive correlation between happiness and

optimism (Cummins and Nistico 2002), we expect charitable activities to be associated with optimism. Thus, we expect managers involved in charitable organizations to use more optimistic language during conference calls. We code the variable *CHARITY* equal to one if the manager is involved in a charitable organization (excluding trade or industry groups) and zero otherwise.

5.2   Empirical analysis and results

To analyze how manager characteristics impact language choices, we estimate the following model:

$$RESIDUAL_{it} = \gamma_0 + FIRM_i + YEAR_t + QTR_k + \gamma_1 WOMAN_{it} + \gamma_2 AGE_{it} + \gamma_3 RECESSION_{it}$$
$$+ \gamma_4 CHARITY_{it} + \gamma_5 MBA_{it} + \gamma_6 ACC\_FIN\_EDU_{it} + \gamma_7 GRAD\_LAW_{it} + \gamma_8 AUDITOR_{it} \qquad (4)$$
$$+ \gamma_9 CONSULTING_{it} + \gamma_{10} INVESTBANK_{it} + \varepsilon_{it}$$

The model in equation (4) is similar to the analysis conducted in Table 6 except that we replace our manager-specific indicator variables with our manager characteristic variables. The dependent variable is residual tone ($RESIDUAL_{it}$), the same dependent variable in equation (2). All data on manager characteristics are gathered from Boardex and Capital IQ. We read through each biography document and combine the information from both databases. We collect manager-specific data for both the 121 manager we track across time and for the managers of our filler year observations. The inclusion of the filler managers allows us to properly control for firm effects through the inclusion of firm indicator variables.

Table 7 Panel A reports descriptive statistics of manager characteristics. Overall, we collected data for 212 CEOs and 325 CFOs. CEOs and CFOs are likely to exhibit systematic differences in their background. In addition, because CEOs and CFOs are often responsible for different aspects of the conference call, it is possible their tone measures will differ due to content differences. Therefore, we analyze the associations between manager characteristics and manager styles for CEOs and CFOs separately. Only a small proportion of the managers in our

sample are women: five (six) percent for CEOs (CFOs). CFOs appear to younger than CEOs on average, with a mean age of 49 versus 53 for CEOs. With respect to education, 43 percent of CFOs have a finance or accounting degree and 47 percent received MBA degrees. These proportions are small for CEOs: 17 percent with a finance or accounting degree and 36 percent with an MBA. Not surprisingly, a much greater percent of CFOs have worked as auditors (41 percent) relative to CEOs (14 percent). Finally, 60 percent of CEOs are involved in charitable organizations, while only 26 percent of CFOs are similarly involved.

We next estimate Equation (4) using our three tone measures to examine the incremental effect of each manager characteristic on tone. Because of the high correlations between our education variables and our work experience variables, we run our regressions including these sets of variables independently, resulting in two sets of regressions for each tone measure.[31]

Panel B of Table 7 reports the multivariate regression results for CEOs. This table suggests three main findings. First, we find a significantly negative coefficient on *WOMEN* in five of the six specifications, suggesting that women CEOs tend to be less optimistic with their language choices. Second, the coefficient on *RECESSION* is significantly negative across all columns, indicating that CEOs who begin their careers in a recession year use less optimistic language. This result complements the evidence found in Schoar and Zuo (2011). Third, it appears that CEOs who are involved in charitable organizations speak more optimistically in conference calls than those who are not. The coefficient on *CHARITY* is positive and significant in five of the six specifications. This finding is consistent with prior evidence in psychology studies that suggest a positive relation between optimism and volunteerism.

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[31] For example, the Pearson correlation between *ACC_FIN_EDU* and *AUDITOR* is 0.75 for CEOs (not tabulated). It is reasonable to expect that most auditors have had an accounting degree.

We do not find *AGE* to be significantly associated with any tone variable. We also do not find any significant effects for our education and work experience variables except for investment banking experience. Interestingly, *INVESTBANK* is significantly negatively associated with all three tone variables (Columns 4-6). It is possible that CEOs with investment banking experience are more sensitive to the costs associated with missing expectations by using optimistic language during a conference call.

The regression results for CFOs are reported in Panel C of Table 7. We again find that women CFOs tend to use less optimistic language in conference calls. We also find a significantly negative relation between *RECESSION* and the use of optimistic language by CFOs during conference calls, although the results are somewhat weaker than those for CEOs. We find strong results for *CHARITY* – CFOs involved in charities use much more optimistic language during conference calls than those who are not similarly involved. These results are even stronger than those for CEOs. Finally, similar to the results for CEOs, the coefficient on *INVESTBANK* is significantly negative for all three tone variables. In addition, there is some evidence of CFOs with consulting experience being more optimistic in their language choices, perhaps due to the business development aspects of their prior careers.

Overall, the results presented in Table 7 are much stronger than those documented in prior research. Our findings suggest that certain observable managerial characteristics play a strong role in explaining language choices and therefore management styles.

[Table 7]

6.   Additional Analyses

6.1   *Sample Managers' Effect on Overall Tone*

The fact that managers exhibit specific "styles" in the way they portray their firms' performance, combined with the fact that the market appears to react to managers' language choice, suggests that managerial "style" can impact market reactions to firms' disclosures. However, it is important to note that the market reactions to tone demonstrated in Table 4 represent market reactions to the tone of the entire text of the call and not just the comments of a specific manager.   Thus, it is not necessarily the case that a manager with an optimistic or pessimistic style will influence the market reaction to a firm's conference call, unless the manager influences the overall tone of the language used by all participants on the call.

To provide evidence on this issue, we perform the following analysis. Based on our estimation of equation (3) (reported in Table 6), we identify managers whose fixed effect is significantly positive (negative) at the ten percent level and deem these managers "optimistic" ("pessimistic") managers. We then calculate the residual tone of comments made by all managers on the call ($TONE\_i^{ALL}$) for all available quarters of the second firm the manager works ("firm 2"), including the quarters prior to the managers arrival. Residual tone is estimated as the residual from a regression of $TONE\_i^{ALL}$ on our current and future performance measures as well as firm, year, and quarter dummy variables. We then plot the average residual of $TONE\_i^{ALL}$ for our optimistic and pessimistic group of managers in each quarter leading up to and after the arrival of the manager. If the managers in our sample have an effect on the overall tone of the conference call, we should see higher overall residual tones for the optimistic group of managers relative to the pessimistic group of managers, *after the manager arrives at the firm*. Prior to the manager's arrival, these firms (presumably) were equally likely to have optimistic or

pessimistic managers holding the same position of the manager in our sample (CEO or CFO) and therefore, there should be no distinction between the two groups prior to our manager's arrival.[32]

Figure 1 presents the time series plots for each of our three tone measures – $TONE\_D^{ALL}$, $TONE\_H^{ALL}$, $TONE\_LM^{ALL}$. Consistent with our managers having an effect on the overall tone of the conference call, we see a clear separation between optimistic and pessimistic managers in the quarters after the manager arrives at the firm. $TONE\_LM^{ALL}$, in particular, shows a clear separation between the two groups in quarter +1 – the first quarter in which our sample manager joins the firm. $TONE\_H^{ALL}$, in contrast, shows some separation prior to the manager joining the firm and the separation between the two groups using $TONE\_D^{ALL}$ is not as apparent until quarter t+3. Still, for all three measures, the average difference between the two groups in the quarters after the manager's arrival is significantly greater than the average difference between the two groups prior to the manager's arrival.[33] This evidence suggests that the arrival of an optimistic or pessimistic manager influences the overall tone of the language used by all participants on the call, suggesting that an individual manager can impact the market's reaction to a firm's conference call.

6.2   Manager Effects on Earnings Announcement Returns

The evidence in the paper thus far indicates that 1) the market reacts to the overall tone of the language used during the conference call, 2) managers exhibit specific language "styles" that

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[32] These graphs are similar to those provided in Dyreng et al. (2010). It should be noted, however, that the effect being plotted is somewhat mechanical in that the classification of optimistic and pessimistic managers is based on a managers' tone at all the firms where the manager works, including firm 2 (the firm whose overall tone we are plotting). Since the manager's tone is part of the overall tone measure, we would expect some difference based on this fact. However, the graphs display the extent to which the specific manager in our sample influences the *overall* tone measure.

[33] In untabulated analysis, we regressed each of our residual tone measures ($RESIDUAL\_TONE\_i^{ALL}$) on 1) an indicator variable for our optimistic managers (*OPT*), 2) an indicator variable for quarters after the manager joins the firm (*POST*), and 3) an interaction between OPT and POST. The coefficient on the interaction is highly significant (p's < 0.001) using all three measures, indicating that the difference in the overall tone of the conference call between firms hiring optimistic and pessimistic managers is larger in the quarters after the manager joins the firm.

are apparent across the various firms for which the manager works and 3) manager specific "styles" impact the overall tone of the language used during conference calls. One implication of these findings should be that the market reaction to conference calls will also exhibit a manager-specific effect. That is, that there will be a systematic positive or negative market reaction to conference calls across the various firms for which the manager works.

We test this implication by conducting similar tests to those conducted in Section 4 and presented in Table 6 with respect to manager-specific tone. Specifically, we run the following regression (analogous to equation 3):

$$CAR_{it} = \alpha_0 + \alpha_1 MBE_{it} + \alpha_2 SURP_{it} + \alpha_3 LOSS_{it} + \alpha_4 RETURN_{it} + \alpha_5 GROWTH_{it} + \alpha_6 ROA_{it}$$
$$+ \alpha_7 ROA_{it+1} + \alpha_8 ROA_{it+2} + \alpha_9 ROA_{it+3} + \alpha_{10} ROA_{it+4} + \varepsilon_{it} \tag{5}$$

We then capture the residual from this regression (labeled "residual CAR") and regress this measure on firm, year, quarter, and manager effects (similar to equation 2):

$$RESIDUAL\_CAR_{it} = \beta_0 + FIRM_i + YEAR_t + QTR_k + MANAGER_j + \varepsilon_{it} \tag{6}$$

As before, the manager fixed effects ($MANAGER_j$) capture commonalities in residual CAR across the various firms that a manager works and that are different from the average residual CAR that occurs for a given firm across time and the average residual CAR occurring during a given year or fiscal quarter across firms. We then perform an F-test for the joint significance of the manager indicator variables to determine whether manager specific factors influence the market reaction to conference calls.

Results of this analysis are presented in Table 8, Panel A. The first row reports the adjusted R^2 from a base regression excluding the manager indicator variables (i.e., regressing residual CAR on firm, year and quarter indicator variables only). The second row reports the F-statistic and associated p-value from a test of the joint significance of the manager fixed effect, as well as the adjusted R^2 from the full regression. The adjusted R^2 from the base regression is

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1.7%, which increases to 2.5% with the addition of manager fixed effects. The F-test of the joint significance of the manager fixed effects is significant at less than one percent, suggesting that manager-specific effects are evident in the market reactions to conference calls. However, we note that strength of the manager effect over CAR is far less than the strength of the manager effect over language as demonstrated in Table 6. The increase in R^2's is less than one percent, far smaller than the increases related to tone (average increase of 7 percent). This is perhaps not surprising given that 1) language is only one of many determinants of market reactions to conference calls and 2) we are measuring the commonality induced by only one particular manager on the call, while the market likely reacts to the language of all participants on the call. Nevertheless, the results are consistent with manager-specific factors inducing a commonality in the market's reactions to a firm's conference call.

Presumably, if the manager-specific CAR effect is driven by manager-specific tone, the two manager-specific effects should be correlated. Panel B of Table 8 reports a correlation matrix of our manager-specific tone effects with our manager-specific CAR effects. Spearman (Pearson) correlations are shown above (below) the diagonal. We find a positive and significant correlation between our manager-specific CAR effect and our manager-specific tone effect but only using the L&M measure of tone. Thus, we find some evidence consistent with our documented manager-specific CAR effect being driven by manager-specific language choices, although the results are not consistent across all measures of tone.

7.   Conclusion

This paper examines the impact of manager-specific factors or "style" on the tone used in conference calls. We find evidence that managerial "style" plays a significant role in the

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optimistic/pessimistic tone of earnings related conference calls. This evidence adds to our understanding of the determinants of tone in conference calls and suggests that tone does not simply reflect a managers' private information about future performance. Rather, the tone used in conference calls also reflects managers' personal styles. Moreover, our evidence suggests that these "styles" are systematically related to certain observable, manager-specific characteristics and prior experiences (e.g., gender, early career experiences and charitable involvement).

We also find that the market reacts to the overall tone in conference calls, even after controlling for current and future performance. Moreover, we find that individual managers' styles affect the overall tone in conference calls, suggesting that a manager's style can impact the market's reaction to one of the most important disclosure events of a firm. We also document more direct evidence of a manager's effect on market reactions to conference calls by demonstrating a manager-specific effect on returns around the conference call. Thus, our study adds to our understanding of the market's ability to detect and incorporate information about manager-specific style differences.

Overall, our study contributes to our understanding of both the determinants of and market reactions to tone as well as to our understanding of the effect of managerial style on disclosure choices.

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Table 1
Variable definitions

Variable	Definition
Conference call tone measures	
TONE_D	the difference between the optimistic words and the pessimistic words spoken by the manager, scaled by the total words spoken by the manager, based on wordlists from DICTION
TONE_H	the difference between the optimistic words and the pessimistic words spoken by the manager, scaled by the total words spoken by the manager, based on wordlists from Henry (2008)
TONE_LM	the difference between the optimistic words and the pessimistic words spoken by the manager, scaled by the total words spoken by the manager, based on wordlists from Loughran and McDonald (2009)
$TONE^{ALL}$	$TONE\_D$, $TONE\_H$, and $TONE\_LM$, measured over the entire conference call; that is, optimistic words less pessimistic words in the full conference call transcript, scaled by total words in the full transcript.
Manager characteristics	
WOMAN	an indicator variable that is equal to one if the manager is a woman and zero otherwise
AGE	the age of the manager
RECESSION	an indicator variable equal to one if the manager enters the labor force during a recession (i.e., year of birth plus 22 years).
CHARITY	an indicator variable equal to one if the manager is involved in a charitable organization and zero otherwise
MBA	an indicator variable, equal to one if the manager has an MBA and zero otherwise
ACC_FIN_EDU	an indicator variable equal to one if the manager has an undergraduate or graduate degree in accounting or finance and zero otherwise
GRAD_LAW	an indicator variable equal to one if the manager has juris doctorate degree and zero otherwise
AUDITOR	an indicator variable equal to one if the manager has worked as an auditor at an accounting firm and zero otherwise
CONSULTING	an indicator variable equal to one if the manager has worked for a consulting firm and zero otherwise
INVESTBANK	an indicator variable equal to one if the manager has worked for an investment bank, and zero otherwise
Other variables	
MBE	an indicator variable equal to one if the firm meets or beats the mean consensus analyst forecast for a given quarter (EPS ≥ Meanest), where Meanest is the last consensus forecast for the quarter)
SURP	the earnings surprise measured as the difference between quarterly EPS and the mean consensus analyst forecast deflated by stock price at the beginning of the quarter (EPS_t - $Meanest_t$) / $PRCCQ_{t-1}$
LOSS	an indicator variable equal to one for firms reporting negative earnings in the fiscal quarter and zero otherwise (NIQ < 0)
RETURN	the firm's value weighted market-adjusted stock return during the fiscal quarter

GROWTH	sales growth, defined as percentage change in total sales relative to the same quarter last year: $(saleq_t - saleq_{t-4})/saleq_{t-4}$
ROA	return on assets ratio, defined as earnings before extraordinary times deflated by beginning total assets (IBQ_t / ATQ_{t-1})
ROA_{t+1}	one-quarter ahead return on assets ratio
ROA_{t+2}	two-quarter ahead return on assets ratio
ROA_{t+3}	three-quarter ahead return on assets ratio
ROA_{t+4}	four-quarter ahead return on assets ratio
CAR	The value weighted market-adjusted return for the two-day window $(0, +1)$ around the earnings conference call date

Table 2
Sample selection and sample description

Panel A: Sample Selection

	Firm-manager matched sample		
	Number of firm-quarters	**Number of distinct firms**	**Number of distinct CEOs and CFOs**
Manager-firm matched sample for CEOs and CFOs that worked for at least two firms for one year from Execucomp (years 2002 to 2009) that have total assets, sales, common shares outstanding, income before extraordinary items, and end of quarter stock price.	3,326	395	206
Less: Firm-quarters that have missing conference call transcripts and where managers do not participate at conference call	(436)	(72)	(32)
Less: Firm-quarters with less than two filler quarters and managers who worked in a firm for which there are fewer than two quarters' conference call transcripts	(792)	(98)	(53)
Manager-firm matched sample	**2,098**	**225**	**121**

Table 2
Sample selection and sample description (continued)

Panel B: Frequency of managers based on the number of quarters at each firm

N of quarters in each firm	N of manager-firm pairs	Percentage (%)
2	18	7.41
3	26	10.7
4	19	7.82
5	23	9.47
6	22	9.05
7	20	8.23
8	26	10.7
9	15	6.17
10	3	1.23
11	8	3.29
12	8	3.29
13	6	2.47
14	9	3.7
15	3	1.23
16	6	2.47
17	5	2.06
18	3	1.23
19	7	2.88
20 and above	16	6.57
Total	**243**	100

Panel C: Frequency of firms based on the number of different managers

N of different managers	Freq of firms	Percentage (%)	N of manager-firm pairs
1	208	92.4	208
2	16	7.1	32
3	1	0.5	3
Total	**225**	100	**243**

Table 2
Sample selection and sample description (continued)

Panel D: Frequency of managers based on the number of changes

N of changes	Freq of managers	Percentage (%)	N of manager-firm pairs
1	120	99	240
2	1	1	3
Total	**121**	100	**243**

Panel A of Table 2 presents our sample selection process. Panel B presents the frequency of the managers for the manager-firm matched sample based on how many quarters they worked for each firm. Panel C presents the frequency of the firms for the manager-firm matched sample, based on how many different managers have worked with each firm. Panel D presents the frequency of managers for the manager-firm matched sample, based on how many times they have changed their jobs.

Table 3
Descriptive Statistics

Panel A. Variables used in the regressions

Variable	N	Min	Q1	Mean	Median	Q3	Max	Std. Dev.
ASSETS	4704	119.27	886	16,858	2,228	9,696	287,864	42,711
ROA	4704	-0.1181	0.0021	0.0088	0.0088	0.0188	0.0810	0.0250
ROA_{t+1}	4696	-0.1238	0.0020	0.0087	0.0088	0.0187	0.0810	0.0252
ROA_{t+2}	4668	-0.1315	0.0020	0.0085	0.0088	0.0187	0.0789	0.0258
ROA_{t+3}	4627	-0.1275	0.0022	0.0086	0.0089	0.0187	0.0789	0.0256
ROA_{t+4}	4579	-0.1237	0.0021	0.0087	0.0089	0.0189	0.0789	0.0252
SURP	4149	-0.0696	-0.0003	-0.0002	0.0005	0.0019	0.0247	0.0096
MBE	4156	0	0	0.7295	1	1	1	0.4442
LOSS	4704	0	0	0.1954	0	0	1	0.3965
RETURN	4873	-0.3857	-0.1015	0.0024	-0.0043	0.0912	0.4914	0.1730
GROWTH	4695	-0.5237	-0.0245	0.1022	0.0705	0.1771	1.3762	0.2693
TONE_D	5036	-0.3057	0.8900	1.5372	1.4752	2.0996	4.0363	0.8971
TONE_H	5036	-0.6300	1.1858	1.9335	1.8897	2.6370	4.8373	1.0938
TONE_LM	5036	-1.4794	-0.0013	0.5742	0.5161	1.1161	2.9036	0.8676
$TONE\_D^{ALL}$	4936	0.6744	1.5128	1.8761	1.8553	2.2189	3.2064	0.5264
$TONE\_H^{ALL}$	4936	0.3532	1.3055	1.7568	1.7283	2.1640	3.5444	0.6505
$TONE\_LM^{ALL}$	4936	-0.9965	-0.0326	0.3179	0.3183	0.6573	1.6988	0.5366
CAR	4630	-0.5453	-0.0328	0.0056	0.0026	0.0443	0.6029	0.0832

Table 3
Descriptive Statistics (continued)

Panel B. Comparison with Compustat

Variable	Our sample		Compustat		Difference in mean (sample vs. Compustat)
	Mean	Median	Mean	Median	
ASSETS	16,858.12	2,228.08	3,592.74	207.37	13,265.38***
ROA	0.0088	0.0088	-0.0345	0.0025	0.0433***
ROA_{t+1}	0.0087	0.0088	-0.0345	0.0025	0.0432***
ROA_{t+2}	0.0085	0.0088	-0.0345	0.0025	0.0430***
ROA_{t+3}	0.0086	0.0089	-0.0344	0.0025	0.0430***
ROA_{t+4}	0.0087	0.0089	-0.0336	0.0025	0.0423***
SURP	-0.0002	0.0005	-0.0028	0.0003	0.0026***
MBE	0.7295	1	0.6540	1	0.0755***
LOSS	0.1954	0	0.4161	0	-0.2208***
RETURN	0.0024	-0.0043	0.0023	-0.0068	0.0001
GROWTH	0.1022	0.0705	0.1339	0.0685	-0.0317***

"Our sample" refers to the set of firm-quarter observations for firms that have at least one manager observed in multiple firms. This sample includes observations for these firms in the quarters in which they have other managers that we do not observe in multiple firms. "Compustat" is a comparison sample of all listed firms on Compustat over the period 2002 to 2009. *ASSETS* is total assets of a firm-quarter observation. All other variables are described in Table 1. Except *RETURN* for Compustat universe, which is winsorized at 2% and 98%, each of the continuous variables is winsorized at 1% and 99% to mitigate outliers.

Table 4
Stock market reaction to the tone of conference calls

$$CAR_{it} = \gamma_0 + \gamma_1 MBE_{it} + \gamma_2 SURP_{it} + \gamma_3 LOSS_{it} + \gamma_4 RETURN_{it} + \gamma_5 GROWTH_{it} + \gamma_6 ROA_{it}$$

$$+ \gamma_7 ROA_{it+1} + \gamma_8 ROA_{it+2} + \gamma_9 ROA_{it+3} + \gamma_{10} ROA_{it+4} + \gamma_{11} TONE^{ALL}{}_{it} + \varepsilon_{it}$$

	Predicted Sign	Dependent Variable: *CAR[0,+1]*		
		(1)	(2)	(3)
		TONE=TONE_D	*TONE=TONE_H*	*TONE=TONE_LM*
Intercept		-0.044***	-0.035***	-0.028***
		[0.00]	[0.00]	[0.00]
MBE	+	0.0389***	0.0395***	0.0390***
		[0.00]	[0.00]	[0.00]
SURP	+	0.9411***	0.9413***	0.9173***
		[0.00]	[0.00]	[0.00]
LOSS	?	0.0112**	0.0107**	0.0109**
		[0.02]	[0.02]	[0.02]
RETURN	?	-0.035***	-0.035***	-0.037***
		[0.00]	[0.00]	[0.00]
GROWTH	+	0.0015	0.0006	0.0013
		[0.39]	[0.46]	[0.40]
ROA	?	-0.130	-0.138*	-0.143*
		[0.10]	[0.08]	[0.07]
ROA$_{t+1}$	?	0.099	0.096	0.095
		[0.15]	[0.17]	[0.17]
ROA$_{t+2}$	?	-0.015	-0.013	-0.017
		[0.82]	[0.85]	[0.81]
ROA$_{t+3}$	?	0.053	0.044	0.047
		[0.44]	[0.52]	[0.49]
ROA$_{t+4}$	?	0.1257	0.1255	0.1248
		[0.07]*	[0.07]*	[0.07]*
TONE^{ALL}	+	0.010***	0.006***	0.0104***
		[0.00]	[0.01]	[0.00]
Number of observations		3,730	3,730	3,730
Adj.R^2		8.13%	7.95%	8.15%

This table reports the regression results of the stock market reaction regression for the overall tone during conference calls. P-values are based on one-tailed tests (except the intercept, *LOSS, RETURN, ROA* and future *ROAs*) and are reported in the brackets below the coefficient estimates. Significance at the 10%, 5%, and 1% levels is shown with an *, **, and *** respectively. All the variables are defined in Table 1. Each of the continuous variables is winsorized at 1% and 99% to mitigate outliers.

Table 5
Tone of earnings conference calls and firm performance

$$TONE_{it} = \alpha_0 + \alpha_1 MBE_{it} + \alpha_2 SURP_{it} + \alpha_3 LOSS_{it} + \alpha_4 RETURN_{it} + \alpha_5 GROWTH + \alpha_6 ROA_{it}$$
$$+ \alpha_7 ROA_{it+1} + \alpha_8 ROA_{it+2} + \alpha_9 ROA_{it+3} + \alpha_{10} ROA_{it+4} + \varepsilon_{it}$$

		Dependent Variable		
	Predicted sign	*TONE_D*	*TONE_H*	*TONE_LM*
Intercept		1.44***	1.63***	0.43***
		[0.00]	[0.00]	[0.00]
MBE	+	0.17***	0.31***	0.20***
		[0.00]	[0.00]	[0.00]
SURP	+	1.64	-0.77	3.05**
		[0.17]	[0.65]	[0.03]
LOSS	-	-0.21***	-0.22***	-0.25***
		[0.00]	[0.00]	[0.00]
RETURN	+	0.11*	0.30***	0.30***
		[0.08]	[0.00]	[0.00]
GROWTH	+	-0.01	0.37***	0.02
		[0.55]	[0.00]	[0.35]
ROA	+	0.17	2.27***	1.79***
		[0.42]	[0.01]	[0.01]
ROA$_{t+1}$	+	-0.06	3.64***	1.82***
		[0.54]	[0.00]	[0.01]
ROA$_{t+2}$	+	0.007	2.19***	1.37**
		[0.50]	[0.01]	[0.02]
ROA$_{t+3}$	+	0.13	0.87	-0.07
		[0.43]	[0.15]	[0.54]
ROA$_{t+4}$	+	0.19	-0.34	0.23
		[0.40]	[0.65]	[0.37]
Number of observations		3,996	3,996	3,996
Adj.R^2		2.19%	9.17%	7.53%

This table reports the regression results for the first stage regression (equation one). P-values are based on one-tailed tests and are reported in the brackets below the coefficient estimates. Significance at the 10%, 5%, and 1% levels is shown with an *, **, and *** respectively. All the variables are defined in Table 1. Each of the continuous variables is winsorized at 1% and 99% to mitigate outliers.

Table 6
Manager Effects on Residual Tone

$$RESIDUAL_{it} = \beta_0 + FIRM_i + YEAR_t + QTR_k + MANAGER_j + \varepsilon_{it}$$

Panel A: F-tests on fixed effects

	F-statistics	N	Adj. R^2
RESIDUAL_TONE_D		3,996	37%
RESIDUAL_TONE_D	5.25 (<.001, 114)	3,996	44%
RESIDUAL_TONE_H		3,996	36%
RESIDUAL_TONE_H	4.23 (<.001, 114)	3,996	42%
RESIDUAL_TONE_LM		3,996	34%
RESIDUAL_TONE_LM	4.89 (<.001, 114)	3,996	41%

Panel B: Percentage of significant manager fixed effect estimates

	at the 5% level	at the 10% level
EFFECT_TONE_D	0.33	0.43
EFFECT_TONE_H	0.25	0.36
EFFECT_TONE_LM	0.30	0.41

Panel C: Summary Statistics on the manager fixed effect estimates

	Q1	Mean	Median	Q3
EFFECT_TONE_D	-0.38	-0.023	0.016	0.36
EFFECT_TONE_H	-0.39	0.002	-0.010	0.41
EFFECT_TONE_LM	-0.36	0.016	0.012	0.32

Panel A of this table reports the test results for manager fixed effects on the residual tone (equation two). For each dependent variable, the fixed effects included are row 1: firm, year, and quarter fixed effects; row2: firm, year, quarter and manager fixed effects. Reported is the F-test for the joint significance of the manager fixed effects. For each F-test we report the value of the F-statistic and, in parentheses, the associated p-value and number of constraints. Also reported are the number of observations and Adj. R^2s for each regression. Panel B reports the frequency of the significant manager fixed effects (at the 5% level and the 10% level) estimated in Panel A. Panel C reports mean, median, lower quartile, and upper quartile values of the estimated manager fixed effects.

Table 7
Manager characteristics and residual tone of earnings conference calls

Panel A: Summary Statistics

Variable		CEO Sample								CFO Sample						
	N	Min	Q1	Mean	Med	Q3	Max	Std. Dev.	N	Min	Q1	Mean	Med	Q3	Max	Std. Dev.
TONE_D	212	-0.22	1.45	1.87	1.89	2.28	5.68	0.72	325	-0.61	0.84	1.24	1.13	1.58	6.79	0.70
TONE_H	212	-0.56	1.66	2.16	2.27	2.64	4.43	0.77	325	-0.87	1.06	1.61	1.58	2.17	4.75	0.87
TONE_LM	212	-1.51	0.40	0.86	0.90	1.29	3.30	0.71	325	-1.48	-0.09	0.30	0.30	0.58	2.60	0.61
WOMAN	212	0	0	0.05	0	0	1	0.22	325	0	0	0.06	0	0	1	0.25
AGE	212	32	48	53	53	58	77	7.05	319	32	44	49	49	53	67	6.59
RECESSION	212	0	0	0.19	0	0	1	0.40	319	0	0	0.16	0	0	1	0.36
CHARITY	212	0	0	0.60	1	1	1	0.49	325	0	0	0.26	0	1	1	0.44
ACC_FIN_EDU	212	0	0	0.17	0	0	1	0.37	325	0	0	0.43	0	1	1	0.50
MBA	212	0	0	0.36	0	1	1	0.48	325	0	0	0.47	0	1	1	0.50
GRAD_LAW	212	0	0	0.10	0	0	1	0.30	325	0	0	0.03	0	0	1	0.16
AUDITOR	212	0	0	0.14	0	0	1	0.34	325	0	0	0.41	0	1	1	0.49
CONSULTING	212	0	0	0.06	0	0	1	0.23	325	0	0	0.08	0	0	1	0.28
INVESTBANK	212	0	0	0.14	0	0	1	0.35	325	0	0	0.10	0	0	1	0.31

All the variables are defined in Table 1.

Table 7
Manager characteristics and residual tone of earnings conference calls (continued)

Panel B: CEO Characteristics

	Predicted Sign	CEO characteristics including education			CEO characteristics including work experience		
		(1) RESIDUAL_ TONE_D	(2) RESIDUAL_ TONE_H	(3) RESIDUAL_ TONE_LM	(4) RESIDUAL_ TONE_D	(5) RESIDUAL_ TONE_H	(6) RESIDUAL_ TONE_LM
WOMAN	-	-0.23** [0.02]	-0.50*** [0.00]	-0.16* [0.07]	-0.20** [0.04]	-0.40*** [0.00]	-0.08 [0.23]
AGE	-	-0.004 [0.22]	-0.003 [0.25]	0.002 [0.68]	-0.001 [0.38]	-0.002 [0.37]	0.003 [0.72]
RECESSION	-	-0.27*** [0.00]	-0.22*** [0.00]	-0.17*** [0.01]	-0.31*** [0.00]	-0.24*** [0.00]	-0.22*** [0.00]
CHARITY	+	0.11* [0.06]	0.10* [0.10]	0.06 [0.17]	0.11** [0.05]	0.13** [0.04]	0.09* [0.07]
MBA	?	-0.05 [0.37]	0.05 [0.46]	-0.01 [0.93]			
ACC_FIN_EDU	?	0.07 [0.40]	0.05 [0.56]	0.16 [0.06]			
GRAD_LAW	?	0.09 [0.44]	-0.11 [0.34]	-0.08 [0.47]			
AUDITOR	?				-0.01 [0.96]	-0.12 [0.27]	-0.03 [0.78]
CONSULTING	?				-0.10 [0.57]	-0.09 [0.65]	-0.18 [0.30]
INVESTBANK	?				-0.38*** [0.00]	-0.51*** [0.00]	-0.35*** [0.00]
Firm Fixed Effects		Yes	Yes	Yes	Yes	Yes	Yes
Year and Quarter Fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Number of observations		1,624	1,624	1,624	1,624	1,624	1,624
Adj.R^2		29.56	38.58	35.14	30.11	39.39	35.55

***, **, * indicate statistical significance at the 0.01, 0.05, 0.10 level, respectively, under one-tailed tests for variables with predicted signs and two-tailed tests for variables without predicted signs. All the variables are defined in Table 1.

Table 7
Manager characteristics and residual tone of earnings conference calls (continued)

Panel C: CFO Characteristics

	Predicted Sign	CFO characteristics including education			CFO characteristics including work experience		
		(1) RESIDUAL_ TONE_D	(2) RESIDUAL_ TONE_H	(3) RESIDUAL_ TONE_LM	(4) RESIDUAL_ TONE_D	(5) RESIDUAL_ TONE_H	(6) RESIDUAL_ TONE_LM
WOMAN	-	-0.25*** [0.00]	0.07 [0.74]	-0.11* [0.07]	-0.22*** [0.00]	0.07 [0.74]	-0.08 [0.14]
AGE	-	-0.0005 [0.44]	0.00004 [0.50]	0.0005 [0.57]	-0.0001 [0.49]	0.002 [0.70]	0.001 [0.64]
RECESSION	-	-0.08* [0.06]	-0.11* [0.07]	-0.13*** [0.01]	-0.06 [0.12]	-0.08 [0.13]	-0.12*** [0.01]
CHARITY	+	0.29*** [0.00]	0.26*** [0.00]	0.29*** [0.00]	0.31*** [0.00]	0.27*** [0.00]	0.30*** [0.00]
MBA	?	0.01 [0.74]	0.01 [0.83]	0.16*** [0.00]			
ACC_FIN_EDU	?	0.08** [0.04]	0.02 [0.76]	0.07* [0.07]			
GRAD_LAW	?	0.43*** [0.00]	-0.22 [0.17]	0.20* [0.10]			
AUDITOR	?				-0.07* [0.08]	0.02 [0.75]	-0.10** [0.02]
CONSULTING	?				0.16** [0.02]	0.29*** [0.00]	0.25*** [0.00]
INVESTBANK	?				-0.39*** [0.00]	-0.19* [0.08]	-0.38*** [0.00]
Firm Fixed Effects		Yes	Yes	Yes	Yes	Yes	Yes
Year and Quarter Fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Number of observations		2,393	2,393	2,393	2,393	2,393	2,393
Adj.R^2		32.80	33.12	25.54	33.24	33.51	26.28

***, **, * indicate statistical significance at the 0.01, 0.05, 0.10 level, respectively, under one-tailed tests for variables with predicted signs and two-tailed tests for variables without predicted signs. All the variables are defined in Table 1.

Table 8
Manager Effects on Residual CAR

$$RESIDUAL_{it} = \beta_0 + FIRM_i + YEAR_t + QTR_k + MANAGER_j + \varepsilon_{it}$$

Panel A: F-tests on fixed effects

	F-statistics	N	Adj. R^2
RESIDUAL_CAR		3,994	1.74%
RESIDUAL_CAR	1.41 (.003, 114)	3,994	2.45%

Panel B: Correlation between Tone Effects and CAR effects

|	*EFFECT_TONE_D*	*EFFECT_TONE_H*	*EFFECT_TONE_LM*	*EFFECT_CAR*
EFFECT_TONE_D	1.000	**0.581**	**0.666**	0.018
		(<.0001)	*(<.0001)*	*(0.43)*
EFFECT_TONE_H	**0.605**	1.000	**0.686**	**0.126**
	(<.0001)		*(<.0001)*	*(0.09)*
EFFECT_TONE_LM	**0.673**	**0.744**	1.000	**0.240**
	(<.0001)	*(<.0001)*		*(0.01)*
EFFECT_CAR	-0.028	0.083	**0.152**	1.000
	(0.62)	*(0.19)*	*(0.05)*	

Panel A of this table reports the test results for manager fixed effects on the residual CAR [0,+1]. The fixed effects included are row 1: firm, year, and quarter fixed effects; row2: firm, year, quarter and manager fixed effects. Reported is the F-test for the joint significance of the manager fixed effects. For the F-test we report the value of the F-statistic and, in parentheses, the associated p-value and number of constraints. Also reported are the number of observations and Adj. R^2s for each regression. Panel B reports the frequency of the significant manager fixed effects (at the 5% level and the 10% level) estimated in Panel A. Panel C reports mean, median, lower quartile, and upper quartile values of the estimated manager fixed effects. Panel D reports the correlation coefficients (Pearson on the lower left and Spearman on the upper right) between the manager effects on residual tone and on residual CAR. One-tailed P-values are reported in the second row. Coefficients that are significant at the 10 percent level are highlighted in bold. All variables are described in Table1.

Figure 1
Changes in Residual Tone Surrounding the Quarter of Executive Hire

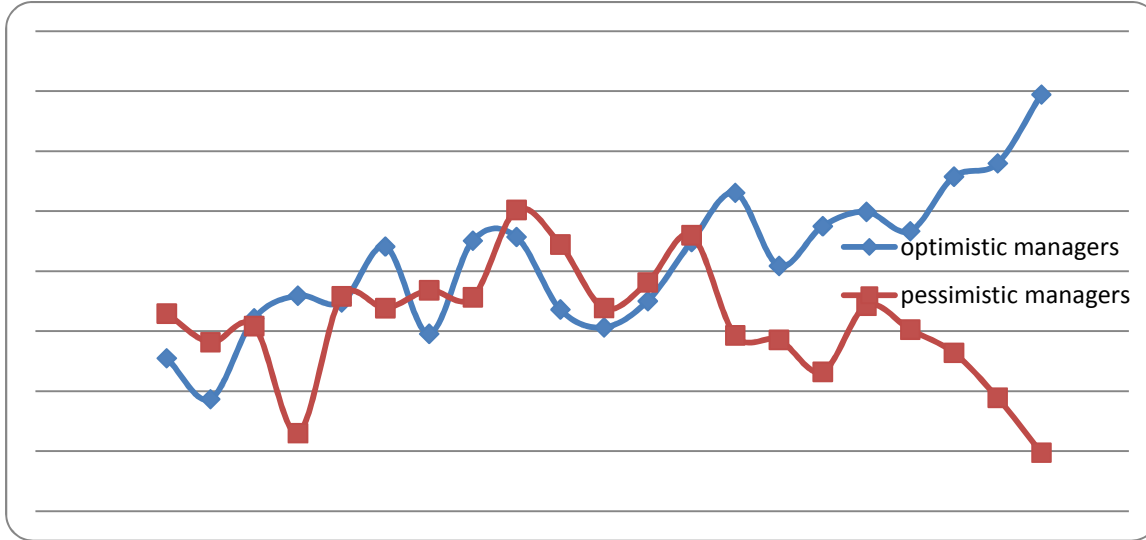**Panel A:** Change in *RESIDUAL_TONE_D* Surrounding Date of Hire
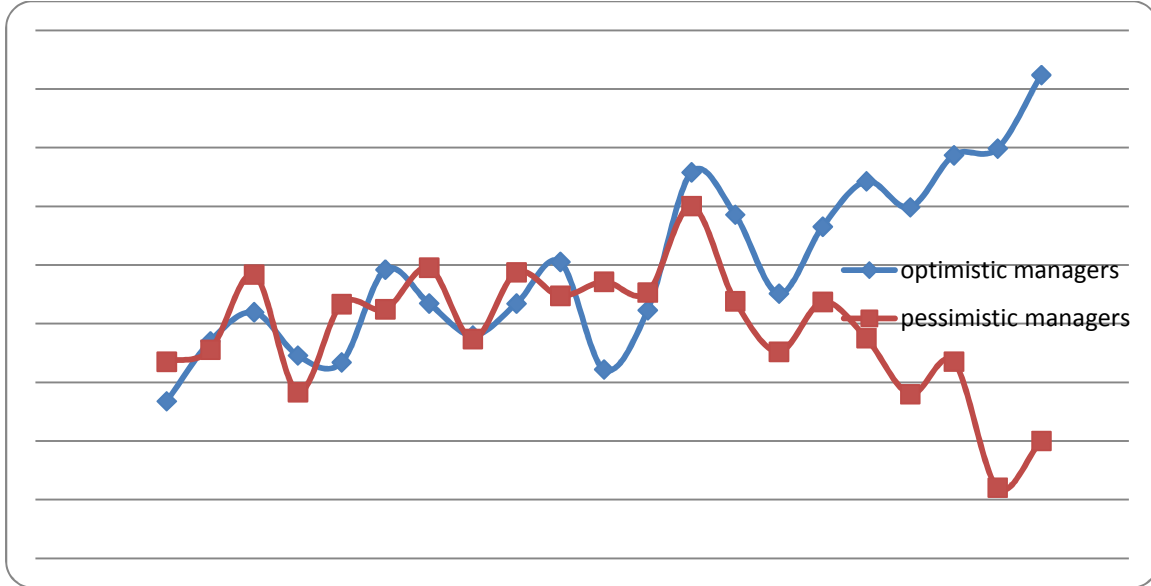
Panel B: Change in *RESIDUAL_TONE_H* Surrounding Date of Hire
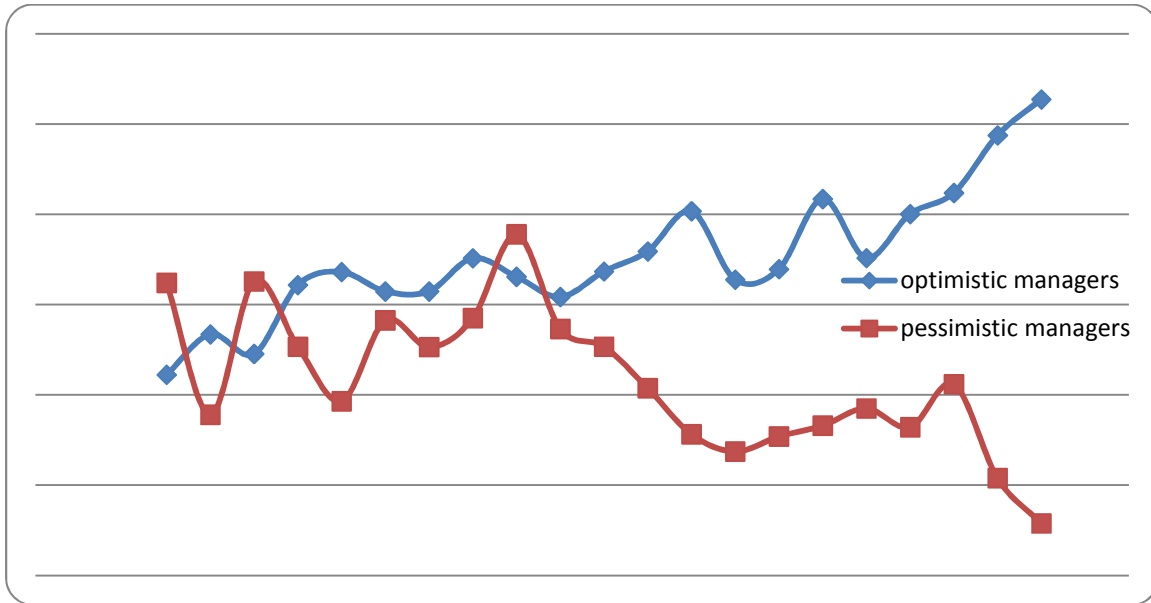
Figure 1 (continued)
Changes in Residual Tone Surrounding the Quarter of Executive Hire

Panel C: Change in *RESIDUAL_TONE_LM* Surrounding Date of Hire

The figure shows change in residual tone around the hiring of the executive. Managers are assigned to optimistic and pessimistic groups by their fixed effect coefficient on residual tones from Table 6. Managers that have a statistically positive coefficient (at the 10% level) are labeled "optimistic" managers. Managers that have a statistically negative coefficient (at the 10% level) are labeled "pessimistic" managers. Each firm's *RESIDUAL_TONE* measures are the residuals of regressing $TONE\_L^{ALL}$, $TONE\_H^{ALL}$, $TONE\_LM^{ALL}$ on *MBE, SURP, LOSS, RETURN, GROWTH, ROA,* and future *ROAs*, firm, year, and quarterly fixed effects, respectively.