The Pitch: Managers' Disclosure Choice During IPO Roadshows

Elizabeth Blankespoor
University of Washington
Foster School of Business

Bradley E. Hendricks
University of North Carolina at Chapel Hill
Kenan-Flagler Business School

Gregory S. Miller
University of Michigan
Stephen M. Ross School of Business

January 2019

Abstract

We examine differences in firm disclosure during the initial public offering (IPO) roadshow presentation relative to the registration filing, and we ask how investors perceive any disclosure differences. These two disclosure events are the primary information sources during the IPO, but the IPO roadshow typically allows managers more autonomy to select what information is released and how it is discussed. We find that IPO roadshows have significantly more optimistic and less uncertain language than the SEC filing. Further, using machine learning to classify roadshow topics into one of five major topics in the registration statement, we find that the disclosure shift comes from both selection of topics and portrayal of those topics. We then examine investor response during the roadshow period, finding that the price revision is negatively correlated with the difference in uncertain language but uncorrelated with the difference in tone. Finally, we find that post-IPO returns are unrelated to differences in uncertain language but negatively related to differences in tone. Together these results suggest that investors quickly respond to managers' incremental use of uncertain language as a credible source of information, but that they could benefit from quicker discounting of optimistic language in the roadshow.

1. Introduction

Potential investors in an initial public offering (IPO) face significant uncertainty about the issuer. To reduce this information asymmetry, the firm is required to file an SEC registration statement that provides extensive written disclosure about the firm's business plan, performance, capital structure, management team, and governance policies. While this filing is often seen as the definitive information source for management's expectation of the firm's operation and performance, many large investors will not participate in IPOs unless they are able to attend the roadshow "pitch" in which management summarizes its view of the most important aspects of the company and offering (NYSE/NASD 2003). In this study, we use 345 transcripts of manager presentations from IPO roadshows to examine (1) how managers' summary in the roadshow presentation differs relative to the firm's more regulated IPO disclosures, (2) whether managers' disclosure differences influence investor response during the bookbuilding process, and (3) whether investors efficiently incorporate into price the information (if any) from managers' disclosure differences. [1]

The roadshow presentation is unlikely to include significant new disclosures because the SEC requires that any material information in an issuing firm's roadshow presentation also be included in the firm's SEC filing. Despite this requirement, there are several reasons the disclosure could differ in ways potential investors find valuable. First, each document is the result of a different creation process and a different objective. The issuing firm's prospectus is the product of a highly collaborative process between its managers, accounting personnel, general counsel, regulatory compliance officers, auditor, and underwriter, with regulatory compliance being an important

---

[1] Throughout the draft, we use roadshow pitch and presentation interchangeably.

motivation.[2] While these parties also influence an issuing firm's roadshow presentation, the pitch provides managers more opportunity to use their own words to portray their view of the firm, including selection of the information to discuss and how to describe it, with the primary goal of engaging potential investors. There is consistent evidence that capital market participants value access to management's perspective, suggesting that a firm presentation highlighting management's point of view would be informative (e.g., Brown et al. 2015, Brown et al. 2016).

Second, the summary format of the pitch is a less costly information source relative to the registration statement. The issuing firm's registration statement consists of several hundred pages of often complex disclosures. In contrast, the average length of the pitch (i.e., number of words) is approximately 5% of the filing's length. Numerous papers highlight that the costs of processing information create frictions for investors allocating limited resources (e.g., Bloomfield 2002; Hirshleifer and Teoh 2003; Miller 2010; Blankespoor, Miller, and White 2014). IPO investors are sophisticated participants with significant processing resources, but we would still expect them to consider costs and benefits when using information. Thus, we expect disclosure differences in the roadshow presentation, and that investors could value and respond to these disclosure differences.

To investigate roadshow presentations' disclosure differences and investor response, we capture and transcribe 345 IPO roadshow presentations from 2011 through 2014. We then compare these presentations to the firm's last complete prospectus prior to the roadshow period. We focus on two common textual characteristics from prior literature: net tone and uncertainty (Loughran and McDonald 2011; Loughran and McDonald 2013). Net tone (i.e., positive minus negative

---

[2] Prior studies provide evidence that the narrative disclosures of firms' regulatory filings are associated with the involvement of large audit firms (e.g., Dyer, Lang, and Stice-Lawrence 2017), securities lawyers (e.g., Bozanic, Choudhary, and Merkley 2016), and investor relations officers (Brown, Call, Clement, and Sharp 2018). Amel-Zadeh, Scherf, and Soltes (2018) describe survey results of a wide variety of departments and individuals typically involved in firm disclosure like the 10-K and MDA.

words) attempts to capture management's directional representation of the firm's performance and prospects, while uncertainty attempts to capture the ambiguity of information and thus difficulty of assessing future cash flows. We find that management's pitch is uniformly more optimistic and less uncertain than the prospectus, consistent with the pitch's purpose of securing new investors rather than meeting regulatory requirements. Overall, there are clear disclosure differences between the roadshow pitch and the SEC filing, reinforcing the potential for investors to find the roadshow pitch valuable.

We then examine investors' response to disclosure differences in the roadshow pitch. If these disclosure differences provide insight into management's perspective (and are available at lower cost than the SEC filing), we would expect investors to respond to them as valuable information. Management's perspective could be especially valuable in this setting if regulation results in unnecessarily long filings with boilerplate, redundant, and overly cautious disclosures (e.g., Brown and Tucker 2011; Dyer, Lang, and Stice-Lawrence 2017). The freedom in the roadshow would allow management to adjust the disclosure to provide more useful, less conservatively-biased information.

However, investors' response will depend on the credibility of the information. Managers could use the additional freedom in the roadshow pitch to (at least subtly) positively bias their portrayal of the firm. For example, in non-IPO settings, managers with incentives such as performance-based compensation or impending additional capital raising are more likely to manage earnings upward (e.g., Bergstresser and Philippon 2006; Cohen and Zarowin 2010). Firms bidding on stock mergers use opportunistic disclosure (and any resulting media coverage) to manage their stock price upward in order to benefit from the greater purchasing power (Ahern and Sosyura 2014). In the IPO setting, managers would benefit from a higher IPO valuation through

increases in the value of the shares they own, increased proceeds to pursue the firm's investment opportunities, and improved general market perceptions of the firm. The incentives to bias are constrained by the risk of significant price declines after the IPO, though (Lewellen 2006). Thus, it is an empirical question whether managers' portrayal of the firm during the roadshow pitch will be partially biased.

In our study, if investors find the disclosure changes credible, we would expect a positive reaction to increases in tone, and a negative reaction to increases in uncertain language. However, investors who expect management bias are likely to discount disclosure differences aligned with manager's benefit but respond to disclosure differences that are not self-serving for management (Kimbrough and Wang 2014). In our descriptive analysis, the uniform increase in tone and decrease in uncertain language means that the roadshow filing consistently portrays the firm in a better light, which could be seen as self-serving disclosure by management. Thus, investors may choose to discount or not respond to the incremental positive tone as well as the reduction in uncertain language, resulting in insignificant coefficients.[3] Consistent with investor skepticism, we find that the price revision during the roadshow period is not associated with the incremental tone in the roadshow pitch. In contrast, the price revision is negatively associated with incremental uncertainty, consistent with investors viewing management's reduction in uncertain language as credible information that increases their assessment of the firm's value.

Overall, the mixed response of investors – not responding to changes in net tone but responding to changes in uncertain language – highlights the difficulty of disentangling empirically whether managers are biased in their roadshow pitch or the SEC filing is overly conservative. We can,

---

[3] A third possibility is that investors are wary of managers that engage in too much self-serving behavior and respond in the opposite intended reaction. This would be a negative coefficient on an increase in net tone and a positive coefficient on an increase in uncertain language (i.e., negative reaction to larger decreases in uncertain language).

however, examine whether disclosure differences in the roadshow pitch predict returns after the IPO period as a way of assessing whether investors appropriately responded. We examine returns in the 90 days and in the year after the IPO, and we find that the difference in tone is negatively associated with future returns. This suggests that investors were correct to not positively respond to the tone difference, and that more positive disclosure differences may actually signal management trying to spin negative future prospects. In contrast, the uncertainty difference is generally unrelated with future returns, suggesting investors responded appropriately to the information about uncertainty in the roadshow pitch.

To further understand investors' response, we examine a setting where managers' information is arguably more valuable: when the firm mentions going concern (GC) in their filing. Bochkay, Chychyla, Sankaraguruswamy, and Willenborg (2018) find evidence that the IPO price revises downward for firms that disclose GC uncertainties in their filing, and that firms with GC disclosures also disclose more Risk Factors. If investors view management's perspective as more valuable when firms face greater uncertainty, we would expect investors to respond more to differences in the GC firms' roadshow pitch disclosure. Consistent with this prediction, we find a greater positive (negative) price revision to GC firms' net tone (uncertainty) differences.[4] When we examine post-IPO returns by GC status, we find that the return reversal for net tone is limited to GC firms, where there was (weak) evidence of investors initially responding to tone increases as credible signals. For uncertainty, there is some evidence that investors should have responded even more to incremental uncertainty in GC firms' roadshow language.

Finally, we examine the details of these relations more closely in several ways. First, we separate the constructs of tone and uncertainty into their more basic word list components:

---

[4] We also, however, see a negative response to tone differences for non-GC firms, suggesting that investors may perceive an increase in tone as a negative signal of management type for some firms, perhaps appropriately.

Positive, Negative, and UncertainOnly. We observe a negative response to greater differential use of negative words in the pitch and no reaction to greater positive word use. However, there is room for even more investor response, with incremental positive words and uncertain words predicting future negative returns.

Second, we use machine learning to examine the types of information that are included in the roadshow pitch to begin to assess whether the difference comes from different information being chosen, different portrayal of the same information, or both. We find that the roadshow pitch includes more content from the Business section of the S-1, and less content from the Risk, MD&A, or Management sections. In addition, the net tone (uncertainty) of the roadshow pitch is more positive (less uncertain) than any individual section of the S-1. Together, these descriptive results suggest that the disclosure difference comes from both a different focus of information and different portrayal of the same information.

We contribute to the IPO literature. Many papers examine firm disclosure during the IPO period and investor response (e.g., Hanley and Hoberg 2010; Jegadeesh and Wu 2013; Loughran and McDonald 2013; Bochkay et al., 2018). However, despite the significant emphasis that investors, issuers, and underwriters are said to place on an issuing firm's roadshow, we are unaware of any other study that examines the verbal content of managements' presentations at these events or how investors respond to them.[5] Thus, our study describes this important but unstudied event, and provides insights into investor unraveling of management incentives.

---

[5] To our knowledge, Blankespoor, Hendricks, and Miller (2017) is the only other study that examines any facet of IPO roadshows. While that study uses the IPO roadshow setting to examine how investors' basic cognitive impressions of management influence firm value, it does not consider the content of managements' disclosure decisions during this event. Our study, on the other hand, fills this gap in the IPO literature by exclusively focusing on the verbal content conveyed by managers during their roadshow presentations.

We also contribute to the general disclosure literature by providing evidence on the informativeness of and response to an important management summary (i.e., the roadshow presentation). Many firm disclosures are subject to the same issues of length, regulatory oversight, and competing influencing parties, and a potential solution is summarization by management. (Barth 2015; Dyer, Lang, and Stice-Lawrence 2017). Prior studies find evidence of management bias in disclosure when given additional flexibility (e.g., Davis and Tama-Sweet 2012; Cardinaels, Hollander, and White 2018). We find evidence of a management summary that provides valuable information yet is still potentially subject to management bias, with a partial but incomplete response by sophisticated investors to the information in the summary.

2. Data

2.1 Sample Selection

We begin with the 629 firms that completed an IPO on NYSE or Nasdaq between March 24, 2011 and December 31, 2014 (the period we collected roadshow presentations). Consistent with prior literature examining IPO firms, we exclude financial firms, limited partnerships, unit offerings, filings less than $10 million, and firms with missing or incomplete financial information. To obtain transcripts of the roadshow presentation, we first captured the presentation from RetailRoadshow.com during the 1-2 week viewing period around the IPO date, and we then transcribed the spoken narrative of the videos. We excluded firms that we did not capture a video for, as well as videos that had audio complications preventing thorough transcription. Our final sample is 345 firms, as shown in Table 1 Panel A. As detailed in Panel B, the IPOs span a variety of industries, but the majority of IPOs operate in the Healthcare or Business Equipment industry.

2.2 Variable Construction: Disclosure Differences

To test our predictions, we create variables to capture disclosure differences between each firm's roadshow presentation and its last complete prospectus prior to the roadshow period. We focus on two common textual characteristics from prior literature: net tone and uncertainty (Loughran and McDonald 2011; Loughran and McDonald 2013).

Net tone captures management's directional representation of the firm's performance and prospects. To calculate this measure, we use the word lists from Loughran and McDonald (2011).[6] Specifically, we define *Tone_S1* (*Tone_RS*) as the difference between the number of positive and negative words in a firm's pre-roadshow prospectus (roadshow presentation) divided by the total number of words. We then define *Tone_Diff* as *Tone_RS* minus *Tone_S1*. While *Tone_S1* is available to investors and other users of an IPO firm's SEC filings prior to the firm's roadshow, *Tone_RS* and *Tone_Diff* are not revealed until after the firm begins the roadshow process. Figure 1 depicts the cumulative distribution function for *Tone_S1* and *Tone_RS*. As shown, there is significant variation in each of the two measures, but the tone conveyed by managers during their roadshow presentations is markedly higher than the tone reported in the prospectus. Further, Figure 2 provides the cumulative distribution function for *Tone_Diff*, revealing significant variation in how much the tone of a firm's roadshow presentation exceeds that of its prospectus. Consistent with the pitch's primary purpose being to secure new investors rather than to meet regulatory requirements, Figure 2 indicates that a manager's pitch is uniformly more optimistic relative to the firm's most recently filed prospectus (i.e., *Tone_Diff* is always greater than 0).

---

[6] We acknowledge that prior literature has used several other word lists to measure the tone of firm disclosures (e.g., Diction and Harvard GI). However, we use the Loughran and McDonald (2011) word list because it was specifically created with the purpose of analyzing language from firms' regulatory filings and has been used in prior research related to the IPO setting. We also recognize that some research has used more sophisticated techniques than word frequency counts to measure tone (e.g., Li 2010). However, these alternative methods have not been shown to be superior to simple word count techniques and present problems for future replication (Henry and Leone 2016; Loughran and McDonald 2016).

We follow a similar process to create textual measures of uncertainty, intended to capture the ambiguity of information and thus difficulty of assessing future cash flows. Specifically, we define *Uncertain_S1* (*Uncertain_RS*) as the percent of words in the firm's pre-roadshow prospectus (roadshow presentation) that are in the union of the uncertain, negative, or weak modal word lists (Loughran and McDonald, 2013).[7] We then define *Uncertain_Diff* as *Uncertain_RS* minus *Uncertain_S1*. Like our measures of tone, we observe significant variation in each of these measures. Consistent again with the pitch being used to attract investors, Figure 3 reveals that the uncertainty conveyed by managers during their roadshow presentations is markedly lower than the uncertainty conveyed in the filings. Considering these two disclosures at the intra-firm level, Figure 4 reveals that managers uniformly convey less uncertainty during their roadshow presentations (i.e., *Uncertain_Diff* is always less than 0).

INSERT FIGURES 3-4

3. Research Design and Empirical Results

3.1. Disclosure differences and investor response

We begin our analysis of how investors perceive manager-driven disclosure differences by examining the relation between the disclosure differences and the price revision that occurs during the IPO bookbuilding period. The vast majority of shares are allocated to institutional investors that attend the firm's roadshow (Benveniste and Wilhelm 1997). Thus, by focusing our analysis

---

[7] We use the union of these three word lists in accordance with the recommendation from Loughran and McDonald (2013:308-309). Specifically, they perform a principal component analysis of these three word lists and conclude that "*the uncertain, weak modal, and negative word lists do appear to be measuring the same underlying attribute*" and recommend future researchers use "*an aggregate word list drawing words from the uncertain, weak modal, and negative word lists*" to proxy for uncertainty. While we use the union of these word lists, we do perform subsequent analyses in Section 4.1 that decompose our proxy for uncertainty into its individual word lists.

on the price revision, we reduce concerns that the observed changes in investor demand are driven by investors who did not observe the manager's roadshow presentation. Further, this specification allows us to regress an observed *change* in price (*Price_Revision*) on a recently observed *change* in disclosure (*Tone_Diff*, *Uncertain_Diff*). While Table 2 reveals a positive (negative) univariate relation exists between *Tone_Diff* (*Uncertain_Diff*) and *Price_Revision,* we use pooled multivariate regression before making inferences about the relation between variables. Thus, we estimate the following OLS regression and double-cluster standard errors by industry and week:

$$
\begin{aligned}
Price\_Revision_i = {}& \beta_0 + \beta_1 Disclosure\_Diff_i + \beta_2 Disclosure\_S1_i + \beta_3 Ln(Assets)_i \\
& + \beta_4 TobinsQ_i + \beta_5 Operating\_Perf_i + \beta_6 GConcern_i + \beta_7 Startup_i + \beta_8 R\&D\_Intensity_i \\
& + \beta_9 Ln(Age)_i + \beta_{10} Ln(Proceeds)_i + \beta_{11} Retained_i + \beta_{12} Underwriter_i + \beta_{13} VC + \beta_{14} Big4 \\
& + \beta_{15} Insider\_Own_i + \beta_{16} IndustryReturn_i + \beta_{17} IndustryReturn^+ + Fixed\ Effects + \varepsilon_i
\end{aligned}
\qquad \textbf{(1)}
$$

where *Price_Revision* is defined as the percentage change between an issuing firm's offer price per share and the price per share initially proposed. *Disclosure_Diff* is our primary variable of interest and takes the value of either *Tone_Diff* or *Uncertain_Diff*, as defined in Section 2.2.

INSERT TABLE 2

We include several control variables in our model that have been shown to be important indicators of the price revision. In addition to year and industry fixed effects,[8] we include *Disclosure_S1* that takes the value of either *Tone_S1* or *Uncertain_S1*, as described in Section 2.2, to control for management's pre-roadshow disclosed level of net tone and uncertainty (Loughran and McDonald 2011; 2013). We also control for several of the issuer's financial characteristics. We control for firm size (*Ln(Assets)* = the natural log of the firm's assets), firm value (*TobinsQ* = the sum of a firm's total liabilities and its market value of equity using the midpoint of the proposed pricing range all divided by total assets), pre-IPO operating performance (*Operating_Perf* =

---

[8] We include calendar-year and Fama-French 10 classifications in this specification, and in all other references to fixed effects in the draft.

operating income divided by total assets), R&D intensity (*R&D_Intensity* = R&D expense divided by total assets), and firm age (*Ln(Age)* = natural log of the firm's age as obtained from Jay Ritter's data library). We also include *GConcern*, an indicator variable that takes the value of one if the firm's management includes discussion of a going concern in its pre-roadshow prospectus (Bochkay, et al. 2018). We also control for *Startup* (an indicator variable that takes the value of one if its pre-IPO revenues are less than $50 million) as these firms have historically realized abnormally poor post-IPO performance (Gao, Ritter, and Zhu 2013).

In addition to variables related to an issuer's financial position and operating performance, we also include variables related to the market and offering. Specifically, we control for the proceeds associated with the offering (*Ln(Proceeds)* = the number of primary shares issued multiplied by the mid-point of the proposed pricing range) and the proportion of shares retained by the firm (*Retained* = the difference between the post-IPO common shares outstanding and the shares issued in the offering all divided by the post-IPO common shares outstanding). We also control for *Underwriter* as the average Carter-Manaster ranking of the firm's lead underwriters (Leland and Pyle 1977; Carter and Manaster 1990), *VC* as an indicator variable that takes the value of one if the firm has venture-capital backing (Barry, et al. 1990; Megginson and Weiss 1991), *Big4* as an indicator variable for whether the firm has a Big4 auditor at the time of IPO (Titman and Trueman 1986), and *Insider_Own* as the percentage holdings of the firm's executives and directors. Lastly, we control for macroeconomic changes that arise during the bookbuilding period (*IndustryReturn* = the equal-weighted return of the issuing firm's Fama-French 10 industry classification over the fifteen days prior to going public). Following prior research (e.g., Loughran and Ritter 2002; Lowry and Schwert 2004), we also allow for positive information to affect price revision differently. To do so, we include *IndustryReturn+* that takes the value of *IndustryReturn* when

positive and zero otherwise. Descriptive statistics (correlation coefficients) related to these, and all other variables described above, are shown in Panel A (Panel B) of Table 2.

INSERT TABLE 3

Table 3 presents the results from estimating Eq. (1). Focusing first on the relation between tone-related disclosure differences (*Tone_Diff*) and *Price_Revision*, the results tabulated in Columns 1 – 2 fail to reject the null hypothesis that these disclosure differences are unrelated to the price changes that occur during the book building period (p-values = 0.323 and 0.500 for models without and with *Tone_S1* included). These findings are consistent with skeptical investors disregarding the incremental positive tone portrayed during the manager's presentation.

Columns 3 – 4 examine the relation between uncertainty-related disclosure differences (*Uncertain_Diff*) and *Price_Revision*. Focusing on Column 4, which includes a control for the uncertain language in the firm's final prospectus prior to the roadshow (i.e., *Uncertain_S1*), we find a negative relation between *Uncertain_Diff* and *Price_Revision* (coefficient = -0.0279, p-value = 0.024). This finding implies that investors perceive the variation in managers' uncertain language to be credible information about the firm's prospects. In terms of economic magnitude, this result suggests that a one standard deviation increase of *Uncertain_Diff* is associated with a price reduction of 1.14%. Considering the mean (median) filing size for our sample of firms is $207.2 (103.0) million, this is equivalent to a reduction of $2.36 ($1.17) million.

3.2. Disclosure differences and post-IPO performance

Our finding that disclosure differences are related to the price revision raises the question of whether investors are appropriately incorporating this information about firms. This is difficult to test empirically as there is not an obvious time horizon to examine for an unraveling of the response. Despite this limitation, we examine the association between *Disclosure_Diff* and

subsequent returns for our sample of firms. Specifically, we estimate the following OLS regression and double-cluster standard errors by industry and week:

$$BHAR\_Var_i = \beta_0 + \beta_1 Disclosure\_Diff_i + \beta_2 Disclosure\_S1 + \beta_3 Ln(MVE)_i + \beta_4 BTM_i$$
$$+ \beta_5 Operating\_Perf_i + \beta_6 Startup_i + \beta_7 R\&D\_Intensity_i + \beta_8 GConcern_i + \beta_9 Underwriter_i$$
$$+ \beta_{10} VC_i + \varepsilon_i \qquad (2)$$

where $BHAR\_Var$ takes the value of either $BHAR_{90}$ or $BHAR_{365}$. $BHAR_{90}$ ($BHAR_{365}$) is defined as the firms' post-IPO buy-and-hold abnormal returns over the subsequent 90 (365) days, using the CRSP-value weighted index over that same period as the benchmark.[9] *Disclosure_Diff* is our primary variable of interest and takes the value of either *Tone_Diff* or *Uncertain_Diff*, as defined in Section 2.2.

We include several control variables in our model that have been shown to be important indicators of post-IPO performance. Specifically, we include *Operating_Perf* (e.g., Willenborg, Wu, and Yang 2015), *Startup* (e.g., Gao et al. 2013), *R&D_Intensity* (Guo, Lev, and Shi 2006), *GConcern* (Bochkay et al. 2018), *Underwriter* (e.g., Carter, Dark, and Singh 1998), and VC (e.g., Jain and Kini 1995; Krishnan, Ivanov, and Masulis 2011). In addition to these variables, which are as defined in Section 3.1, we also include controls for firm size (*Ln(MVE)* = the natural log of the firm's market value of equity using the closing price on its first day of trading on the public exchange) and its book-to-market ratio (*BTM* = the firm's book value of equity inclusive of its IPO proceeds divided by its market value of equity on its first day of trading on a public exchange).

INSERT TABLE 4

Columns 1 and 2 (3 and 4) of Table 4 present the results from estimating Eq. (2) when including *Tone_Diff* (*Uncertain_Diff*) in the model. While Table 3 indicated that investors disregard the

---

[9] In untabulated analyses, we find qualitatively similar results as those documented in Table 5 when using gross returns or abnormal returns relative to each firm's Fama-French 10x10 portfolio (i.e., the matrix of 100 portfolios formed on deciles for the market value of equity and the book-to-market ratio).

disclosure differences related to net tone, Columns 1-2 of Table 4 find a negative association between *Tone_Diff* and future abnormal stock returns over both a 90-day (coefficient = -0.0346, p-value = 0.014) and 365-day horizon (coefficient = -0.0895, p-value = 0.086). The economic magnitude of this result suggests that a one standard deviation increase of *Tone_Diff* is associated with abnormal returns of -2.49% (-6.44%) during the first 90 (365) days after the firm begins trading on the secondary market.[10] This suggests that investors' skepticism of the tone difference during the book building period was well-founded, and that more positive disclosure differences may actually signal management trying to spin negative future prospects.

Focusing on Columns 3-4 of Table 4, and in contrast to the results documented in Columns 1-2 related to disclosure differences in net tone, we find an insignificant relation between *Uncertain_Diff* and firms' future abnormal stock performance over both the 90-day (coefficient = -0.0747, p-value = 0.168) and 365-day horizon (coefficient = 0.0158, p-value = 0.817). Considering that we found a negative relation between *Uncertain_Diff* and *Price_Revision* in Table 3, this result is consistent with investors having responded appropriately to the information about uncertainty included in the firm's roadshow pitch.

3.3. Disclosure differences and firm uncertainty

We next examine a setting where we expect disclosure differences to be more valued by investors to see if investors' response to management's perspective is more pronounced. Bochkay et al. (2018) find evidence that the IPO price revises downward for firms that disclose GC uncertainties and that firms with GC disclosures also disclose more Risk Factors. Thus, we use firms that mention going concern in their prospectus as a proxy for firms facing greater uncertainty.

---

[10] These magnitudes are determined by multiplying the standard deviation of *Tone_Diff* by the estimated coefficients for *Tone_Diff* over both the 90-day (i.e., -0.0346) and 365-day horizons (i.e., -0.0895).

If information is more valuable when firms face greater uncertainty, we would expect investors to respond more to differences in the roadshow pitch disclosure as credible information.

To test this, we re-estimate Eq. (1) after partitioning the full sample into subsamples based on the *GConcern* indicator variable, and we include these results in Panel A of Table 5. Columns 1 and 2 (3 and 4) present these results when including *Tone_Diff* (*Uncertain_Diff*) in the model. While Table 3 indicated that investors appeared to disregard disclosure differences related to net tone, Columns 1 and 2 of Table 5, Panel A present evidence that this response differs for firms facing high levels of uncertainty. Specifically, the estimated coefficient for *Tone_Diff* is 0.0585 (-0.0330) for the partition of firms with (without) going concern uncertainties, with an F-test (p-value = 0.017) indicating this difference is statistically significant. We interpret this to mean that in times of uncertainty, investors find managers' tone disclosures to be more credible and place more reliance on them. However, the negative coefficient on *Tone_Diff* for the non-going concern sample raises an interesting possibility. The skeptical investor can go beyond ignoring incremental positive tone, and instead interpret additional optimism as a sign that management is attempting to hide or spin negative information. In this case, investors penalize non-going concern firms for being overly optimistic.

INSERT TABLE 5

Columns 3 and 4 of Table 5 provide further support that firm uncertainty influences the extent to which investors respond to the disclosure differences. Specifically, Column 3 reports a negative relation between *Uncertain_Diff* and *Price_Revision* (coefficient = -0.1063, p-value = 0.066) when limiting the analysis to firms with increased uncertainty (i.e., *GConcern* = 1). While a negative relation was also indicated in Column 4 of Table 3, the magnitude of the coefficient is 281% larger when focusing on the firms with significant uncertainty. On the other hand, the

estimated coefficient for *Uncertain_Diff* is -0.0026 (p-value = 0.870) when examining firms that do not have going concern uncertainties. An F-test indicates the difference between the *Uncertain_Diff* coefficients estimated in the two partitions is statistically significant (p-value = 0.049). Taken together, Table 4 is consistent with our prediction that investors respond to disclosure differences as being more credible when there is increased uncertainty surrounding the firm.

We next examine whether the relation of disclosure difference with future returns varies for firms facing high uncertainty. To do so, we re-estimate Eq (2) after partitioning firms into subsamples based on the *GConcern* indicator variable. The results are included in Panel B of Table 5. Columns 1-4 present these results when including *Tone_Diff* in the model. Focusing on Column 3, which includes only those firms that reference a going concern uncertainty in their final pre-roadshow prospectus, we find that the coefficient for *Tone_Diff* is estimated to be -0.2376 (p-value = 0.003). This suggests that the investor response documented in Panel A of Table 5 (i.e., positive relation between *Tone_Diff* and *Price_Revision*) should have discounted rather than accepted management's disclosure. In contrast, investors did initially respond negatively to the net tone disclosure differences of firms without significant uncertainty (i.e., Column 2 of Panel A, Table 5), and there is no relation between *Tone_Diff* and future returns for non-going concern firms. These two findings suggest that investors' negative response was well-founded for non-going concern firms' net tone. Taken together, Columns 1-4 of Panel B, Table 5 indicate that investors should not have viewed the credibility of disclosure differences differently between firms with and without high levels of uncertainty but rather treated them all with skepticism.

Columns 5-8 of Panel B, Table 5 present results of re-estimating Eq. (2) when including *Uncertain_Diff* in the model. While Panel A of Table 5 (i.e., Column 3) indicated that investors

16

view the disclosure differences related to uncertainty as providing credible information about highly uncertain firms, Columns 3 and 5 indicate that the response was not strong enough. Specifically, these two columns report estimated coefficients of -0.2511 (p-value = 0.00) and -0.2906 (p-value = 0.159). These coefficient estimates are statistically lower relative to those found when examining firms without as much uncertainty (i.e., p-values < 0.10). Taken together, Panel B of Table 5 indicates that while investors responded more strongly to high uncertainty firms' disclosure differences, these responses were less efficiently incorporating the information in disclosure differences.

4. Further Exploratory Analyses

4.1 Basic Textual Features

In our main analyses, we focus on two primary constructs identified and used by prior literature: overall valence of the firm information (*Tone*) and the overall uncertainty or ambiguity of disclosure (*Uncertainty*) (e.g., Loughran and McDonald 2011; 2013). However, the proxies for these constructs are comprised of separate word lists. In this section, we decompose the main constructs into these individual word lists. The disadvantage of this approach is that the proxies become disconnected from the underlying constructs. However, examining them individually may provide further insight if there are differential responses to components of the proxy.

We construct three new measures: *Pos_Diff*, *Neg_Diff,* and *Unc_Diff*. Similar to *Tone_Diff*, these capture the difference between roadshow pitch and filing disclosure, with *Pos_Diff* capturing the difference in the number of positive words, *Neg_Diff* the difference in the number of negative words, and *Unc_Diff* the difference in the number of uncertain words only (instead of the union of

the three word lists as described in footnote 6).[11] As shown in Table 6 Panel A, the roadshow pitches on average include more positive words, fewer negative words, and fewer uncertain words as a percent of total words than the filing, but there is variation in the frequency of these words.

INSERT TABLE 6

In Panel B, we repeat the analysis of Model 1 using the word-level components. As shown in column 1, we find that investors do not appear to respond to the incremental positive or uncertain language in the roadshow (i.e., p-values > 0.10), but they do respond to differences in negative language (coefficient = -0.0375, p-value = 0.030), indicating that the initial response to *Uncertain_Diff* documented in Table 3 is driven by variation in negative words. These results suggest investors discount variation in positive and uncertain language, but they respond to variation in explicitly negative words as credible disclosure. Columns 2 and 3 repeat the analysis of Model 2, finding some evidence of future negative returns for positive and uncertain words but no relation for negative words. These results suggest that investors appropriately respond to negative words at the time of IPO, but they could respond more to valuable information in managers' use of uncertain words and could interpret additional use of positive words as a negative signal of management bias influencing their disclosure.[12]

4.2 Topic Categories

In this section, we expand our focus from textual characteristics to the content of qualitative disclosures. Specifically, we ask whether the differences in roadshow disclosure characteristics are

---

[11] Note that the weak modal list is completely included in the uncertain only word list.
[12] In untabulated results, we repeat these word list-level tests partitioned by *GConcern* firm status. We find the negative response to *Neg_Diff* concentrated in *GConcern* firms, and a negative response to incremental positive words for non-*GConcern* firms. The future negative returns for positive and uncertain words are also more concentrated in *GConcern* firms. Together, these results are consistent with investors appropriately responding to negative words for *GConcern* firms but being over-(under-)skeptical of firms' uncertain (positive) words.

due to management talking about different content or explaining the same content in a different way. This is difficult to assess, but we take a first step by using machine learning to classify the roadshow pitch sentences based on topics found in the filing. Specifically, we first separate the filing into categories based on the table of content headings. We then aggregate these into five primary topic categories: Business, MD&A, Risk Factors, Management, and Other.[13]

Starting with the filing sentences in each identified category as the initial corpus of information, we use machine learning to predict the category of each sentence in the roadshow presentation. Specifically, we implement a linear support vector classification model in python that takes the filing sentences and topic categories as inputs, trains and tests a model using various training and testing groups of the filing sentences and their observed topic categories, and then uses the model to predict the topic category for each roadshow sentence. This approach has the advantage of limiting researcher influence to only the initial selection and identification of filing topic categories (as described above), rather than interpretation and classification of content within each sentence. However, the disadvantage is that we are training the model on one style of document (i.e., filings) and using it to predict values for another style of document or corpus (i.e., roadshow pitches). Thus, the findings should be interpreted with caution.

INSERT FIGURES 5-6

As shown in Figure 5, the average filing is nearly evenly split across these five major categories. In contrast, Figure 6 shows that average roadshow pitch has 80% of its sentences on Business topics, 11% on MD&A-related topics, and 5% or less on each of the remaining three

---

[13] Management includes both Management and Executive Compensation topics. Other includes categories such as Audit Report, Boilerplate, Capitalization, Change in Auditor, Description of Capital Stock, Dividend Policy, Experts, Legal, Principal and Selling Stockholders, Related Party, Underwriting, and Use of Proceeds. We exclude the following categories because they contain too much mixed topic content, overlapping information, or information irrelevant to the roadshow: Financial Statements, Letter from Management, Prospectus Summary, Table of Contents, Glossary, and Where you can find additional information.

major topics. Panel A of Table 7 provides the distribution of the topic allocation across filings and roadshow pitches. Together, these descriptives suggest that management changes the overall mix of content discussed in the roadshow, which could be the cause of the change in tone and uncertainty. Turning to the question of whether management changes the style in which it conveys content, Panels B and C provide the average tone and uncertainty in the roadshow, filing, and each of the filing categories. As shown in Panel B (C), the roadshow has a more positive net tone (less uncertain language) than any individual section in the filing. Overall, these descriptives imply that management is both changing the content discussed in the roadshow and changing the way content is discussed.

INSERT TABLE 7

4.3 Determinants

In this section, we examine determinants associated with the firm's disclosure differences. Our interest is in better understanding what firm and offering characteristics are associated with the significant variation observed across the different disclosure measures used in our study, as illustrated by Figures 1-4. To do so, we estimate the following OLS regression and double-cluster standard errors by industry and week:

$$Disclosure_i = \beta_0 + \beta_1 Ln(Assets)_i + \beta_2 TobinsQ_i + \beta_3 Operating\_Perf_i + \beta_4 GConcern_i + \beta_5 Startup_i + \beta_6 R\&D\_Intensity_i + \beta_7 Ln(Age)_i + \beta_8 Ln(Proceeds)_i + \beta_9 Retained_i + \beta_{10} Underwriter_i + \beta_{11} VC + \beta_{12} Big4 + \beta_{15} Insider\_Own_i + Fixed\ Effects + \varepsilon_i \quad \textbf{(3)}$$

where *Disclosure* takes the value of *Tone_S1*, *Tone_RS*, *Tone_Diff*, *Uncertain_S1*, *Uncertain_RS*, *or Uncertain_Diff*. As independent variables, we include all variables from Eq (1) that are known at the time of the firm's roadshow presentation. These variables are as defined in Section 3.1.

Columns 1-3 (4-6) of Table 8 report the results of estimating the above equation when examining disclosures related to net tone (uncertainty). Column 1 reports that a firm's operating performance, start-up status, and R&D intensity are all positively related to tone (i.e., p-values < 0.010). These statistically significant associations are intuitive and aligned with prior research that examines textual characteristics of firm disclosure. However, the statistically significant determinants of net tone conveyed by firms' roadshow filings are less intuitive. Specifically, Column 2 indicates that the net tone of firm roadshow presentations are positively related to going concern uncertainties and are negatively related to start-up status and R&D intensity (i.e., p-values < 0.10). Focusing on differences between the two firm disclosures, Column 3 indicates that *Tone_Diff* is positively related to *GConcern* but negatively related to *Startup* and *R&D_Intensity*. Although we control for these variables in our main models, it is perhaps less surprising that *Tone_Diff* was not found to convey credible information about firm prospects given the unintuitive determinants relations (i.e., Table 4 reveals a negative relation with post-IPO performance).

Turning to uncertainty-related disclosures, Column 4 finds that *Startup* is the only statistically significant determinant of *Uncertain_S1*. Surprisingly, that relationship is negative, suggesting that firms with below $50 million of revenue have lower uncertainty relative to more mature firms (coefficient = -0.0546, p-value = 0.030). On the other hand, Column 5 reports several statistically significant determinants of the uncertainty conveyed in firm roadshows. Among these, we find a negative relation with operating performance (coefficient = -0.0896, p-value – 0.026) and a positive relationship with *R&D_Intensity* (coefficient = 0.1626, p-value = 0.035). Thus, in contrast to the determinants related to net tone that were more intuitive when examining the filing relative to the roadshow, the determinants related to uncertainty are closer to our expectations for the uncertainty construct when examining the roadshow relative to the firm's filing. As a result,

relative to the *Tone_Diff* measure, the *Uncertain_Diff* measure appears more likely to convey meaningful information to investors. More specifically, Column 6 finds that *Uncertainty_Diff* is negatively related to the firm's operating performance (coefficient = -0.0620, p-value = 0.035) and positively related to both start-up status (coefficient = 0.1671, p-value = 0.038) and R&D activity (coefficient = 0.2272, p-value = 0.000). Considering these findings, it is perhaps less surprising that the disclosure differences related to uncertainty were found to have provided investors with valuable information about firm prospects (i.e., Columns 3-4 of Tables 3 and 4).

5. Conclusion

We examine managers' disclosure choices for the IPO roadshow pitch. This is a unique disclosure setting, where managers have an opportunity to provide a focused perspective on a longer, more regulated document. We find that managers' language is systematically more optimistic and less uncertain. Investors discount the optimistic language but find valuable information in the variation of management's adjustments to uncertain language. Future returns suggest investors appropriately respond to uncertain language differences, and that they would benefit from further discounting optimistic language in the roadshow pitch. Overall, when managers are given more freedom to disclose their perspective of their IPO firm, there is evidence that their perspective is valuable but also subject to bias, some of which investors anticipate.

There are several caveats to our analysis. First, based on review of practitioner literature, discussion with investor relations, and the fact that managers present the roadshow pitch, we assume that managers exert more influence over this IPO disclosure than over the filing. This assumption is consistent with the survey results that management is more involved with the conference call preparation than with MD&A creation (Amel-Zadeh, Scherf, and Soltes 2018). However, we do not empirically verify this assumption in our setting, so we cannot be sure that

the differences in roadshow pitch are driven by management. Second, there is considerable noise in the measures of textual characteristics and the assignment of roadshow pitch topic to filing topics. Thus, while these tests provide high-level summaries of differences, we cannot capture all nuances in the topics and topic portrayal. This limits our ability to identify specific disclosure differences.

References

Ahern, K.R., and Sosyura, D. 2014. Who Writes the News? Corporate Press Releases during Merger Negotiations. *Journal of Finance*, 69(1), 241-291.

Amel-Zadeh, A., Scherf, A., and Soltes, E. 2018. Creating Firm Disclosures. Working Paper.

Barry, C. B., Muscarella, C. J., Peavy Iii, J. W., & Vetsuypens, M. R. (1990). The role of venture capital in the creation of public companies: Evidence from the going-public process. *Journal of Financial Economics, 27*(2), 447-471.

Barth, M.E., 2015. Financial accounting research, practice, and financial accountability. *Abacus*, *51*(4), pp.499-510.

Benveniste, L.M. and Wilhelm Jr, W.J., 1997. Initial public offerings: going by the book. *Journal of Applied Corporate Finance*, *10*(1), pp.98-108.

Bergstresser, D., & Philippon, T. 2006. CEO incentives and earnings management. *Journal of Financial Economics, 80*(3), 511-529.

Blankespoor, E., Hendricks, B. E., & Miller, G. S. 2017. Perceptions and price: Evidence from CEO presentations at IPO roadshows. *Journal of Accounting Research, 55*(2), 275-327.

Blankespoor, E., Miller, G.S. and White, H.D., 2014. The role of dissemination in market liquidity: Evidence from firms' use of Twitter™. *The Accounting Review*, *89*(1), pp.79-112.

Bloomfield, R.J., 2002. The "incomplete revelation hypothesis" and financial reporting. *Accounting Horizons*, *16*(3), pp.233-243.

Bochkay, K., Chychyla, R., Sankaraguruswamy, S. and Willenborg, M., 2018. Management Disclosures of Going-Concern Uncertainties: The Case of Initial Public Offerings. *The Accounting Review*.

Bozanic, Z., Choudhary, P. and Merkley, K.J., 2016. Securities law expertise and corporate disclosure. Working paper.

Brown, L.D., Call, A.C., Clement, M.B. and Sharp, N.Y., 2015. Inside the "black box" of sell-side financial analysts. *Journal of Accounting Research*, 53(1), pp.1-47.

Brown, L.D., Call, A.C., Clement, M.B. and Sharp, N.Y., 2016. The activities of buy-side analysts and the determinants of their stock recommendations. *Journal of Accounting and Economics, 62*(1), pp.139-156.

Brown, L.D., Call, A.C., Clement, M.B. and Sharp, N.Y., 2018. Managing the narrative: Investor relations officers and corporate disclosure. *Journal of Accounting and Economics*, Forthcoming.

Brown, S.V. and Tucker, J.W., 2011. Large-sample evidence on firms' year-over-year MD&A modifications. *Journal of Accounting Research*, 49(2), pp.309-346.

Cardinaels, E., Hollander, S. and White, B.J., 2018. Automatic Summaries of Earnings Releases: Attributes and Effects on Investors' Judgments. Working paper.

Carter, R. B., Dark, F. H., & Singh, A. K. (1998). Underwriter reputation, initial returns, and the long-run performance of IPO stocks. *The Journal of Finance, 53*(1), 285-311.

Carter, R., Manaster, S., 1990. Initial public offerings and underwriter reputation. *The Journal of Finance, 45* 1045-1067.

Cohen, D. A., & Zarowin, P. 2010. Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting and Economics, 50*(1), 2-19.

Davis, A.K. and Tama-Sweet, I., 2012. Managers' use of language across alternative disclosure outlets: Earnings press releases versus MD&A. *Contemporary Accounting Research*, *29*(3), pp.804-837.

Dyer, T., Lang, M. and Stice-Lawrence, L., 2017. The evolution of 10-K textual disclosure: Evidence from Latent Dirichlet Allocation. *Journal of Accounting and Economics*, *64*(2-3), pp.221-245.

Gao, X., Ritter, J.R. and Zhu, Z., 2013. Where have all the IPOs gone?. *Journal of Financial and Quantitative Analysis*, *48*(6), pp.1663-1692.

Guo, R. J., Lev, B., & Shi, C. (2006). Explaining the Short-and Long-Term IPO Anomalies in the US by R&D. *Journal of Business Finance & Accounting, 33*(3-4), 550-579.

Hanley, K.W. and Hoberg, G., 2010. The information content of IPO prospectuses. *The Review of Financial Studies*, *23*(7), pp.2821-2864.

Hendricks, B., Lang, M., & Merkley, K., 2018. Through the eyes of the founder: CEO characteristics and firms' regulatory filings. Working paper.

Henry, E. and Leone, A.J., 2016. Measuring qualitative information in capital markets research: Comparison of alternative methodologies to measure disclosure tone. *The Accounting Review*, *91*(1), pp.153-178.

Hirshleifer, D. and Teoh, S.H., 2003. Limited attention, information disclosure, and financial reporting. *Journal of Accounting and Economics*, *36*(1-3), pp.337-386.

Jain, B. A., & Kini, O. (1995). Venture capitalist participation and the post-issue operating performance of IPO firms. *Managerial and Decision Economics, 16*(6), 593-606.

Jegadeesh, N. and Wu, D., 2013. Word power: A new approach for content analysis. *Journal of Financial Economics*, *110*(3), pp.712-729.

Kimbrough, M.D. and Wang, I.Y., 2014. Are seemingly self-serving attributions in earnings press releases plausible? Empirical evidence. *The Accounting Review*, *89*(2), pp.635-667.

Krishnan, C. N. V., Ivanov, V. I., Masulis, R. W., & Singh, A. K. (2011). Venture capital reputation, post-IPO performance, and corporate governance. *Journal of Financial and Quantitative Analysis, 46*(5), 1295-1333.

Leland, H., Pyle, D., 1977. Information asymmetries, financial structure and financial intermediaries. *The Journal of Finance 32*, 371-387.

Lewellen, K. 2006. Risk, reputation, and IPO price support. *Journal of Finance, 61*(2), 613-653.

Li, F., 2010. The information content of forward-looking statements in corporate filings—A naïve Bayesian machine learning approach. *Journal of Accounting Research*, *48*(5), pp.1049-1102.

Loughran, T. and McDonald, B., 2011. When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. *The Journal of Finance*, *66*(1), pp.35-65.

Loughran, T. and McDonald, B., 2013. IPO first-day returns, offer price revisions, volatility, and form S-1 language. *Journal of Financial Economics*, *109*(2), pp.307-326.

Loughran, T. and McDonald, B., 2016. Textual analysis in accounting and finance: A survey. *Journal of Accounting Research*, *54*(4), pp.1187-1230.

Loughran, T., & Ritter, J. R. (2002). Why don't issuers get upset about leaving money on the table in IPOs? *The Review of Financial Studies, 15*(2), 413-444.

Lowry, M., & Schwert, G. W. (2004). Is the IPO pricing process efficient? *Journal of Financial Economics, 71*(1), 3-26.

Megginson, W. L., & Weiss, K. A. (1991). Venture capitalist certification in initial public offerings. *The Journal of Finance, 46*(3), 879-903.

Miller, B.P., 2010. The effects of reporting complexity on small and large investor trading. *The Accounting Review*, *85*(6), pp.2107-2143.

NYSE/NASD, 2003. Report and recommendations of a committee convened by the New York Stock Exchange, Inc. and NASD at the request of the U.S. Securities and Exchange Commission. May, 2003.

Titman, S., & Trueman, B. (1986). Information quality and the valuation of new issues. *Journal of Accounting and Economics, 8*(2), 159-172.

Willenborg, M., Wu, B., & Yang, Y. S. (2015). Issuer operating performance and IPO price formation. *Journal of Accounting Research, 53*(5), 1109-1149.

Appendix: Variable Definitions

|	
Price_Revision	The percentage change between an issuing firm's final offer price per share and the initial price per share proposed in the firm's registration statement filed with the SEC.
BHAR$_{90}$	Firm's buy-and-hold return over the 90 days following its IPO minus the buy-and-hold return earned by the CRSP-value weighted index over that same 90 day period.
BHAR$_{365}$	Firm's buy-and-hold return over the 365 days following its IPO minus the buy-and-hold return earned by the CRSP-value weighted index over that same 365 day period.
Tone_S1	The difference between the number of positive and negative words in a firm's pre-roadshow prospectus, using the Loughran and McDonald positive and negative word dictionaries, divided by the total number of words included in the prospectus.
Uncertain_S1	The percent of words in the firm's pre-roadshow prospectus that are in the union of the Loughran and McDonald uncertain, negative, or weak modal word lists.
Tone_RS	The difference between the number of positive and negative words in a firm's roadshow presentation, using the Loughran and McDonald positive and negative word dictionaries, divided by the total number of words (from the Loughran and McDonald master dictionary) included in the roadshow presentation. Cases where not, none, neither, never, nobody, n't, or cannot precedes a positive or negative word by three or fewer words were removed. The final ratio is multiplied by 100 to put it in percentage terms.
Uncertain_RS	The number of words in the firm's roadshow presentation that are in the union of the Loughran and McDonald uncertain, negative, or weak modal word lists, divided by the total number of words (from the Loughran and McDonald master dictionary) included in the roadshow presentation. The final ratio is multiplied by 100 to put it in percentage terms.
Tone_Diff	*Tone_RS* minus *Tone_S1*.
Uncertain_Diff	*Undertain_RS* minus *Uncertain_S1*.
Ln(Assets)	The natural log of the firm's total book value of assets for the quarter prior to IPO.
TobinsQ	The firm's total book value of liabilities for the quarter prior to IPO plus its market value of equity (using the midpoint of the proposed pricing range) all divided by the firm's total assets for the quarter prior to IPO.
Operating_Perf	The firm's operating cash flows for the 12 months prior to IPO divided by the firm's total book value of assets for the quarter prior to IPO.

GConcern	An indicator variable that takes the value of one if the firm's management includes discussion of a going concern in its pre-roadshow prospectus.
Startup	An indicator variable that takes the value of one if its pre-IPO revenues are less than $50 million
R&D_Intensity	The firm's research and development expenditures for the 12 months prior to IPO divided by the firm's total book value of assets for the quarter prior to IPO.
Ln(Age)	The natural log of the firm's age at IPO.
Ln(Proceeds)	The natural log of the cash proceeds received from the IPO. The proceeds are calculated by multiplying the final offer price per share with the number of primary shares issued in the offering.
Retained	The number of pre-IPO common shares outstanding divided by the number of common shares issued in conjunction with the firm's IPO.
Underwriter	The average Carter-Manaster ranking of the firm's lead underwriters.
VC	An indicator variable equal to one if the firm has venture-capital backing prior to IPO.
Big4	An indicator variable equal to one if the firm has a Big4 auditor at the time of the IPO.
Insider_Own	The percentage of a firm's total common shares that are retained by executives and directors.
IndustryReturn	The equal-weighted return of the issuing firm's Fama-French 10 industry classification over the fifteen days prior to going public.
IndustryReturn$^+$	This variable is equal to the value of *IndustryReturn* if positive; zero otherwise.
Ln(MVE)	The natural log of the firm's market value of equity, calculated at the close of the firm's first day of trading on a public exchange.
BTM	The firm's post-IPO book value of equity divided by their market value of equity calculated at the close of the firm's first day of trading on a public exchange.

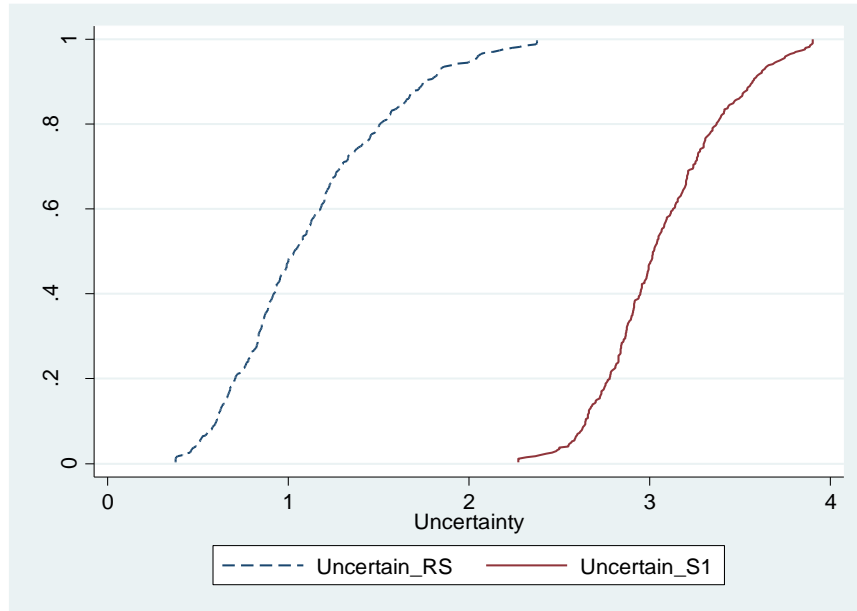**Figure 1: Comparison of Net Tone across Disclosure Mediums**
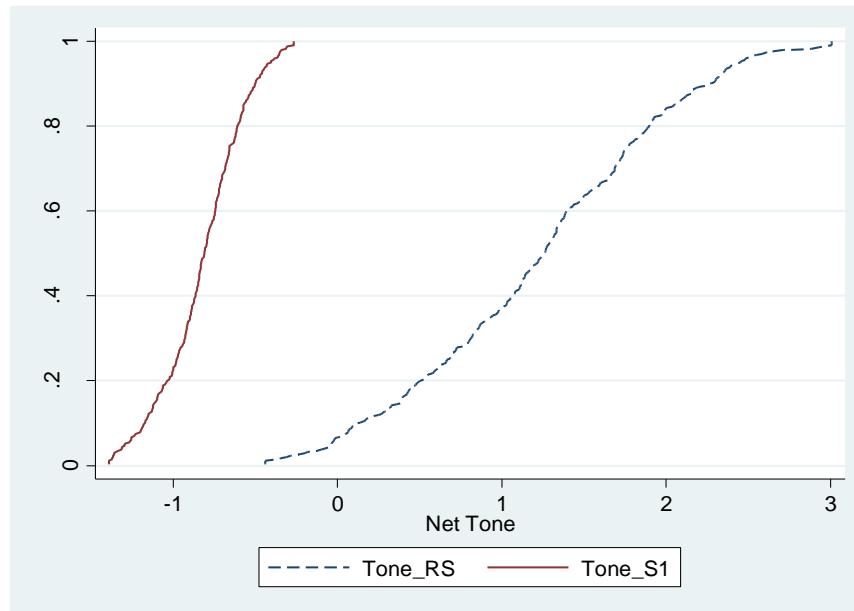
Notes: This figure plots the cumulative density function for measures of net tone in a firm's final pre-roadshow prospectus (*Tone_S1*) and roadshow presentation (*Tone_RS*). *Tone_S1* (*Tone_RS*) is defined as the difference between the number of positive and negative words in the firm's final pre-roadshow prospectus (roadshow presentation) divided by the total number of words therein.

Figure 2: Net Tone-related Disclosure Differences
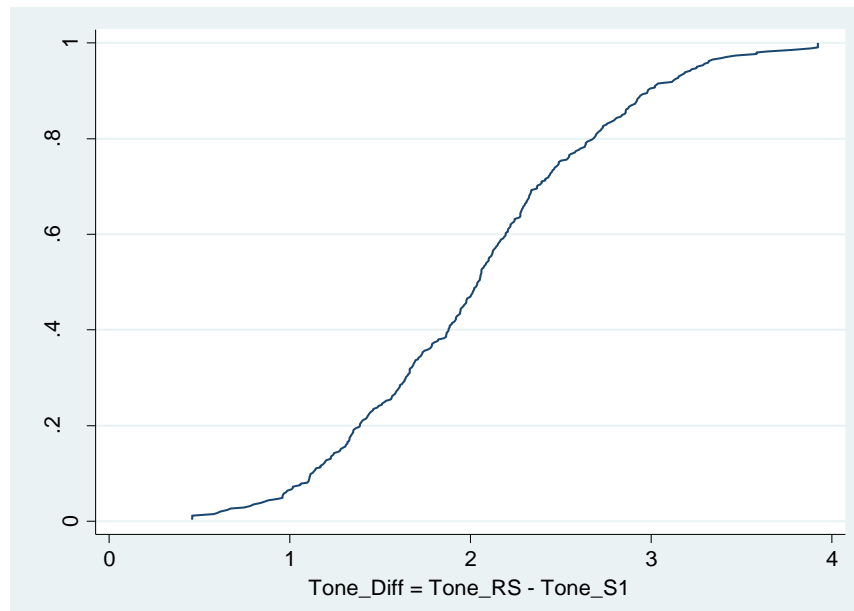
Notes: This figure plots the cumulative density function for *Tone_Diff*. *Tone_Diff* is defined as *Tone_RS* minus *Tone_S1* and captures the difference in net tone in the firm's roadshow presentation relative to its last pre-roadshow prospectus.

Figure 3: Comparison of Uncertainty across Disclosure Mediums


Notes: This figure plots the cumulative density function for measures of uncertainty in a firm's final pre-roadshow prospectus (*Uncertain_S1*) and roadshow presentation (*Uncertain_RS*). *Uncertain_S1* (*Uncertain_RS*) is defined as the percentage of words in the firm's final pre-roadshow prospectus (roadshow presentation) that are in the union of the uncertain, negative, or weak modal word lists.

Figure 4: Uncertainty-related Disclosure Differences
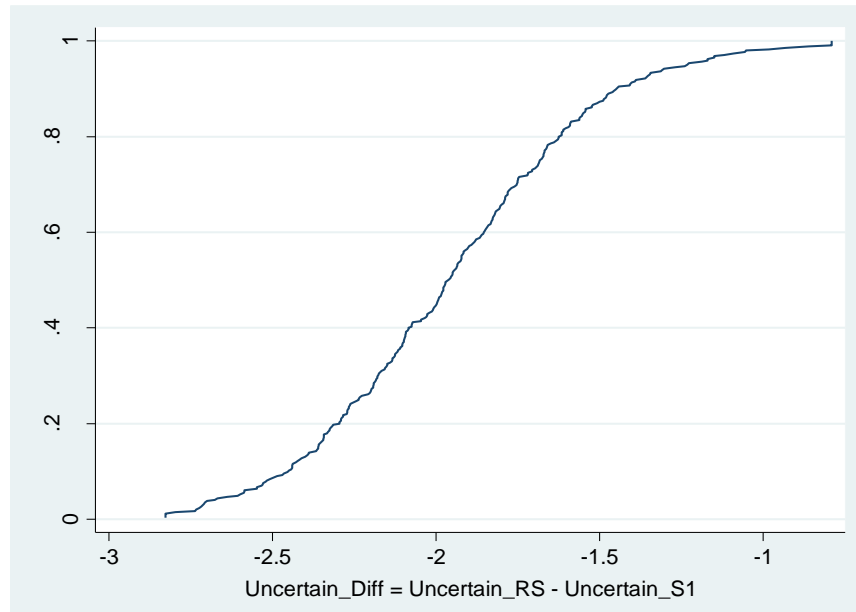

Notes: This figure plots the cumulative density function for *Uncertain_Diff*. *Uncertain_Diff* is defined as *Uncertain_RS* minus *Uncertain_S1* and captures the difference in uncertainty in the firm's roadshow presentation relative to their last pre-roadshow prospectus.

Figure 5: Filing Disclosure Topics
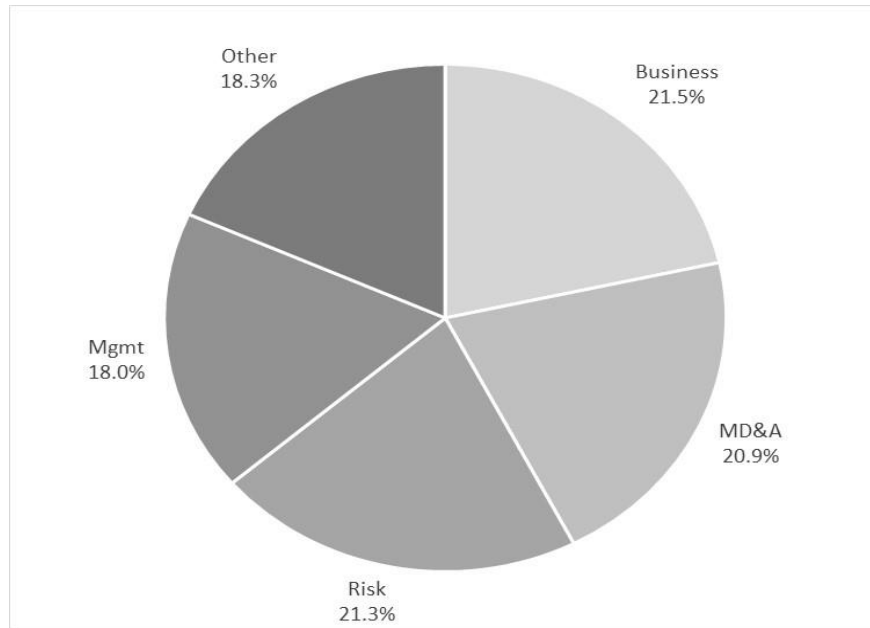
Notes: This figure plots the proportion of firms' final pre-roadshow prospectus related to five topics mentioned therein. These filing topics are determined based on the table of contents headings. See Section 4.2 for additional information about this process.

Figure 6: Roadshow Disclosure Topics
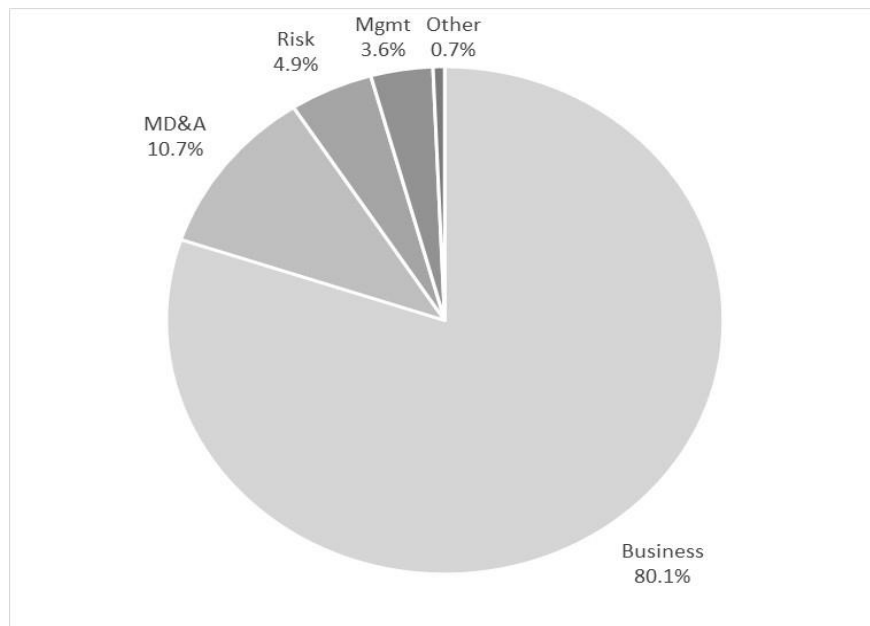
Notes: This figure plots the proportion of firms' roadshow presentations related to five topics mentioned therein. These filing topics are determined by using machine learning to classify the roadshow pitch sentences based on S-1 filing topics. See Section 4.2 for additional information about this process.

Table 1. Final Sample

Panel A: Sample Selection

Details	Observations
SDC Listing of U.S. firms that filed an S-1 registration statement to complete an initial public offering on the NYSE or Nasdaq between Mar 24, 2011 - Dec 31, 2014.	629
Less: Financial registrants (i.e., SIC 6xxx)	(121)
Less: Limited Partnerships, unit offerings and minor offerings (i.e., filings less than $10 million)	(70)
Less: IPOs with inadequate historical financial information	(20)
Less: Offerings whose videos were either not available or not captured from RetailRoadshow	(60)
Less: Roadshows that were captured with audio complications to the extent that an accurate transcription was not possible.	(13)
Final Sample	**345**

Notes: Panel A details our sample selection process and reports the final number of firms included in our empirical analyses. Section 2.1 provides additional information about our sample selection process.

Panel B: Sample Distribution

Industry	2011	2012	2013	2014	Total
Consumer Non-Durables	0	3	2	1	6
Consumer Durables	1	1	2	1	5
Manufacturing	3	6	6	4	19
Oil & Gas	6	4	4	6	20
Business Equipment	20	28	28	24	100
Telecommunications	1	1	2	2	6
Wholesale and Retail	7	10	12	9	38
Healthcare	6	12	34	57	109
Utilities	0	0	1	2	3
Other	6	6	17	10	39
Total	**50**	**71**	**108**	**116**	**345**

Notes: Panel B details the distribution of our final sample reporting both the issuing year and Fama-French 10-industry classification.

Table 2. Descriptive Statistics

Panel A: Descriptive Statistics

Variable	n	Mean	S.D.	0.25	Mdn	0.75
			Full Sample of Firms			
Price_Revision	345	-0.03	0.22	-0.19	0.00	0.12
$BHAR_{90}$	345	0.10	0.34	-0.14	0.05	0.25
$BHAR_{365}$	345	0.02	0.60	-0.39	-0.11	0.29
Tone_Diff	345	2.05	0.72	1.53	2.04	2.49
Uncertain_Diff	345	-1.95	0.41	-2.24	-1.96	-1.68
Tone_S1	345	-0.82	0.25	-0.98	-0.81	-0.66
Uncertain_S1	345	3.07	0.35	2.83	3.03	3.30
Tone_RS	345	1.23	0.77	0.68	1.26	1.76
Uncertain_RS	345	1.12	0.45	0.79	1.03	1.41
Ln(Assets)	345	5.09	1.75	3.86	4.63	6.33
TobinsQ	345	2.77	1.46	1.69	2.49	3.38
Operating_Perf	345	-0.24	0.64	-0.45	0.02	0.11
GConcern	345	0.28	0.45	0.00	0.00	1.00
Startup	345	0.34	0.48	0.00	0.00	1.00
R&D_Intensity	345	0.23	0.33	0.00	0.11	0.30
Ln(Age)	345	2.61	0.82	2.08	2.48	3.00
Ln(Proceeds)	345	4.74	0.81	4.22	4.49	5.13
Retained	345	3.82	2.28	2.31	3.26	4.79
Underwriter	345	8.06	0.99	7.75	8.36	8.72
VC	345	0.58	0.49	0.00	1.00	1.00
Big4	345	0.85	0.36	1.00	1.00	1.00
Insider_Own	345	0.49	0.32	0.18	0.53	0.76
IndustryReturn	345	0.26	3.38	-2.22	-0.01	2.59
IndustryReturn[+]	345	1.52	2.14	0.00	0.00	2.59
Ln(MVE)	345	6.49	1.15	5.66	6.42	7.18
BTM	345	0.29	0.29	0.13	0.24	0.38

Notes: Table 2, Panel A provides descriptive statistics for our sample of firms. The data used in this study is collected from a variety of sources including the transcripts of IPO roadshows, Compustat, CRSP, SDC Platinum, the SEC EDGAR database, and Jay Ritter's IPO database. The motivations and descriptions for all variables appear in Sections 2.2, 3.1, and 3.2 of this paper.

Table 2. Descriptive Statistics, continued

Panel B: Pearson Correlation Coefficients

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	Price_Revision	1																								
2	$BHAR_{90}$	-0.19	1																							
3	$BHAR_{365}$	-0.12	0.48	1																						
4	Tone_Diff	0.17	-0.14	-0.14	1																					
5	Uncertain_Diff	-0.10	-0.04	-0.03	-0.43	1																				
6	Tone_S1	0.17	-0.03	-0.08	0.08	0.18	1																			
7	Uncertain_S1	-0.17	0.09	0.14	-0.30	-0.27	-0.78	1																		
8	Tone_RS	0.21	-0.14	-0.15	0.95	-0.34	0.40	-0.52	1																	
9	Uncertain_RS	-0.21	0.03	0.08	-0.61	0.67	-0.44	0.53	-0.70	1																
10	Ln(Assets)	0.11	-0.08	-0.01	0.40	-0.03	0.29	-0.50	0.47	-0.42	1															
11	TobinsQ	0.32	-0.07	-0.15	0.01	0.02	-0.08	0.10	-0.02	0.09	-0.41	1														
12	Operating_Perf	0.33	-0.12	-0.08	0.44	-0.14	0.30	-0.46	0.50	-0.48	0.59	-0.04	1													
13	GConcern	-0.29	0.09	0.06	-0.16	0.12	-0.23	0.23	-0.22	0.29	-0.27	-0.04	-0.43	1												
14	Startup	-0.24	0.12	0.13	-0.54	0.14	-0.25	0.49	-0.58	0.50	-0.60	0.04	-0.65	0.36	1											
15	R&D_Intensity	-0.24	0.18	0.06	-0.43	0.16	-0.22	0.43	-0.47	0.47	-0.63	0.23	-0.77	0.34	0.56	1										
16	Ln(Age)	-0.06	-0.08	0.01	0.27	-0.02	0.22	-0.30	0.32	-0.25	0.49	-0.35	0.25	-0.12	-0.40	-0.23	1									
17	Ln(Proceeds)	0.03	-0.04	-0.04	0.19	0.00	0.18	-0.31	0.24	-0.24	0.78	-0.28	0.27	-0.12	-0.30	-0.30	0.32	1								
18	Retained	0.35	-0.07	-0.11	0.25	0.01	0.10	-0.18	0.26	-0.13	0.27	0.56	0.33	-0.18	-0.31	-0.19	-0.08	0.14	1							
19	Underwriter	0.22	-0.01	-0.03	0.21	0.01	0.11	-0.19	0.23	-0.14	0.33	0.17	0.34	-0.22	-0.28	-0.19	0.06	0.29	0.36	1						
20	VC	0.02	0.08	-0.03	-0.33	0.12	-0.25	0.42	-0.39	0.42	-0.67	0.45	-0.35	0.16	0.45	0.51	-0.49	-0.44	0.08	0.03	1					
21	Big4	0.10	0.01	-0.07	0.01	0.04	0.01	0.04	0.02	0.06	0.10	0.11	0.01	-0.03	0.00	0.10	-0.02	0.15	0.19	0.37	0.15	1				
22	Insider_Own	0.10	0.01	-0.01	-0.11	0.03	-0.06	0.10	-0.13	0.11	-0.38	0.25	-0.12	0.01	0.11	0.14	-0.23	-0.36	-0.05	-0.01	0.18	-0.10	1			
23	IndustryReturn	0.09	-0.09	-0.18	-0.07	0.00	0.04	0.01	-0.06	0.01	-0.08	0.01	-0.02	0.03	0.07	0.06	-0.01	-0.06	-0.06	0.02	0.05	-0.01	0.04	1		
24	IndustryReturn[+]	0.03	-0.04	-0.13	-0.11	-0.01	-0.01	0.06	-0.11	0.05	-0.09	0.03	-0.05	0.03	0.12	0.09	-0.06	-0.07	-0.05	0.02	0.06	-0.04	0.06	0.90	1	
25	Ln(MVE)	0.54	-0.14	-0.13	0.35	-0.04	0.24	-0.38	0.40	-0.33	0.71	0.20	0.50	-0.31	-0.49	-0.41	0.22	0.70	0.65	0.46	-0.31	0.20	-0.21	-0.02	-0.04	1
26	BTM	-0.24	0.12	0.17	-0.09	-0.01	0.06	-0.02	-0.07	-0.02	0.12	-0.50	0.00	0.00	0.06	-0.12	0.05	0.09	-0.37	-0.09	-0.16	-0.09	-0.07	-0.01	0.01	-0.27

Notes: Table 2, Panel B provides Pearson correlation coefficients for each of the variables used in our study. The motivations and descriptions for all variables appear in Sections 2.2, 3.1, and 3.2 of this paper.

Table 3. Roadshow Disclosure Difference and Price Revision

Variables	Price_Revision			
	(1)	(2)	(3)	(4)
Tone_Diff	-0.0138	-0.0099		
	(0.323)	(0.500)		
Uncertain_Diff			-0.0215**	-0.0279**
			(0.050)	(0.024)
Tone_S1		0.0533		
		(0.149)		
Uncertain_S1				-0.0237
				(0.372)
Ln(Assets)	0.0149	0.0144	0.0170	0.0166
	(0.719)	(0.724)	(0.686)	(0.692)
TobinsQ	0.0425**	0.0431**	0.0421**	0.0422**
	(0.041)	(0.044)	(0.045)	(0.047)
Operating_Perf	0.0578	0.0532	0.0562	0.0552
	(0.138)	(0.196)	(0.154)	(0.166)
GConcern	-0.0695***	-0.0675***	-0.0716***	-0.0718***
	(0.006)	(0.009)	(0.004)	(0.004)
Startup	0.0082	0.0041	0.0160	0.0157
	(0.777)	(0.886)	(0.560)	(0.565)
R&D_Intensity	-0.0475	-0.0543*	-0.0385	-0.0384
	(0.125)	(0.092)	(0.219)	(0.231)
Ln(Age)	-0.0277	-0.0284	-0.0268	-0.0268
	(0.116)	(0.113)	(0.122)	(0.125)
Ln(Proceeds)	0.0008	0.0008	-0.0003	-0.0004
	(0.990)	(0.990)	(0.996)	(0.995)
Retained	0.0074	0.0070	0.0073	0.0073
	(0.417)	(0.454)	(0.427)	(0.430)
Underwriter	0.0026	0.0028	0.0014	0.0013
	(0.840)	(0.836)	(0.915)	(0.921)
VC	0.0220	0.0230	0.0265	0.0278
	(0.578)	(0.561)	(0.512)	(0.490)
Big4	0.0211	0.0211	0.0214	0.0223
	(0.354)	(0.374)	(0.358)	(0.355)
Insider_Own	0.0799**	0.0796**	0.0821**	0.0822**
	(0.024)	(0.029)	(0.023)	(0.026)
IndustryReturn	0.0189***	0.0187***	0.0194***	0.0194***
	(0.000)	(0.000)	(0.000)	(0.000)
IndustryReturn $^{+}$	-0.0218***	-0.0215***	-0.0223***	-0.0222***
	(0.004)	(0.004)	(0.003)	(0.003)
Industry Fixed Effects	Included	Included	Included	Included
Time Fixed Effects	Included	Included	Included	Included
Observations	345	345	345	345
R-squared	0.327	0.329	0.327	0.328

Notes: Table 3 presents the results from an OLS regression of price changes during the IPO book building period on various firm and offering characteristics. *Price_Revision* is the percentage change between the price per share initially proposed for the offering and the final offer price. *Tone_Diff* (*Uncertain_Diff*) is defined as *Tone_RS* (*Uncertain_RS*) minus *Tone_S1* (*Uncertain_S1*) and captures the difference in net tone (uncertainty) in the firm's roadshow presentation relative to their last pre-roadshow prospectus. See Sections 3.1 for all other variable definitions. Standard errors are double-clustered by Fama-French 48 industry and year-week. P-values are provided in parentheses below the coefficients. *** designates two-tailed statistical significance at 1%, ** at 5%, and * at 10%.

Table 4. Roadshow Disclosure Difference and Post-IPO Returns

Variables	$BHAR_{90}$ (1)	$BHAR_{365}$ (2)	$BHAR_{90}$ (5)	$BHAR_{365}$ (6)
Tone_Diff	-0.0346**	-0.0895*		
	(0.014)	(0.086)		
Uncertain_Diff			-0.0747	0.0158
			(0.168)	(0.817)
Tone_S1	-0.0026	-0.2120		
	(0.975)	(0.116)		
Uncertain_S1			-0.0290	0.2561**
			(0.458)	(0.039)
Log(MVE)	-0.0179	-0.0337	-0.0175	-0.0316
	(0.227)	(0.273)	(0.254)	(0.270)
BTM	0.1429***	0.2803***	0.1531***	0.2936***
	(0.006)	(0.009)	(0.005)	(0.006)
Operating_Perf	0.0605**	0.0718	0.0554*	0.0688
	(0.040)	(0.594)	(0.078)	(0.639)
Startup	0.0081	0.1204	0.0368	0.1333
	(0.847)	(0.223)	(0.387)	(0.143)
R&D_Intensity	0.2314***	0.1306	0.2531***	0.1258
	(0.000)	(0.657)	(0.000)	(0.655)
GConcern	0.0370	0.0206	0.0376	0.0199
	(0.134)	(0.750)	(0.186)	(0.769)
Underwriter	0.0209	0.0402	0.0201	0.0393
	(0.401)	(0.257)	(0.406)	(0.271)
VC	-0.0253	-0.1774***	-0.0134	-0.1867***
	(0.167)	(0.003)	(0.575)	(0.002)
Observations	345	345	345	345
R-squared	0.062	0.068	0.065	0.069

Notes: Table 4 presents the results from an OLS regression of post-IPO abnormal stock returns on various firm and offering characteristics. $BHAR_{90}$ ($BHAR_{365}$) is defined as the firms' post-IPO buy-and-hold abnormal returns over the 90 (365) days following the firm's IPO, using the CRSP-value weighted index over that same period as the benchmark. *Tone_Diff* (*Uncertain_Diff*) is defined as *Tone_RS* (*Uncertain_RS*) minus *Tone_S1* (*Uncertain_S1*) and captures the difference in net tone (uncertainty) in the firm's roadshow presentation relative to their last pre-roadshow prospectus. See Sections 3.2 for all other variable definitions. Standard errors are double-clustered by Fama-French 48 industry and year-week. P-values are provided in parentheses below the coefficients. *** designates two-tailed statistical significance at 1%, ** at 5%, and * at 10%.

Table 5. Disclosure Differences and Firm Uncertainty

Panel A: Role of Firm Uncertainty on Roadshow Disclosure Difference and Price Revision

	Price_Revision			
Sample Partition	GConcern=1	GConcern=0	GConcern=1	GConcern=0
Variables	(1)	(2)	(3)	(4)
Tone_Diff	0.0585*	-0.0330**		
	(0.081)	(0.028)		
	F Test			
	p-value = 0.017**			
Uncertain_Diff			-0.1063*	-0.0026
			(0.066)	(0.870)
			F Test	
			p-value = 0.049**	
Remaining Variables	Included	Included	Included	Included
Industry Fixed Effects	Included	Included	Included	Included
Time Fixed Effects	Included	Included	Included	Included
Observations	96	249	96	249
R-squared	0.453	0.338	0.484	0.328

Notes: Table 5, Panel A presents the results from an OLS regression of price changes during the IPO book building period on various firm and offering characteristics. *GConcern* is an indicator variable that takes the value of one if the firm's management includes discussion of a going concern in its pre-roadshow prospectus, zero otherwise. *Price_Revision* is the percentage change between the price per share initially proposed for the offering and the final offer price. *Tone_Diff* (*Uncertain_Diff*) is defined as *Tone_RS* (*Uncertain_RS*) minus *Tone_S1* (*Uncertain_S1*) and captures the difference in net tone (uncertainty) in the firm's roadshow presentation relative to their last pre-roadshow prospectus. Standard errors are double-clustered by Fama-French 48 industry and year-week. P-values are provided in parentheses below the coefficients. *** designates two-tailed statistical significance at 1%, ** at 5%, and * at 10%.

Table 5. Disclosure Differences and Firm Uncertainty, continued

Panel B: Role of Firm Uncertainty on Roadshow Disclosure Difference and Post-IPO Stock Returns

	$BHAR_{90}$		$BHAR_{365}$		$BHAR_{90}$		$BHAR_{365}$	
Sample Partition	GConcern=1	GConcern=0	GConcern=1	GConcern=0	GConcern=1	GConcern=0	GConcern=1	GConcern=0
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tone_Diff	-0.0683	-0.0133	-0.2376***	-0.0390				
	(0.163)	(0.628)	(0.003)	(0.521)				
	F Test		F Test					
	p-value = 0.408		p-value = 0.073*					
Uncertain_Diff					-0.2511***	-0.0130	-0.2906	0.1344*
					(0.000)	(0.828)	(0.159)	(0.078)
					F Test		F Test	
					p-value = 0.002***		p-value = 0.082*	
Remaining Variables	Included	Included	Included	Included	Included	Included	Included	Included
Observations	96	249	96	249	96	249	96	249
R-squared	0.197	0.073	0.208	0.068	0.145	0.091	0.153	0.095

Notes: Table 5, Panel B presents the results from an OLS regression of post-IPO abnormal stock returns on various firm and offering characteristics. *GConcern* is an indicator variable that takes the value of one if the firm's management includes discussion of a going concern in its last pre-roadshow prospectus, zero otherwise. $BHAR_{90}$ ($BHAR_{365}$) is defined as the firms' post-IPO buy-and-hold abnormal returns over the 90 (365) days following the firm's IPO, using the CRSP-value weighted index over that same period as the benchmark. *Tone_Diff* (*Uncertain_Diff*) is defined as *Tone_RS* (*Uncertain_RS*) minus *Tone_S1* (*Uncertain_S1*) and captures the difference in net tone (uncertainty) in the firm's roadshow presentation relative to their last pre-roadshow prospectus. See Sections 3.2 for all other variable definitions. Standard errors are double-clustered by Fama-French 48 industry and year-week. P-values are provided in parentheses below the coefficients. *** designates two-tailed statistical significance at 1%, ** at 5%, and * at 10%.

Table 6. Word-List Level Components of Roadshow Disclosure Difference

Panel A - Descriptive Statistics of Word-List Level Components

Variable		1	2	3	4	5	6	7	8	Mean	S.D.	Q1	Mdn	Q3
Pos_Diff	1	**1**								1.03	0.58	0.62	0.97	1.43
Neg_Diff	2	**-0.21**	**1**							-1.04	0.28	-1.25	-1.06	-0.88
Unc_Diff	3	0.06	**0.19**	**1**						-0.93	0.23	-1.10	-0.95	-0.78
Pos_S1	4	**-0.17**	-0.01	-0.04	**1**					0.76	0.12	0.68	0.76	0.83
Neg_S1	5	**-0.29**	**-0.17**	**-0.18**	**0.12**	**1**				1.61	0.24	1.44	1.59	1.78
Unc_S1	6	**-0.47**	-0.08	**-0.41**	0.08	**0.53**	**1**			1.47	0.16	1.37	1.47	1.57
Pos_RS	7	**0.98**	**-0.22**	0.06	0.04	**-0.27**	**-0.45**	**1**		1.79	0.57	1.37	1.73	2.20
Neg_RS	8	**-0.39**	**0.71**	0.03	0.08	**0.57**	**0.31**	**-0.38**	**1**	0.57	0.34	0.32	0.48	0.74
Unc_RS	9	**-0.26**	**0.14**	**0.76**	0.02	**0.18**	**0.27**	**-0.26**	**0.25**	0.53	0.22	0.38	0.50	0.65

Notes: Table 6, Panel A provides descriptive statistics for the word-list level disclosure components for our sample of firms. The data comes from the transcripts of IPO roadshows and regulatory filings obtained from the SEC EDGAR database. The motivations and descriptions for all variables appear in Section 4.1 of this paper.

Panel B - Components of Roadshow Disclosure Differences

	Price_Revision	BHAR$_{90}$	BHAR$_{365}$
Variables	(1)	(2)	(3)
Pos_Diff	-0.0342	-0.0730***	-0.0887
	(0.108)	(0.001)	(0.216)
Neg_Diff	-0.0375**	-0.0345	0.1257
	(0.030)	(0.448)	(0.196)
Unc_Diff	0.0033	-0.2218*	-0.2223*
	(0.957)	(0.084)	(0.052)
Pos_S1	0.1203	0.1059	0.3242*
	(0.208)	(0.638)	(0.055)
Neg_S1	-0.0362	0.0464	0.3883**
	(0.579)	(0.438)	(0.025)
Unc_S1	0.0343	-0.3356***	-0.2151
	(0.807)	(0.007)	(0.427)
Remaining Variables	Included	Included	Included
Industry Fixed Effects	Included	Excluded	Excluded
Time Fixed Effects	Included	Excluded	Excluded
Observations	345	345	345
R-squared	0.336	0.089	0.089

Notes: Table 6, Panel B presents the results from an OLS regression of price changes during the IPO book building period or post-IPO abnormal returns on various firm and offering characteristics. *Price_Revision* is the percentage change between the price per share initially proposed for the offering and the final offer price. *BHAR$_{90}$* (*BHAR$_{365}$*) is defined as the firms' post-IPO buy-and-hold abnormal returns over the 90 (365) days following the firm's IPO, using the CRSP-value weighted index over that same period as the benchmark. *Pos_Diff* is defined as *Pos_RS* minus *Pos_S1* and captures the difference in positive tone in the firm's roadshow presentation relative to their last pre-roadshow prospectus. Similar measures are created for *Neg_Diff* and *Unc_Diff* that capture the respective differences in negative tone and uncertainty in the firm's roadshow presentation relative to their last pre-roadshow prospectus. See Section 4.1 for additional information about the motivation and definition of these variables. Standard errors are double-clustered by Fama-French 48 industry and year-week. P-values are provided in parentheses below the coefficients. *** designates two-tailed statistical significance at 1%, ** at 5%, and * at 10%.

Table 7. Comparison of Filing and Roadshow Topics

Panel A - Topic Comparison across Filing and Roadshow Settings

	S-1 Filing					Roadshow Transcript					t-test
Variable	Mean	S.D.	Q1	Mdn	Q3	Mean	S.D.	Q1	Mdn	Q3	p-value
Business	0.21	0.07	0.16	0.20	0.27	0.80	0.06	0.76	0.80	0.85	0.000***
MD&A	0.21	0.06	0.17	0.21	0.25	0.11	0.05	0.07	0.11	0.14	0.000***
Risk_Factors	0.21	0.05	0.18	0.21	0.24	0.05	0.02	0.03	0.05	0.06	0.000***
Management	0.18	0.05	0.15	0.18	0.21	0.04	0.02	0.02	0.03	0.05	0.000***
Other	0.18	0.03	0.16	0.18	0.20	0.01	0.01	0.00	0.00	0.01	0.000***

Notes: Table 7, Panel A examines whether the topical content focused on by management differs between the firm's final pre-roadshow prospectus and their roadshow presentation. S-1 filing topics are determined based on the table of contents headings. Roadshow presentation topics are determined by using machine learning to classify the roadshow pitch sentences based on S-1 filing topics. See Section 4.2 for additional information about this process. P-values are provided to indicate the statistical significance of mean differences, calculated from performing t-tests. *** designates two-tailed statistical significance at 1%, ** at 5%, and * at 10%.

Panel B - Net Tone Comparison across Filing and Roadshow Settings

	Net Tone					t-test (p-values reported)						
Setting	Mean	S.D.	Q1	Mdn	Q3	ID	1	2	3	4	5	6
Roadshow	1.23	0.77	0.68	1.26	1.76	1						
S1_All	-0.82	0.25	-0.98	-0.81	-0.66	2	0.000					
S1_Business	0.13	0.88	-0.56	0.14	0.77	3	0.000	0.000				
S1_MD&A	-0.43	0.34	-0.64	-0.41	-0.21	4	0.000	0.000	0.000			
S1_RiskFactors	-2.60	0.47	-2.92	-2.60	-2.25	5	0.000	0.000	0.000	0.000		
S1_Management	-0.46	0.31	-0.67	-0.46	-0.27	6	0.000	0.000	0.000	0.164	0.000	
S1_Other	-0.37	0.19	-0.50	-0.36	-0.23	7	0.000	0.000	0.000	0.003	0.000	0.000

Notes: Table 7, Panel B examines whether the net tone differs between the roadshow presentation and the individual sections of the firm's final pre-roadshow prospectus. Net Tone_is defined for the roadshow (i.e., *Tone_RS*) and each of the individual sections of the firm's regulatory filing by taking the difference between the number of positive and negative words divided by the total number of words therein. P-values are provided to indicate the statistical significance of differences calculated from t-tests. *** designates two-tailed statistical significance at 1%, ** at 5%, and * at 10%.

Panel C - Uncertainty Comparison across Filing and Roadshow Settings

	Uncertainty					t-test (p-values reported)						
Setting	Mean	S.D.	Q1	Mdn	Q3	ID	1	2	3	4	5	6
Roadshow	1.12	0.45	0.79	1.03	1.41	1						
S1_All	3.07	0.35	2.83	3.03	3.30	2	0.000					
S1_Business	2.58	0.77	1.96	2.49	3.18	3	0.000	0.000				
S1_MD&A	2.35	0.41	2.06	2.32	2.58	4	0.000	0.000	0.000			
S1_RiskFactors	6.77	0.57	6.41	6.80	7.16	5	0.000	0.000	0.000	0.000		
S1_Management	1.92	0.32	1.70	1.93	2.13	6	0.000	0.000	0.000	0.000	0.000	
S1_Other	2.04	0.23	1.87	2.03	2.18	7	0.000	0.000	0.000	0.000	0.000	0.000

Notes: Table 7, Panel C examines whether the uncertainty differs between the roadshow presentation and the individual sections of the firm's final pre-roadshow prospectus. Following Loughran and McDonald (2013), uncertainty_is defined for the roadshow (i.e., *Uncertain_RS*) and each of the individual sections of the firm's regulatory filing by taking the percent of words that are in the union of the uncertain, negative, or weak modal word lists. P-values are provided to indicate the statistical significance of differences calculated from t-tests. *** designates two-tailed statistical significance at 1%, ** at 5%, and * at 10%.

Table 8. Determinants of Filing and Roadshow Disclosure

VARIABLES	Tone_S1 (1)	Tone_RS (2)	Tone_Diff (3)	Uncertain_S1 (4)	Uncertain_RS (5)	Uncertain_Diff (6)
Ln(Assets)	0.0067	0.0195	0.0073	-0.0424	0.0590**	0.0999**
	(0.800)	(0.530)	(0.862)	(0.190)	(0.027)	(0.019)
TobinsQ	-0.0152	0.0218	0.0330	0.0049	0.0120	0.0043
	(0.339)	(0.365)	(0.209)	(0.755)	(0.652)	(0.832)
Operating_Perf	0.0868***	0.0851	0.0031	-0.0257	-0.0896**	-0.0620**
	(0.000)	(0.164)	(0.958)	(0.252)	(0.026)	(0.035)
GConcern	-0.0506	0.1490***	0.1997***	-0.0167	0.0267	0.0370
	(0.111)	(0.003)	(0.003)	(0.503)	(0.415)	(0.219)
Startup	0.0968***	-0.2103***	-0.3092***	-0.0546**	0.1093	0.1671**
	(0.001)	(0.008)	(0.000)	(0.030)	(0.120)	(0.038)
R&D_Intensity	0.1476***	-0.1373**	-0.2952***	-0.0533	0.1626**	0.2272***
	(0.000)	(0.045)	(0.001)	(0.272)	(0.035)	(0.000)
Ln(Age)	0.0135	0.0008	-0.0111	-0.0112	0.0200	0.0358
	(0.497)	(0.988)	(0.794)	(0.523)	(0.499)	(0.336)
Ln(Proceeds)	0.0014	-0.0247	-0.0178	0.0124	-0.0542*	-0.0638
	(0.973)	(0.437)	(0.731)	(0.777)	(0.051)	(0.276)
Retained	0.0067	0.0132	0.0102	0.0004	-0.0014	0.0003
	(0.514)	(0.535)	(0.651)	(0.960)	(0.879)	(0.984)
Underwriter	-0.0088	0.0600*	0.0665*	0.0015	-0.0099	-0.0146
	(0.601)	(0.093)	(0.060)	(0.944)	(0.607)	(0.523)
VC	-0.0099	-0.1238*	-0.1143*	0.0181	0.1555***	0.1397**
	(0.777)	(0.066)	(0.067)	(0.668)	(0.002)	(0.025)
Big4	0.0046	-0.0375	-0.0420	0.0382	0.0170	-0.0110
	(0.912)	(0.642)	(0.640)	(0.211)	(0.852)	(0.878)
Insider_Own	0.0102	-0.0805	-0.0782	-0.0099	0.0336	0.0477
	(0.784)	(0.392)	(0.351)	(0.850)	(0.595)	(0.379)
Industry Fixed Effects	Included	Included	Included	Included	Included	Included
Time Fixed Effects	Included	Included	Included	Included	Included	Included
Observations	345	345	345	345	345	345
R-squared	0.263	0.513	0.431	0.539	0.436	0.152

Notes: Table 8 presents the results from an OLS regression of disclosure characteristics from the firm's last pre-roadshow prospectus and roadshow presentation on various firm and offering characteristics. *Tone_S1* (*Tone_RS*) is defined as the difference between the number of positive and negative words in the firm's final pre-roadshow prospectus (roadshow presentation) divided by the total number of words therein. *Uncertain_S1* (*Uncertain_RS*) is defined as the percentage of words in the firm's final pre-roadshow prospectus (roadshow presentation) that are in the union of the uncertain, negative, or weak modal word lists. *Tone_Diff* (*Uncertain_Diff*) is defined as *Tone_RS* (*Uncertain_RS*) minus *Tone_S1* (*Uncertain_S1*) and captures the difference in net tone (uncertainty) in the firm's roadshow presentation relative to their last pre-roadshow prospectus. See Sections 3.1 for all other variable definitions. Standard errors are double-clustered by Fama-French 48 industry and year-week. P-values are provided in parentheses below the coefficients. *** designates two-tailed statistical significance at 1%, ** at 5%, and * at 10%.