

What Do Investors Ask Managers Privately?

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Managers extensively interact with investors privately. While recent research finds that investors benefit from these offline interactions, little is known about what information is sought during these events. Using field data of over 1,200 questions asked during private meetings, we characterize the information sought by investors during offline meetings. We show that investors seek to acquire more timely information, more depth and clarity of public news, and feedback on their investment theses. Numerous questions seek information that— if provided by managers— potentially violates Regulation Fair Disclosure (Reg FD). We also find that some types of questions asked during meetings are associated with the likelihood of trading and that questions posed privately to managers tend to be more negative in tone than those asked publicly during conference calls. Overall, our investigation illuminates the nature of offline managerial interaction and the kinds of information that investors privately seek.

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1. Introduction

Investors and managers of publicly traded firms spend a considerable amount of time speaking privately. According to the consultancy Ipreo, the average publicly traded firm conducts more than 100 one-on-one meetings annually with investors (Ipreo 2016). Brown, Call, Clement, and Sharp (2017) survey hundreds of investor relations officers and find 70% of firms grant offline access to senior executives.¹ Private interactions between investors and executives occur at a variety of venues including conferences, investors' offices, and firms' headquarters (Solomon and Soltes 2015).

A growing body of literature provides evidence that these offline interactions offer investors in attendance opportunities to make more informed trading decisions (Bushee, Jung, and Miller 2017, Mukhopadhyay 2017, Bushee, Gerakos, and Lee 2016, Kirk and Markov 2016, and Solomon and Soltes 2015). However, what actually goes on during these interactions has largely been elusive. In fact, even systematically establishing when or where these meetings occur has been a challenge and required clever inference strategies such as gathering conference meeting agendas (e.g. Bushee, Jung, and Miller 2017) and private jet schedules (Bushee, Gerakos, and Lee 2016). Ultimately, without knowing the content of the offline interaction between managers and investors, researchers can only speculate about the nature of these events for investors and managers.

In this paper, we seek to better understand the content of private manager-investor interactions by exploring over 1,200 questions posed by investors during private meetings with firm managers from two publicly traded firms. We acquired access to this unique field data by embedding a confederate with extensive investor relations experience in two firms from 2015 to 2016. This research associate recorded the questions asked by investors as well as the background of the investors posing the questions.

Working with investor relations officers (IROs), we devised a classification system for the questions posed by investors and found that they can be categorized into five distinct groups. The first type seeks more detailed insight and clarity of information that is already publicly available. For example, for the biotechnology firm in our sample, one investor asked if the final product would be manufactured in the same facility as the product used in regulatory trials. Other types include questions inquiring about management philosophy (e.g. "What keeps you up at night?"), questions seeking public information more efficiently (e.g. "Can you tell me about the level of share ownership by senior management?"), and questions seeking managers' feedback on proprietary ideas and investment theses (e.g. "What looks more attractive right now: M&A activity or share buybacks?").

¹ Brown et al. (2017) further investigate the likelihood of granting access to executives for different kinds of investors. Institutional investors working for large investment firms are the most likely to have their requests granted, whereas hedge funds are the least likely. Depending on the venue (e.g. conference vs. in-house events) managers will have greater or lesser control on deciding which investors will have their requests granted (Solomon and Soltes 2015).

Finally, the fifth type of questions are those seeking more timely information from managers. These are questions where the investor seeks data or information that is more recent than that available from public sources. For instance, one question that we observe investors frequently asking is around *current* cash holdings. Notably, the investor is not seeking the figure publicly disclosed in the 10-Q a month prior to the meeting. Rather, they are seeking to acquire an update of the financial statement information as of the date of the meeting.

We examine whether the types of questions asked by investors are predictable based on the personal background of the investor, their shareholdings in the firm, the characteristics of the fund they work for, and the venue where the offline interaction took place. Broadly, we find that in numerous instances the type and frequency of questions are strongly associated with several of these characteristics. In particular, investors who are more experienced and meet with managers of the firm more often are more likely to ask timely questions. Moreover, investors who hold a position in the firm, work for larger funds, and meet more often are less likely to ask efficiency questions that are readily answered by referring to public data sources.

We have data on the venues of meetings (i.e. conference, roadshow, or private phone call) and find that investors who gain access to management during a roadshow or private call ask the most questions. However, the greater number of questions asked during roadshows tends to be driven by the fact that the duration of the interactions is longer on average for roadshows. When the duration of the interaction is taken into account, conference meetings and private calls tend to be the most efficient meetings in terms of the number of questions asked. Management philosophy questions (e.g. “What keeps you up at night?”) potentially convey direct informational benefits, but also offer insight into managers via their body language and expression. We find that investors tend to less frequently ask such philosophical questions during private calls as compared to physical in-person interactions.

We also examine the differences in the types of questions asked publicly (during conference calls) to those asked privately during offline meetings. We find that the vast majority of questions on public conference calls are questions seeking greater detail, and we find no examples of timely or efficiency questions being asked. In the spirit of Jung, Wong, and Zhang (2017)’s analysis that examines differences in buy-side and sell-side analysts asking questions, we find that the number of dialogues is similar between public and private meetings, but the lack of superfluous pleasantries tend to mean that there is more interaction in private settings. Brown, Call, Clement, and Sharp (2016) find in their interviews that questions posed publicly may be “softball” questions that are unlikely to embarrass management. Supporting the arguments in Brown et al (2016), we find that questions asked publicly to management tend to be considerably more positive than those questions asked privately. Thus, we find a number of distinct differences between the types of questions posed publicly and privately for our sample firms.

Prior research on private meetings has examined whether offline interactions are associated with changes in trading of the firm's security. We further expand this analysis by examining whether such trading around private meetings is predominately associated with certain kinds of meetings based on the types of questions asked by investors. We find that aggregate trading in a firm's security is higher when more forward looking questions are asked. Moreover, we find that when investors ask more forward looking or negative questions during private interactions, they are more likely to increase or decrease their position in the firm over the quarter. While this analysis is subject to a number of caveats associated with our ability to measure changes in ownership surrounding meetings, this preliminary evidence suggests certain kinds of interactions between managers and investors are more likely to generate the kinds of "benefits" associated with private meetings that has been documented in the prior literature.

Overall, our analysis begins to illuminate the confidential interactions between managers and investors. The fact that our sample firms would allow us to record these interactions suggests that they believed they conservatively approached these interactions with investors. Nonetheless, the nature of some of the questions— in particular those related to acquiring more timely information— and managers' potential willingness to respond shows the difficulty in easily classifying what is viewed as permitted under Reg FD.

Gaining access to offline meetings between senior executives and investors poses significant challenges. Among other hurdles associated with this fieldwork was acquiring the consent of senior executives and their general counsel, considerable travel to different locations for the different meetings, and extensive time recording questions during meetings. To avoid the potential impact of a researcher affecting the meeting (i.e. a researcher's presence could impact how an investor engages with management), we employed a confederate to record questions during meetings. When introduced at the start of the meeting, this confederate was presented as a bonafide member of the management team who was seeking to better understand the firm's meeting practices (discussed more in Section 3). Ultimately given these costs, we were able to acquire data from two firms and our analysis primarily draws on the biotechnology firm for which we have a larger sample of questions.

By focusing on the interactions at the firm, rather than investor level, we can analyze how questions vary by investor (Bloomfield, Nelson, and Soltes 2016). Nevertheless, access to data for more firms is needed to better understand the external generalizability of the types and frequency of questions posed to managers privately. Some analyses, in particular how posing different types of questions is related to subsequent trading activity, are unfortunately limited because of the small size of our empirical dataset. In addition, because of the potential legal concerns with possessing records of management's responses during these interactions, we recorded the questions posed by investors and not the responses provided by

management. Despite these caveats, our data and analysis is the first to allow researchers to peer into these significant events for both executives and investors.²

Our analysis contributes to several areas. First, a growing body of literature has shown numerous benefits of privately interacting with managers (e.g. Bushee, Jung, and Miller 2017, Mukhopadhyay 2017, Bushee, Gerakos, and Lee 2016, Kirk and Markov 2016, and Solomon and Soltes 2015). In these studies, the actual contents of offline interactions has remained elusive. Thus, our analysis is the first to help researchers better understand what happens during these private interactions and the kinds of information sought by investors. We also provide preliminary evidence of how these private interactions differ from other public interactions (e.g. Jung, Wong, and Zhang (2017)). In this spirit, we also provide some confirmatory evidence for the statements made by subjects interviewed in Brown, Call, Clement, and Sharp (2016) where we find that “softball” questions (i.e. more positive in tone) are more likely in public interactions.

Our analysis also contributes to the accounting literature on firm disclosure. Although private meetings serve as an important channel for disclosure, researchers have historically relied on the information publicly disclosed by managers in regulatory filings (e.g. 10-K, 10-Q, 8-K) and press releases. Our work shows that there is potentially a rich set of additional disclosures that have historically been unobserved to researchers but potentially need to be deeply considered when thinking about firm disclosure policy. Our analyses help describe the relative frequency by which other kinds of information disclosures are sought by investors.

In addition, while managers disclose a considerable amount of “other” information in offline interactions, the literature has not understood what this information is and how it potentially serves as a complement or substitute for other sources of public information. Our research shows that in some instances, private disclosure serves as a clear substitute (i.e. investor efficiency questions), and in other instances it is a potential complement (i.e. detail questions). This demand for offline disclosures shows that there is information from managers that investors seek beyond what managers provide publicly. For instance, an investor in our sample firm BIOTECH wants more timely updates on cash to make investment decisions. To the extent that there are certain kinds of information that investors consistently seek in a more timely way, it raises the question of whether it is beneficial for managers to provide this information publicly on a more regular basis. In our sample, 26 distinct investors asked executives at the BIOTECH firm for a more recent update of the firm’s cash position. This suggests that publicly disclosing this information more frequently than on a quarterly basis could better satisfy the information demands of

² To the best of our knowledge, even commercial providers of investor relations products have been unable to access or analyze the contents of offline meetings. Thus, commercial IR surveys, which are often employed by researchers to help better understand these private meetings contains little information about the contents of these offline interactions.

investors. Such considerations need to be viewed from the standpoint of not just efficient pricing and trading of securities, but also regulatory restrictions on private disclosure (i.e. Reg FD and insider trading regulations).

2. Background and Impact of Private Interaction between Managers and Investors

Investors rely on a variety of disclosure mediums including regulatory filings, press releases, conference calls, and social media to better understand the firms they are invested in or potentially may invest in. One of the most direct means of reducing information asymmetry between managers and investors is for investors to speak personally with firm managers (Brown et al. 2017). Such interactions can occur at conferences, non-deal roadshows, and at corporate headquarters (see Solomon and Soltes 2015 for a detailed description of different offline meeting types). Investors attending such events are typically given the opportunity to speak with senior management of the firm for thirty minutes, or potentially longer depending on the venue. These meetings are often arranged and paid for by sell-side analysts who offer such meetings to brokerage clients who trade through their firms (Soltes 2014).

Out of the concern that some investors might be getting preferential access to material information during such interactions, regulators passed Regulation Fair Disclosure (Reg FD) in the fall of 2000. This regulation prohibits managers from privately conveying material information to select investors. Such information includes any information “that a reasonable shareholder would consider...important in making an investment decision” (SEC RIN 3235-AH82). Despite the passage of the regulation, managers continue to meet often with investors. A survey by Thomson Reuters found that 97% of CEOs of publicly traded firms meet privately with investors (Thomson Reuters 2009). As long as managers do not provide information “that a reasonable shareholder would consider...important in making an investment decision” to investors in attendance, they are acting within the confines of the regulation.

As the meetings are private, the frequency of interactions is not directly observable from public data, but several recent surveys provide an indication of the frequency of such interactions.³ According to the consulting firm Ipreo, the average firm conducted 114 one-on-one meetings in 2015 (Ipreo 2016). Often these interactions occurred at industry conferences with the average firm in the U.S attending five such events in 2015 (Ipreo 2016). As further evidence indicating how private investor meetings consume managerial time, managers at the average North American firm spent 14 days in 2015 on the road meeting with investors (IR Magazine 2015).

³ An unusual exception is General Electric that does publicly disclose the number of offline meetings. In particular, in GE’s 2015 10-K, the firm stated that “In 2014, we further ensured strong disclosure by holding approximately 70 analyst and investor meetings with GE leadership present” (GE 2015, 124). In addition, the Shenzhen Stock Exchange requires listed firms to publicly report site visits, which provides an indication of how often these firms meet (Cheng et al 2016).

A body of prior academic literature finds that investors who gain access to managers privately make more informed trades. Solomon and Soltes (2015) investigate the trading of investors who privately met with executives of a mid-capitalization insurance firm over a six-year period. They find evidence that investors who meet are subsequently more likely to buy before the stock rises and sell before it falls. Bushee, Jung, and Miller (2017) examine a large sample of invitation-only investor conferences where managers meet investors privately during breakout sessions. They find increased trading volume during times when firms are conducting offline meetings which is consistent with investors trading on the information they receive selectively during private meetings. Bushee, Gerakos, and Lee (2016) investigate a unique sample of hundreds of thousands of corporate plane flights as a proxy for manager non-deal roadshows. They find evidence of greater abnormal stock reactions during such roadshow periods. Finally, Kirk and Markov (2016) provide evidence showing how analyst/investor days (when investors have the opportunity to engage in face-to-face interactions with managers) serve as a separate and economically significant disclosure medium. Together, this evidence provides compelling support that investors benefit from the information collected during these private interactions.⁴

While the potential benefits to investors of engaging offline with managers has been well documented, other than researchers knowing when a meeting took place (through direct observation in small sample or via proxy in larger sample analysis), little is known about the dialogue between managers and investors and what questions investors may seek responses to. Anecdotal evidence in press articles describe meetings where investors seek detailed information on specific firm matters (e.g. *Wall Street Journal*, “How Some Investors Get Special Access to Companies,” September 27, 2015.) As described in such press articles, the questions are narrowly focused and technical in nature. Notably, they are matters that would not likely draw scrutiny as being material in nature regardless of how management sought to respond.⁵ However, this evidence is primarily anecdotal and based on second hand descriptive accounts, rather than real time recording of questions during the meetings.

The frequency with which these interactions occur and the cost of hosting these meetings (both in senior executive time and hosting expenses) suggest that they are significant events that differ from other firm disclosure events such as those that take place in regulatory filings, conference calls, and social media. In this investigation, we seek to begin illuminating the kinds of information sought by investors by

⁴ A parallel literature explores the benefits (information and commission-related) that analysts receive from engaging privately with management. See Green et al (2014a), Green et al (2014b), Soltes (2014), and Cheng et al (2016).

⁵ Investors also describe the value associated with gestures and body language conveyed during meetings. Several recent papers provide support of the value of this less formal communication. Blankespoor, Hendricks, and Miller (2017) show, for instance, how visual perceptions of executives influence firm valuation. Mayew and Venkatachalam (2012) provide support that vocal clues provide incremental information about firm fundamentals. This suggests that even in the absence of any discussion that provides investors explicit information, simply how managers engage with investors through their voice and gestures could provide relevant information.

examining the questions they ask senior executives. Moreover, we seek to characterize how these offline meetings differ from another important public disclosure event, conference calls, by comparing questions posed privately to those asked publicly.

3. Data on Private Interactions

Private meetings between investors and executives are viewed as deeply confidential interactions. To investors, these interactions are valuable and most are reluctant to jeopardize their relationship with management by disclosing the contents of meetings to outside parties. To managers, these meetings represent their primary way of connecting with institutional investors, leading to risk-aversion in deviating from industry norms of keeping such discussions confidential. Consequently, little is known outside the attendees about what specifically occurs during these discussions.

Even for company executives themselves, few have a systematic understanding of their dialogues with investors. Some firms assign an investor relations assistant to take notes at meetings, but generally such notes do not record the discussions in a systematic manner. More often, investor relations officers record what they subjectively feel are the most important or frequently asked questions rather than all questions. Such practices lead to potential biases depending on the recall and perceived salience of questions from the perspective of the officer or assistant recording the questions.

Thus, acquiring complete records of managers' interactions with investors requires accessing meetings and recording these questions in real time as they are being asked. To acquire such field data, we gained the approval to attend the private interactions between executives and investors from two publicly traded firms: a biotechnology company ("BIOTECH") and a defense contractor ("DEFENSE").

As the meetings are small, intimate engagements in which each individual is known to all in attendance, a researcher's presence could alter or impact the questions asked. To avoid having a scholar's presence potentially influence the meetings, we embedded a research associate with extensive investor relations experience as a confederate within our sample firms. The confederate had over a decade of experience in investor relations and had participated in a significant number (i.e. hundreds) of meetings professionally prior to serving as a research associate on this project. The confederate sat in attendance in all meetings immediately behind the firm executives (or listened on the phone in the case of a conference call). If an introduction was sought by investors, this confederate was introduced as an "individual who is

seeking to help management better understand the effectiveness of its meeting practices.” In this way, the private meeting itself would not be influenced or altered as a result of our data collection.⁶

Given the sensitive nature of collecting meetings data from both a regulatory and reputational perspective, we agreed to keep both the firms’ identity and that of the investors confidential. In addition, to protect the executives from potential regulatory scrutiny given the sensitivity about how management responds to questions, management’s responses to questions were not recorded.

Our primary analysis focuses on the questions asked to executives of BIOTECH.⁷ BIOTECH had shares listed on the NASDAQ and had a market capitalization nearing \$1 billion. We began capturing meetings in January 2016 and ending in September 2016.⁸ During this period, the firm conducted a total of 71 private interactions with investors at conferences, roadshows, and telephone calls. As we seek to focus on the characteristics of the buy-side investors at the meetings, we focus on the 66 private interactions where we have comprehensive data on those who attended the meeting.⁹ With the exception of a limited number of telephone calls, senior management (e.g. CEO, President) along with the Chief Technology Officer and Chief Medical Officer were in attendance. Management of BIOTECH seeks to accommodate all requests by investors to meet, but preference (e.g. timing, venue) is given to larger institutional investors who are long-term holders or potential buyers of the firm’s stock, which is consistent with the survey evidence in Brown et al. (2017).

Private interactions with executives of BIOTECH occur at industry conferences (in several different cities), non-deal roadshows (where the executives travel to the investors’ offices), and private conference calls. In Table 1, we show the number of private interactions at each of these venues. Investor conferences were the most frequent meeting venue with 30 meetings taking place in 4 different locations (with two separate conferences occurring in West Palm Beach). BIOTECH management flew to investor offices for 17 meetings in roadshow meetings. These interactions were distinguished from other events by their longer average length with investors of 1 hour on average as compared with 30 minutes on average for conference meetings. BIOTECH executives also conducted 19 private phone calls with investors.

⁶ In a number of the roadshow meetings, our research associate was not able to attend. In this case, the firm provided an assistant to record questions for our use. This assistant was trained to record questions in the same manner to preserve consistency across the meeting records.

⁷ We provide several additional descriptive statistics with DEFENSE in later tables. In contrast to BIOTECH, DEFENSE’s offline meetings largely occur in small groups with investors (i.e. with multiple investors in one meeting).

⁸ We originally planned to capture data for one year. However, a change in senior management led to this data collection ending in September.

⁹ For four private interactions, we do not have information about the tenure and experience of the buy-side institutional investors. In addition, one meeting is a two-on-one “private” meeting where investors from two different buy-side institutions met with senior executives. As the nature of this interaction is distinct from others that are genuinely private one-on-one and it is a unique event, we did not place this interaction in the primary tables.

As described in Panel B, the number of questions asked during roadshows and private calls tended to be higher than conferences. One reason for the statistically greater number of questions asked during roadshow events, however, was the fact that the events were longer in duration. In the second subpanel in Panel B, we show the number of questions per hour. In this case, investors actually utilized their time more efficiently in conferences than roadshows by asking more questions per hour. Thus, investors ask more during roadshow events, but investors' use of questioning is more rapidly paced during conferences.

The number of private interactions that particular investors conduct varies considerably as described in Table 2. Out of the 51 different institutional investors that met during the sample period, 66% (n=34) met once either in a conference or roadshow event. Investors that met twice tended to meet once physically (in a roadshow or conference) and speak once over the phone. We also find a small number of investors meeting numerous times during the period. Three investors met at least three times during the sample period (i.e. more than once per quarter). These investors met once physically and then spoke privately over the phone for the additional visits. Two of the three investors that met at least three times during the sample were large hedge funds.

In Panel B of Table 2, we examine the meeting patterns of the different types of investors. Hedge funds that interacted privately with management met with executives on average 1.3 times during the sample period. As described in Soltes (2014), private interactions are often arranged by sell-side analysts. While management may desire to meet with longer term oriented institutional investors, meeting with shorter term oriented hedge funds is often negotiated with analysts as part of the firm's overall meeting strategy as arranged by the analyst. Given the relatively greater latitude that management has in scheduling roadshows, we find that BIOTECH's management is less inclined to visit a hedge fund on a roadshow than an investment advisor. Nonetheless, we do find that BIOTECH still consumes valuable in-person meeting time with hedge funds. The demand for private interactions by hedge funds is supplemented by considerable (n=15) private phone calls.

For the 78 buy-side individuals at the 66 private interactions (where some meetings have more than one person from the same buy-side institution attending the meeting), we also have data on their tenure at their buy-side firm, the duration of their relationship with BIOTECH, and whether their firm holds stock in BIOTECH. In Table 3 Panel A, we find that most investors have between 2-5 years of experience and have been meeting with firm privately for less than a year. To put this duration in comparison, we examined the length of coverage for all sell-side analysts covering biotechnology firms. From 1984-2016, the average

analyst covered a biotechnology firm for 2.5 years.¹⁰ Thus, the relationship of our conversations is comparable, albeit somewhat shorter on average, than the average sell-side analyst for the industry.

In Panel C of Table 3, we look at the holdings of the different investor types that meet. We find that most private interactions occur with non-holders of the stock. Like Heinrichs, Park, and Soltes (2017) who find that most public earnings conference calls are consumed by non-holders, this suggests that buy-side investors who are meeting with executives are considering investing in the firm or have other related investments in the industry.

We also find that the mean holding in the firm is approximately \$5 million. The one holder who is designated by the firm as a venture capitalist had a \$16 million position. While managers of BIOTECH seek to accommodate private meeting requests for all investors that seek to meet with them, priority tends to be given to larger holders of the security and relatively larger institutional investors who tend to hold longer duration equity positions. In this regard, managers at our sample firm have similar preferences to firms described in the industry benchmarks in Solomon and Soltes (2015) and Brown et al. (2017).

4. Analyzing Private Interactions between Managers and Investors

The primary empirical focus of our investigation is to better understand how different investor attributes are associated with the types of questions that are asked during private interactions. In Section 4.1, we explain the categorization of investor questions and provide samples from the data. In Section 4.2, we investigate the relationship between our question types and investor attributes. Finally, in Section 4.3 we examine how questions asked privately differ from those asked in public conference calls.

4.1 Categorization of Private Meeting Questions

Each of the 949 questions from the 66 private interactions was placed into one of five categories: greater depth, management philosophy, investor efficiency, proprietary, or more timely. This schema for categorization was created by speaking with investor relations officers, including the two officers of the sample firms in this paper and several additional officers who are members of the National Investor Relations Institute, about the range of questions they hear. Our motivation underlying this categorization schema is to be able to provide insight into the inquiries made by different types of investors. Moreover, we additionally include a measure of forward-looking questions and negative questions asked by investors whose methodology has been previously explored in the literature.

¹⁰ To calculate the average duration of covered, we examined all sell-side analysts covering a biotechnology firm (SIC=8731) on IBES from 1984-2016. We found 709 analysts covering 37 firms, with the average analyst covering a firm in this sector for 10.2 quarters.

To better understand our classification and the nature of the different inquiries, we describe each of the question types along with representation samples from the data. To the extent that specific words within a question would identify the firm, executive, or product by name, the information was placed in brackets (“[...]”), but otherwise the questions are provided as asked by the investor during the offline interaction.

Greater Depth Questions:

Investors can ask questions that seek greater depth and clarity of news that has already been publicly disclosed about the firm or its operations. These questions build on the information that management has discussed or disclosed previously and seek to examine the topic in greater detail. In most instances, the value of seeking this information would not be clear without first understanding the firm and its operations. These questions often seek to better understand products, operations, manufacturing processes, and research and development processes.

Representative examples of detail/clarity questions include:

- “Was the product manufactured from the same lot as for the trials?”
- “For success, does the p-value need to be .01 or .05?”
- “You have a 20% margin in [product]: what is the breakdown in aftermarket, parts, and MRO?”¹¹

Management Philosophy Questions:

We classify questions that do not pertain to the firm itself or its operations, but rather address management strategy at its broadest level, as management philosophy questions. These questions are abstract, broad, and not particular to the firm itself. An investor’s motivation for asking these questions may be more about understanding the personality and temperament of executives rather than better understanding the operations of the firm. In this regard, the questions are more pertinent to understanding the mentality of the executives than the firm.

Representative examples of management philosophy questions include:

- “What keeps you up at night?”
- “What’s the biggest issue for you?”
- “Why don’t you own more shares?”

¹¹ “MRO” is understood by managers, investors, and analysts to mean “maintenance, repair, and operations.”

Investor Efficiency Questions:

Investors that ask questions regarding information that is readily publicly accessible we describe as investor efficiency questions. These questions do not require the expertise of senior management (e.g. CEO) to answer. The information could have been easily acquired by the investor in advance of the meeting had they taken the time to seek it. In most instances, these questions focus on financial market information about the firm (e.g. stock price, managerial ownership). Investors that ask these questions are able to rapidly acquire information from management which is efficient for investors, but an ineffective use of senior executive time.

Representative examples of investor efficiency questions include:

- “Who are your largest shareholders?”
- “Has the stock price held up since [event]?”
- “How much does management hold of the company’s stock?”

Proprietary Questions:

Investors often choose to question managers offline rather than in public venues (e.g. quarterly earnings conference call) because they have proprietary insights they want to discuss with management, but they do not want to reveal these insights broadly to other market participants (Soltes 2014). For instance, if an investor has an investment thesis about a potential acquisition or change in managerial direction, disclosing this investment thesis to other investors on a conference call would reveal whether the investor is likely to buy or sell stock in the future. Other market participants may seek to trade ahead of this investor, thus making it more difficult for the investor to profitably trade on his or her thesis. Consequently, investors ask these questions during private meetings when they can disclose their ideas and beliefs without revealing them to other market participants.

Representative examples of proprietary questions include:

- “If we wanted to buy stock ‘off the market,’ would you be interested?”
- “What stops another company from buying you?”
- “What looks more attractive right now: M&A activity or share buybacks?”

More Timely Questions:

Firms release financial reports on a quarterly basis and provide intermediate updates to public disclosures between these periods (e.g. press releases, 8-K, and conference calls). Investors considering an investment or currently holding an investment often desire more timely information than what is publicly

available. For instance, the cash balance of the firm two months after the release of the quarterly report may be stale information. Understanding whether the firm has sufficient cash to continue operations may be salient for an investor's investment decision so the investor will seek more timely information from management. From a regulatory perspective (discussed more in Section 6), timely questions appear to pose the greatest regulatory risk for managers in responding. Nonetheless, we find that most private interactions include at least one timely question posed to management.

Representative examples of timely questions include:

- "How much cash do you have now?"
- "Do you know additional sell side analysts that will be launching initiation reports?"
- "Are you done with recruitment or still enrolling?"
- "Are the Q2 earnings call expectations still valid?"

We described the frequency of different question types in Table 4. We find that greater detail questions constitute the majority with 77% of the questions falling into this category, followed by proprietary questions representing 9% as shown in Panel A. The frequency that different types of questions are asked by investors varies across meetings. 59% of private interactions ask at least one question seeking more timely information from management, although these consist of only 6% of all questions asked. This implies that investors in most private interactions ask a timely question, but such questions do not constitute the majority of the time spent or questions asked in the interaction.¹²

In Table 4, Panels B and C we describe the relative incidence of these different questions by holders and non-holders of BIOTECH. We find the aggregate number of questions posed by holders and non-holders is similar with 15 questions and 14 questions respectively. At a univariate level, non-holders and holders ask the same kinds of question in the same frequency with the exception of investor efficiency questions. In particular, holders of BIOTECH are significantly less inclined to ask basic questions about the firm, an observation relying on the fact that they are already knowledgeable about the firm from their prior investment. Beyond this, at a univariate level, the number and type of questions between holders and non-holders is similar.

Appendix 2 provides a description of the types of questions investors asked to DEFENSE in their private meetings with investors. During these interactions, 43 investors asked a total of 278 questions.

¹² In Appendix 1, we also provide a classification based on the contents of the questions of BIOTECH. As a biotech firm, R&D related questions are dominant and 71% of the total number of questions. Although there is some correlation between the two methods of categorization (for example, most R&D related questions are likely to be greater depth questions, and many finance questions seek more timely information), there is still considerable variation as shown in the examples presented.

Despite the difference in the type of firm (large defense contractor vs. small cap biotechnology firm), there are similarities in the frequency of the types of questions asked. As with BIOTECH, detail questions are most often asked. We also find the proprietary questions are the second most common question. The frequency of proprietary questions during a small group private meeting may seem surprising given the presence of other investors. However, the managers of DEFENSE infrequently meet exclusively one-on-one with an investor so this offline group meeting is the most intimate opportunity investors have with executives of the firm. Holders in DEFENSE also ask more questions than non-holders, but the percent of types are similar for holders and non-holders. Overall, the similarity in frequency and percentage of question types asked to DEFENSE and BIOTECH managers offers some comfort that our meetings samples are less likely to be atypical manager-investor private interactions.

4.2 Investor Types and Questions

Using the attributes of the investor's personal background, the characteristics of the fund they work for, and the location of the event, we investigate how investor and meeting traits are associated with different question types in Table 6 (we provide descriptive statistics for the variables used in the model in Table 5).

In Panel A, we examine how the different meeting and investor characteristics contribute to an investor asking at least one question of a particular type. The dependent variable is coded as a 1 if the investor asked any questions of the type (e.g. more timely, proprietary, etc.) during their private interaction. In only one meeting out of the total 66 interactions in our sample does an investor not ask a depth question. Consequently, we exclude this category from the analysis and instead focus on the number of detailed questions in a subsequent panel that examines the number of each type of question asked during the meeting. The regressions are run as logit models with the standard errors clustered by both investor and meeting date.

We examine the propensity of an investor to ask a management philosophy question in model (1). We find that during longer interactions, the likelihood increases substantially. In particular, 73% of philosophical questions were asked during hour (as opposed to half hour) meetings. Investors are less likely to ask philosophical questions during calls and roadshows as compared with conferences. This suggests that despite the more efficient and less casual atmosphere that tends to characterize conferences, investors still find the opportunity to ask these more philosophical questions. One explanation is that this is an opportunity to evaluate the body language of managers which necessitates an in-person interaction (although we do not find a similar tendency to ask at least one philosophical question during in-house roadshows).

Investor efficiency questions are those in which the information could be readily accessed via public sources and would unlikely be viewed as a particularly effective use of senior management time.

Investors who hold stock, meet more often, and come from larger funds are less inclined to ask efficiency questions befitting their greater knowledge of the firm and its management. Holders, for instance, are 15% less likely to include an efficiency question (from 15.9% to 0.5%). Private interactions occur at industry conferences, in-house roadshows, and on private telephone calls. As discussed in Soltes (2014), managers tend to have relatively less control over which investors they meet in industry conference venues in part due to the desire of conference organizers to fill schedules and accommodate investors in attendance. In addition, conferences require the least commitment by both executives and investors since they already are at the same physical location. Thus, managers at conferences are more likely to meet at least some investors privately who have fairly limited knowledge of the firm. We find this difference in conference questions reflected in model (2) where investors ask relatively fewer efficiency questions in both in-house roadshows and calls where executives of BIOTECH exert more selectivity on each investor they meet.

Our model has relatively less explanatory power for describing the characteristics of investors or funds that ask proprietary questions. In particular, the R-squared for our model of proprietary questions is only 14.9% as compared to 33-55% for the other question categories. We find that larger funds are marginally more likely to ask at least one proprietary question and to do so at meetings that occur farther away from earnings releases. To the extent that proprietary questions reflect investors desire to build a thesis which takes time, asking this question when there are less other pressing matters (e.g. immediate release in earnings) may offer greater opportunities.

In model (4), we find that investors who have a deeper relationship with the executives both in terms of how long they have been privately meeting and the frequency in which they met in the prior year ask more timely questions. A standard deviation increase in experience (1.19 years) and last year meeting frequency (0.94 times) is associated with 33.1% and 34.1% increase, respectively, in the likelihood of a timely question being asked. Private meetings that take place within an investor's office are also more likely to include at least one timely question. This suggests that when meetings occur in the most coveted venue (i.e. investor's office, Soltes 2014), investors are more inclined to ask potentially more sensitive timely questions.

We look at the number of days until earnings is released to assess whether investors are more inclined to ask timely questions in the immediate period prior to an earnings release. We actually find weak evidence (10% level) suggesting that timely questions are asked more often farther away from the release of earnings. One explanation for this finding is that investors are willing to wait until the official release rather than asking for timely updates since managers may be reluctant to provide the information at this point. However, when we look at the univariate statistics of when timely questions are asked we find that a quarter of the timely questions are asked in the three weeks (21 days) prior to the release of earnings. In one instance, an investor asks a timely question two days prior to the release of earnings. Thus, we do find

instances where investors seek updates of financial statement information in the period immediately prior to its public release.¹³

In Panel B of Table 6, we examine how the number of questions of each type varies with investor, fund, and meeting characteristics. First, we begin by understanding the variation in the total number of questions asked during different meetings in model (1). As would be expected, longer meeting times contribute to more questions being asked by investors. An extra half-hour of meeting time is associated with 14 additional questions being asked. Average experience measures the duration of the relationship between the investor and executives at the firm in terms of the time they have been meeting privately. To the extent there is more than one person from the same firm in the meeting, we average the experience of the investors to form a composite average experience measure. We find that investors with greater experience with the firm tend to ask more questions. In particular, a one-standard deviation increase in experience (1.2 years) is associated with 2 additional questions. One reason for this greater efficiency in meeting time for investors with a previous history with the firm's managers is that executives can offer more concise responses given the investors' prior knowledge of the firm and the executives themselves. Hedge funds are also more likely to ask more questions as compared to investment advisors. Specifically, being a hedge fund is associated with asking 5.6 additional questions (as compared with the excluded category of investment advisor) on average during a private interaction.

While many of the same attributes contribute similarly to the tendency to ask at least one question in a particular category as explored in Panel A, we find several additional insights. First, we can examine how the number of greater depth questions varies between meetings. Investors from hedge funds, investors with greater experience, and those investors attending longer meetings all ask more detailed questions. Hedge funds, for example, ask nearly five more questions on average as compared to investment advisors.

Second, in model (3) of Panel B, we find that investors are likely to ask fewer philosophical questions when on a conference call. Specifically, conference calls are associated with 0.5 philosophical questions on average. Conference calls lack the ability for investors to interpret body language, which conveys valuable information (Blankespoor, Hendricks, and Miller 2017) making it potentially less valuable to ask these kinds of questions.

In model (6), the number of timely questions is inversely proportional to the duration of the meeting, the number of buy-side investors, and the tenure of investors. As timely questions often contain the most sensitive questions from a legal perspective, investors may be more reluctant to ask them when

¹³ An investor can legitimately seek any piece of information they want (e.g. quarterly EPS number). However, under Reg FD, it is the managers responsibility to not provide material information selectively to an investor even when asked. In particular, it is the failure of management– not the investor– under Reg FD if material information is conveyed during a private meeting.

their colleagues are also present. Similarly, those with greater tenure may also believe that such questions are inappropriate and unlikely to generate responses from management.

Overall, we find that investors' experience and the type of funds they work for are significantly associated with the types of questions investors ask. Moreover, the location of the private interaction is associated with differences in both the types and quantity of questions asked. This suggests that offline questions are, to an extent, predictable given the characteristics of the investors and venue of the meeting.

In addition to our question type categorizations, we examine two additional characteristics of the questions— forward looking and negative tone— in Panel C. Forward looking information is potentially valuable to investors making investment decisions and gathering more forward looking information privately may be attractive since managers do not face the same liability constraints on the information as in public venues.¹⁴ We define forward looking questions as those that include one of the forward-looking words in the word list created by Matsumoto, Pronk, and Roelofsen (2011). The results show that investors with positions in the firm ask 1.2 more forward looking questions. This suggests that holders are keener seeking information that can impact their potential investments more than non-holders on potential investments. Moreover, one additional meeting in the prior year is associated with .7 more forward looking questions suggesting that investors may feel more comfortable asking such questions once they have a developed relationship.

A growing body of literature looks at the specific language employed in corporate dialogue (for review, see Li 2011). Questions, for example, can be asked with a positive or negative tone which can be assessed using a variety of word lists. To ascertain tone, we conduct a textual analysis of each question using the Harvard IV-4 dictionary list of positive and negative words.¹⁵ The dependent variable Negative is the number of questions that are negative less the number of positive questions per meeting. We find that holders are on average more critical, asking on average 1.6 more negative questions per meeting.

Across our analyses in Table 6, we find that certain kinds of venues, investors, and meeting locations are associated with different kinds of questions being asked. In this regard, while prior literature tends to characterize 'private meetings' as a relatively homogenous event, we find that there is considerable heterogeneity and a non-trivial portion of this variation can be explained by those in attendance and how/where the meeting is held.

¹⁴ Firms provide considerable caveats to their disclosures when providing forward looking information to investors publicly due to the liability considerations they face if the information proves to be incorrect or overly optimistic later. In contrast, to the best of our knowledge, no publicly traded firm has been sued by investors for making allegedly false forward looking statements during an offline meeting.

¹⁵ We employ the Harvard dictionary to maintain comparability with Jung, Wong, and Zhang (2017)'s analysis of conference calls (see Table 7). They note that the Harvard IV-4 is appropriate for oral communications (as opposed to the Loughran and McDonald (2011) list which is better adapted to assess tone in written communications).

4.3 Privately versus Publicly Questioning Management

An extensive body of accounting research has examined public earnings conference calls (e.g. Jung, Wong, and Zhang 2017; Call, Sharp, and Shohfi 2017; Mayew, Sharp, and Venkatachalam 2013; Bushee, Matsumoto, and Miller 2003; Bushee, Matsumoto, and Miller 2004; Brown, Hillegeist, and Lo 2004; Frankel, Johnson, and Skinner 1999; Tasker 1998) in which sell-side and buy-side analysts ask questions of senior firm leadership. Analysts utilize these discussion periods on conference calls for information access (e.g. opportunities to find out more data from management), relationship building with management, and signaling opportunities to display their knowledge about the firm to others. In addition to publicly asking questions on conference calls, analysts and investors can also speak privately. As recently investigated by Brown, Call, Clement, and Sharp (2016), these private interactions are also viewed as more valuable than public interactions. As one subject Brown et al (2016) interviewed noted: “A [private] call to me would be way better than a round of golf or a dinner. If it’s a dinner that the company is hosting, then it’s the company’s agenda...On a [private] call, it becomes my meeting. I can control the agenda. I can control the questions that are asked. I can ask what I want to...let’s just do an hour call and knock off my top-10 questions” (151). Understanding what potentially contributes to the value of private interaction and how this interaction potentially differs from public interaction on conference calls is a question that we can begin to address with our data.

Our sample BIOTECH firm held only one public conference call during our sample period (i.e. the firm does not do earnings calls every period) making the sample of questions too small to conduct a practical empirical analysis given the limited number of questions. However, our DEFENSE sample firm conducted regular quarterly conference calls thus providing numerous public conference calls during our sample period for comparison. Specifically, in the same period as the private meetings for DEFENSE (i.e. from September 2015 to November 2016), we have 228 questions on 5 public conference calls. As is common with larger firms, DEFENSE structures their private meetings in “small group” events with several investors (usually two or three) in the meeting at the same time. In this regard, the meetings have some similarities to a conference call albeit the interactions take place in-person (and thus a more intimate engagement between investors and managers) and the contents of those discussions are private (i.e. observed only by those in attendance).

We begin to understand the potential differences in meetings by comparing the types of questions asked privately and publicly during the sample period in Table 7. The first descriptive observation is that the number of questions posed privately ($n=278$) exceeds that posed publicly ($n=228$). Although some questions posed by different individuals may be seeking similar information, the significant number of questions asked privately gives some sense of the level of engagement in private interactions. Matsumoto, Pronk, and Roelofsen (2011) find that the discussion portion of public conference calls

provides the greatest information content. To the extent that responses in private convey similar amounts of information to those provided in public calls, this suggests that the value of private dialogue is significant.¹⁶

To better understand how the types of questions asked publicly and privately differ, Panel A of Table 7 categorizes questions posed. Greater depth is the most significant category in private interactions (71%). It too is the most common in public interactions with 93% of public questions seeking additional clarification of disclosed information. A small number of public questions are proprietary (5%) and management philosophy (2%), however, the frequency of these question types are quite limited. It is notable that no public questions are either of the timely or efficiency type. Callers are screened by management on public calls and questions that are easily answered (e.g. “Can you give us an update on the stock price?”) would likely embarrass the asker (and would be a poor use of time for others on the call). Consequently, we find that efficiency type questions are avoided. Moreover, to the extent that public conference calls happen soon around the announcement of earnings and the release of the 10-Q, there is little need to ask “timely” questions as this information has just been disclosed. Ultimately, there appears to be some difference in the types of questions asked and information sought between public and private interactions.¹⁷

Recently, Jung, Wong, and Zhang (2017) examine the language and style of conference calls. They find that buy-side analysts tend to have more dialogue (i.e. back and forth with management), shorter dialogues (i.e. words per question or statement), and a marginally less positive tone than sell-side analysts. To better understand how public and private conversations differ, we employ these same measures in Panel B of Table 7.

First, we compare the number of dialogues per meeting between executives and investors in both settings. We find that the mean and median of approximately five is not statistically different between the different settings. Notably, the median number of dialogues is the same as that described in Jung, Wong, and Zhang (2017) in their large-sample analysis of call transcripts. Although the number of dialogues in private questions is similar quantitatively, difference in conventions when meeting executives publicly impact this interpretation. Specifically, as Jung, Wong, and Zhang (2017) note and as we also find in

¹⁶ As we were not able to record management’s responses during meeting, we can only provide this observation as a potential hypothesis for further investigation. Some evidence suggests that the quality of questions asked in private are likely to be as valuable, or even more so, than those in public venues. For example, Brown et al (2016) describe how many questions posed on public calls seem to have little information seeking value, but rather are focused on getting the analysts name publicized (e.g. “even if they have the most lame questions—and sometimes you have to wonder why are they even bothering to ask the question—they have to have their name in there” (151). Whether management responds to these questions in private in the same manner in terms of the information value as they do publicly is, however, an open question. Some evidence (e.g. trading results after private meeting in Solomon and Soltes 2015) and comments by analysts (“let’s just do an hour call and knock off my top-10 questions” in Brown et al 2016) suggests that the information provided in response to questions asked privately is valuable.

¹⁷ We also conducted this analysis with BIOTECH (with the caveat that we only had one public call during the same period with 30 questions.) The results are similar. 93% of the questions asked were of the detail type and 7% were proprietary. As with DEFENSE, no efficiency or timely questions were asked on the public call.

DEFENSE's conference calls, many public conference calls dialogues begin with short salutations (e.g. "Hello", "Good morning") and end with a note of appreciation (e.g. "Thank you"). The dialogue in private interactions tends to avoid this "small talk" except at potentially the very beginning and very end of the meeting itself. Thus, while the number of times there is a back-and-forth dialogue between executives and investors may be the same, by reducing the amount of extraneous pleasantries, there is actually more questions being asked in the same amount of dialogues in private meetings. Specifically, if one excludes non-question remarks made during public remarks, we find that the number of dialogues is reduced to 3.2 on average.

The second part of Panel B shows the length of questions asked in private and public. We find that questions asked in private tend to be considerably more concise. One of the reasons for this is that private questions (as in the number of interactions) tend to be more blunt and without the same prefacing or "pleasantries." One caveat to our analysis of the number of words is that it is conceivable that our private transcripts underestimate the total number of words spoken by the analysts. While every effort was made to capture questions verbatim, some utterances were likely missed in the real-time recording of these questions. Nonetheless, the considerable difference between public and private suggests that private questions are still likely more concise even if several utterances were inadvertently missed during the recording process.

Finally, we examine the tone of private versus public interactions. Similar to Jung, Wong, and Zhang (2017), we define tone as the number of positive words minus the number of negative.¹⁸ Investigating the tone of questions in these two settings is useful for ascertaining if investors are more "upbeat" in their public questions and remarks to management to curry favor (e.g. Brown et al. (2016)).

In this spirit, we find that both the mean and median tone in public remarks is considerably more positive than that during private interaction. This difference in tone suggests that individuals may be more willing to critically question executive during private interactions when it is less likely to embarrass management. Put differently, public conference calls have a publicity component where criticism of executives or their firm is unlikely to provide the person asking the question with goodwill. However, in private, more critical or aggressive questioning is less likely to be offended and potentially face sanctioning (e.g. fewer or less timely callbacks from management, less likely to be allowed to ask questions on future conference calls).¹⁹

Finally, in Panel B of Table 7, we examine the number of forward looking questions between public and private settings. We find that public questions are statistically more likely to be forward looking than

¹⁸ Jung, Wong and Zhang (2017) additional scale it by the number of words in the question. Our results are robust to scaling.

¹⁹ Management selects who to call on during public conference calls (e.g. Brown et al 2017). To the extent that management selects analysts who are more inclined to ask positive questions, this could also create a more positive tone on calls.

those questions asked privately. Ultimately, to better understand the strategy of why different kinds of questions are asked publicly versus privately, one would ideally have insight from the participants themselves as in Brown et al (2016) and Brown et al. (2015) which could further illuminate the strategy of asking particular types of questions (e.g. forward-looking) in public versus private.

Overall, our analysis suggests a number of distinct differences between private and public calls. One caveat to this analysis is that the individuals (i.e. analysts and investors) asking questions privately are different from those asking questions publicly. Ideally, we would have a matching sample of individuals where the same people ask questions both publicly and privately. However, over our sample period for DEFENSE, we do not find any instances where the same individual asks a question publicly and privately to executives (in this regard public and private interaction are substitutes, rather than complements to one another). Thus, this is not a matter of selection, but rather the fact that different individuals may ask different questions in these venues. Thus, we need to interpret the results as reflecting both a difference in setting and also a difference in the kinds of individuals who participate in those different settings. Despite this potential limitation, a number of the differences (e.g. tone of public vs. private) questions are consistent with prior hypotheses and anecdotal evidence.²⁰

5. Private Interactions and Investors' Trading Behavior

Prior research on private meetings investigated the impact of these offline interactions on investor's trading (e.g. Solomon and Soltes 2015) and aggregate trading in a firm's security (e.g. Bushee, Jung, and Miller 2017). This research offered support that private meetings lead to differences in trading behavior. However, it is plausible that only a subset of private interactions actually convey these effects. In particular, some meetings are likely to spur a more significant impact than others based on the nature of the discussion between managers and investors. Given our access to records that indicate not only when a meeting took place, but also its contents, we investigate in Section 5.1 and 5.2 how the trading is associated with the kinds of questions asked during meetings.

5.1 Trading Volume around Private Meetings

Bushee, Jung, and Miller (2017) hypothesize that meeting participants benefit from offline interactions with management and find that trading volume increases around private meetings. Using our sample meetings from BIOTECH, we seek to expand on Bushee, Jung, and Miller (2017) by seeing if the

²⁰ Although the number of publicly posed questions in BIOTECH is small, we find similar results where public questions are longer, more positive, and more likely to be forward looking than those in private interactions. Thus, the empirical results we present for DEFENSE are supported by similar evidence from BIOTECH.

benefits of private meetings, as indicated by trading changes, is associated with certain types of events in which particular kinds of questions are asked.

We examine five different variables to capture potential changes in trading dynamics following Bushee, Jung, and Miller (2017). First, we use two variables, CSIZE and CAMOUNT, to capture the total abnormal trading on the meeting date using TAQ data. CSIZE is the number of shares (in millions) that were traded during the day of the private interaction compared to the number of shares that were traded on the control date, which is the same day a week earlier (i.e. seven days prior to the meeting). Because our meeting dates fall on weekdays, comparing with the same day of the week enables us to preserve all meeting datapoints. CAMOUNT is the dollar amount (in millions) that were traded on the day of the meeting compared to that of the control date. In addition, we also examine three additional variables, CLAVGSIZE, CLGTRADE, and CLGVOL following Bushee, Jung, and Miller (2017). In contrast to the previous two variables, these measures proxy for large trades, which are more likely to represent institutional trades. CLAVGSIZE is defined as the log of the average trade size (i.e. number of shares) on the meeting date minus that of the week before. CLGTRADE is defined as the percent of large trades on the meeting date minus that of the week before. We measure the percent of large trades as the number of large trades (those greater than \$5,000) divided by total trades.²¹ CLGVOL is defined as the log of trading volume due to large trades on the meeting date minus that of the week before.

In Table 8, Panel A, we provide descriptive statistics for our five abnormal trading volume variables. Based on prior research, we would expect that the mean of each trading variable would be significantly greater than zero (i.e. that there is higher trading volume on the meeting dates compared to the control dates). However, the last column in Panel A shows that the differences in trading between the meeting and control dates are statistically insignificant despite being positive in most instances. This suggests that private interactions for BIOTECH do not, in aggregate, appear to be associated with differential trading in our sample. However, the results should be interpreted cautiously as it may be partly driven from the small sample size ($n=30$; the 66 meetings fall on 30 days).

Although we find that private interactions in general for BIOTECH are not associated with significant increases in trading volume, there could be some types of meeting that are. In other words, greater trading may only be associated with certain kinds of meetings. To investigate whether the abnormal trading volume is apparent in meetings where certain types of questions were asked frequently, we conduct subsample t-tests where we split the meeting sample into two groups according to whether the meeting has

²¹ We use a different “large trade size” threshold than Bushee, Jung, and Miller (2017) to reflect the current trading in BIOTECH. Out of the transactions that occurred during our sample period, less than 1% exceeds \$50,000. If we use \$5,000 as threshold, approximately 5% are defined as “large” trades. The more frequent smaller trading values are, in part, a reflection of the increasing tendency for institutional investors to break up their trades into smaller transactions.

a higher or lower number of questions asked of a particular type (i.e. above or below the median percentage). Although for most types of questions we do not find differences, we do find significant differences for forward-looking questions (tabulated in Panel B, other question types are not tabulated). Our results show that trading volume is higher for the day of meetings when more forward-looking questions are asked. This suggests that the “benefits” for meeting with executives of BIOTECH may be more narrowed associated with meetings when many forward-looking questions are asked.

To further examine whether meetings with more forward-looking questions are associated with differential trading practices, we perform a multivariate regression where we include different question types contemporaneously in Panel C of Table 8. The coefficient on forward-looking question is significantly positive in all columns, confirming that meetings with forward looking questions significantly increase the trading volume on the meeting date. Column (1) suggests that compared to the meeting date which had lowest Forward looking questions (%) (i.e. Forward looking questions (%)=0), approximately 127,000 more shares are traded on the meeting date which had highest Forward looking questions (%) (i.e. Forward looking questions (%)=0.533). Moreover, the average size of the trade is 6.3% larger on each trade on the highest Forward looking questions (%) days as compared to the lowest Forward looking questions (%) day (column (3)), and ‘large volume trades’ approximately 6,400 bigger.

In an additional untabulated analysis, we perform a placebo test where we regress the question types on the abnormal trading measured seven days after the meeting.²² We find that there is no association between any of the question types (including forward-looking questions) and our trading volume measures. This strengthens that our finding in Panels B and C for forward-looking questions are not spurious.

Ultimately, this analysis suggests that not all meetings necessarily convey the same impact. For our sample BIOTECH, the impact associated with private meetings appears to be associated with meetings in which a large portion of the discussion is focused on forward-looking questions.

While this analysis is the first to more closely examine the content of meetings in respect to the trading impact they have, it is subject to a number of caveats. In particular, we cannot isolate whether the impact associated with forward-looking questions is because of the nature of the dialogue (i.e. managements response) or because of the type of investor who asks more forward looking questions (e.g. investors who are inclined to trade subsequent to private meetings happen to ask more forward-looking questions). Unfortunately, the relatively small sample size and data for only one firm limits the ability to explore the impact by content in more detail. With access to more extensive data for additional firms, it would be possible to significantly broaden this analysis to better understand how the dynamics of different meetings (e.g. the types of questions ask) impact investors behavior around the meeting in more detail. However, our

²² The control date remains the same, which is the week before the meeting.

preliminary analysis suggests that such an investigation would potentially illuminate that specific types of meetings are more likely than others to convey the hypothesized “benefits.”

5.2 Investors’ Subsequent Holdings and Private Interaction Dialogue

Beyond the aggregate trading in a stock following private meetings, the trading by individual investors has also drawn prior research interest (e.g. Solomon and Soltes 2015). In this section, we seek to understand whether these changes may be associated with particular kinds of meetings. Although we cannot attribute information garnered from the meeting as causing an increase or decrease in holding of BIOTECH given the non-random assignment of our meeting sample, we can begin to understand how the characteristics of the questions asked by investors during private interactions is related to specific investors’ investment decisions.

Table 9 examines changes in investors’ contemporaneous changes in holdings as they relate to question type and tone. We focus on contemporary changes in holdings to ascertain whether meetings are associated with changes in beliefs around the time of meetings. As some of the information garnered from meetings may have immediate use (either because it conveys information that an investor needs to make an investor decision or confirms a thesis), we also look at how an investor’s decisions to increase or decrease the size of the position is related to the subsequent return following the meeting. In the model in Table 9, the left hand side variable is an indicator where the value takes 1 if there is a change in the number of shares held by investor in the quarter in which the meeting occurred (i.e. the number of shares held at the most recent quarter before the meeting and the number of shares held in the quarter following the meeting are different).

Both columns in Table 9 show that investors who asked more management philosophy questions and forward looking questions are more likely to change their position. The coefficient on forward looking questions suggests that investors’ likelihood of changing the position is proportional to the ratio of forward looking questions asked in the meeting. In particular, a one standard deviation increase in the % of forward looking questions (13%) is associated with a 13% increase in the likelihood of changing the position. Column (2) additionally finds that the change in position is also associated with more negative (or more critical) questions. A standard deviation increase in the % of negative questions (19%) increases the likelihood by approximately 12%.

Overall, we find some evidence that more critical meetings are associated with changes in beliefs (as proxied by changes in positions around meetings). One limitation of the test is that the change in position of investors is only viewed on a quarterly basis, thus making it difficult to firmly attribute the changes around the meeting time. If more data was available, this could potentially be addressed by exploring meetings that occur at different times (as in Solomon and Soltes 2015). In addition, the lack of an association

between the question types and position changes may be due to limited power given the relatively small number of observations. Thus, collecting substantially larger datasets would significantly benefit the ability to improve this analysis.

6. Conclusion

Private meetings are a significant disclosure medium for firm managers to communicate with investors, but little is known about the content of these offline meetings due to the lack of data on such interactions. By studying the questions asked by investors for two firms, one in the biotechnology space and another in the defense industry, we seek to help illuminate the dialogue in these offline events.

We find that the questions asked by investors can be divided into five categories: greater depth, management philosophy, investor efficiency, proprietary, and more timely. We find that the majority of the questions seek more detailed information and the kinds of questions asked are associated with both investor and venue characteristics. We also find that private questions tend to be different than those posed publicly on conference calls. In particular, private questions are shorter and more negative.

Our investigation raises several areas for further study and investigation. One question is the specific role of the questions posed during meetings, and the extent to which they complement or substitute for other information publicly offered by firm managers. Managers may have a desire to only provide some information privately, but understanding which information they choose to disclose publicly or privately would help us better understand the entire disclosure environment.

Building a more comprehensive database about the types of questions asked by different investors at different firms would allow the development of better models of the types of disclosures sought by investors. Such data and analysis would have implications beyond academic research, and could offer practical value to IROs. In particular, managers could better anticipate the types of questions from different kinds of investors and prepare more efficiently in advance.

Finally, we focus on the questions asked by investors as a way to protect participating firms. However, there is the critical question of how managers decide how much information to provide in response. To the extent that some managers might be willing to provide significant information privately, even in potential breach of regulation, raises important questions. In this way, despite considerable academic research on Reg FD (e.g. Koch, Lefanowicz, Robinson 2013), how managers interpret the regulation in this context is not entirely clear. Ultimately, understanding the determinants of how managers choose to respond to different questions would offer a better understanding of the dialogue between managers and investors.

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Table 1: Location and Question Frequency at Private Interactions

Table 1 describes the location and number of questions asked during private interactions with BIOTECH. The sample period begins in January 2016 and ends in September 2016. Panel A shows the average length, number of questions, and number of participants at each of the three different venues for private interactions. Panel B shows the number of questions asked by investors at each venue. The differences described in Panel B are based on differences in the number of questions asked between the two respective venues. ***, **, * indicate statistical significance at the 1%, 5% and 10% level respectively.

Panel A: Interaction Type/Location

One-on-one venue	Location	Number of meetings	Average length per meeting (hours)	Average number of questions per meeting
Conference	San Francisco	16	0.50	9.25
	West Palm Beach	9	0.50	9.33
	New York	1	0.50	19.00
	Las Vegas	4	0.50	14.50
Roadshow	Various Investor Offices	17	1.00	16.18
Private call		19	0.89	19.21
Total		66	0.74	14.38

Panel B: Questions by Venue

	Conference	Roadshow	Private call
Average # of questions per meeting	10.3	16.2	19.2
	<u>Difference</u>		<u>t-stat</u>
Conference - Roadshow	-5.9		-3.25***
Conference- Private Call	-8.9		-4.43***
Roadshow - Private Call	-3.0		-1.23
	Conference	Roadshow	Private call
Average # of questions per hour	20.6	16.2	21.6
	<u>Difference</u>		<u>t-stat</u>
Conference - Roadshow	4.4		1.97**
Conference- Private Call	-1.0		-0.45
Roadshow - Private Call	-5.4		-2.39**

Table 2: Frequency and Type of Investor

Table 2 describes the frequency of private interactions with executives from BIOTECH. Panel A shows the frequency of private interactions and the venue for these interactions. Panel B describes the frequency of private interaction by the type of buy-side investor and where those interactions occurred.

Panel A: Frequency of Interactions

<u># of Meetings per Investor</u>	<u># Investors</u>	<u># Conference (%)</u>	<u># Roadshow (%)</u>	<u># Private Call (%)</u>	<u># Total meeting</u>
1	40	18 (45%)	16 (40%)	6 (15%)	40
2	8	9 (56%)	1 (6%)	6 (38%)	16
3+	3	3 (25%)	0 (0%)	7 (75%)	10
Total	51	30 (45%)	17 (26%)	19 (29%)	66

Panel B: Interactions by Type of Investor

<u>Investor Type</u>	<u># Investors</u>	<u># Conference (%)</u>	<u># Roadshow (%)</u>	<u># Private Call (%)</u>	<u># Total meeting</u>	<u>Mean # meeting per investor</u>
Hedge	36	21 (44%)	12 (25%)	15 (31%)	48	1.33
Investment advisor	10	6 (46%)	4 (31%)	3(23%)	13	1.30
Venture Capital/Private Equity	5	3 (60%)	1 (20%)	1 (20%)	5	1.00
Total	51	30 (45%)	17 (26%)	19 (29%)	66	1.29

Table 3: Buy-side Participants at Offline Interactions

Table 3 describes the buy-side investors attending private interactions with BIOTECH. Panel A shows the tenure of buy-side investors as the number of years that they have worked at the buy-side firm. Panel B describes the number of years since the buy-side investor first met privately with an executive from BIOTECH. Panel C describes whether the buy-side investors privately meeting with management have a position in BIOTECH (i.e. holder) at the time of meeting. Investors who do not hold a position at the time of meeting are described as non-holders. Mean holding describes the average value of shareholdings in millions of dollars as of the most recent Form 13f reporting at the time of meeting.

Panel A: Tenure at Firm

<u>Years at Buyside Firm</u>	<u>N</u>
Less than 2 years	13
2 years~ less than 5 years	33
5 years~ less than 10 years	14
10 years~ less than 15	8
> 15 years	10
Total	78

Panel B: Duration of Relationship with Firm

<u>Time Since First Meeting</u>	<u>N</u>
less than 1 year	54
1 year~ less than 3 years	18
3 years~ less than 5 years	6
Total	78

Panel C: Holdings of Buy-side Participants in Private Interactions

Type	N	# Holders	# Non-holders	Mean Holding (holders & non-holders)	Mean Holding (holders only)
Hedge	48	20	28	2.15	5.15
Investment advisor	13	5	8	1.54	4.00
VC/PE	5	1	4	3.20	16.00
Total	66	26	40	2.11	5.35

Table 4: Types of Questions Asked During Private Interactions

Table 4 describes the questions asked by investors during private interactions with BIOTECH. The 949 questions asked by investors during 66 private meetings were classified into one of five categories: greater depth, management philosophy, investor efficiency, proprietary, and more timely. Panel A shows the number of questions that fall within each category and the percentage of private interactions where at least one question of a particular type was asked by executives. Panel B shows the percentage of question types by holder and non-holding investors speaking with management. Panel C shows the frequency of question types across the different holding status. The t-stat describes the difference between the number of questions of a particular type asked between holder and non-holders. ***, **, * indicate statistical significance at the 1%, 5% and 10% level respectively.

Panel A: Frequency of Question Types

<u>Question Type</u>	<u># Questions</u>	<u>% of Total</u>	<u>% Meetings with</u>
		<u>Questions</u>	<u>at least one</u>
			<u>question type</u>
Greater depth	730	77%	98%
Management Philosophy	38	4%	33%
Investor efficiency	39	4%	38%
Proprietary	85	9%	67%
More timely	57	6%	59%
Total Questions	949	100%	100%

Panel B: Holder Question Statistics

<u>Question Type</u>	<u>Holder</u>		<u>Non-holder</u>		<u>Total</u>	
	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>
Greater depth	311	78%	419	76%	730	77%
Management Philosophy	19	5%	19	3%	38	4%
Investor efficiency	8	2%	31	6%	39	4%
Proprietary	35	9%	50	9%	85	9%
More timely	25	6%	32	6%	57	6%
Total Questions	398	100%	551	100%	949	100%

Panel C: Frequency of Questions by Holding Status

<u>Question Type</u>	<u>Average # of</u>	<u>Average # of questions</u>	<u>Difference</u>	<u>T-stat</u>
	<u>questions per holder</u>	<u>per non-holder</u>		
Greater depth	11.96	10.48	1.49	0.85
Management Philosophy	0.73	0.48	0.26	1.03
Investor efficiency	0.31	0.78	-0.47	-2.17**
Proprietary	1.35	1.25	0.10	0.31
More timely	0.96	0.80	0.16	0.70
Total Questions	15.31	13.78	1.53	0.85

Table 5: Descriptive Statistics

Table 5 displays descriptive statistics for the buy-side investors and private interactions with BIOTECH. Value of fund (\$bil) and Value of holdings (\$ mil) are collected from FactSet, and all other variables are based on records provided by the management of BIOTECH. Number of questions is the total number of questions that has been asked in a meeting. Greater depth questions, Philosophical questions, Investor efficiency questions, Proprietary questions and More timely questions are subsets of questions categorized according to the classification scheme described in Section 4 of the paper. Forward looking is the number of forward looking questions in a meeting. We define forward looking words as those included in the word list created by Matsumoto, Pronk, and Roelofsen (2011). Negative is the number of questions that have negative words minus the number of questions that have positive words, where negative words and positive words are defined following the Harvard IV-4 dictionary. Duration hour is the number of hours for each meeting. Number of participants is the number of participants from the buy-side that participated in each meeting. Average tenure is the average of the number of years for which each buy-side participant has been employed at his or her current buy-side institution. Average experience is the average of the number of years for which each buy-side participant has been interacting with the sample firm. Last year meeting frequency is the total number of in-person meetings that the buy-side participant had with BIOTECH in the prior year. Value of fund (\$ bil) is the sum of the dollar value of stocks held by the buy-side institution at the end of most recent calendar quarter prior to the meeting, in billions. Value of holdings (\$ mil) is the dollar value of the stocks held by the buy-side institution at the end of most recent calendar quarter prior to the meeting, in millions. Surprise is the difference between the reported quarterly earnings and the average of most recent analyst forecast for the quarter. Dispersion is the standard deviation of most recent analyst forecast for the quarter. Excess return is firm's thirty day return (measured from thirty days before the meeting date to the meeting date) minus the value-weighted market return during the same period. Days until earnings release is the number of days from the meeting date to the next earnings release date.

	Mean	Median	Std Dev	Q1	Q3
Number of questions	14.38	12.5	7.26	9	19
Greater depth questions	11.06	9.5	6.86	6	15
Philosophical questions	0.58	0	0.93	0	1
Investor efficiency questions	0.59	0	0.96	0	1
Proprietary questions	1.29	1	1.30	0	2
More timely questions	0.86	1	0.93	0	1
Forward looking	2.64	2	2.10	1	4
Negative	-0.67	0	2.33	-2	1
Duration hour	0.74	0.625	0.26	0.5	1
Number of participants	1.18	1	0.46	1	1
Average tenure (Number of years)	7.00	4.25	6.88	2	9
Average experience (Number of years)	0.96	0.54	1.19	0.00	2.02
Last year meeting frequency	1.35	1	0.94	1	2
Value of fund (\$ bil)	20.65	0.43	82.91	0.16	3.94
Value of holdings (\$ mil)	2.11	0	4.40	0	2
Surprise	0.14	0.11	0.08	0.11	0.24
Dispersion	0.14	0.12	0.03	0.12	0.15
Excess return	-0.01	0.02	0.10	-0.11	0.04
Days until earnings release	42.03	55.00	25.78	13.00	57.00

Table 6: Determinants of Private Interaction Questions

Table 6 analyzes the types of questions asked by investors during private interactions. Panel A is the logit regressions where the dependent variable is 1 if a question of the particular type is asked during the meeting. The model on the depth of questions is excluded since every meeting except one includes a depth question. Panel B examines the total number of questions and the number of questions of each type asked during meetings via OLS where the dependent variable is the number of each question type asked during the meeting. Panel C examines forward looking questions and negative questions. Explanatory variables are described in Table 5. Standard errors (in parentheses) are double-clustered by investor and meeting date. ***, **, * indicate statistical significance at the 1%, 5% and 10% level respectively.

Panel A: Likelihood of Question Types

	(1)	(2)	(3)	(4)
	Philosophical questions (1/0)	Investor efficiency questions (1/0)	Proprietary questions (1/0)	More timely questions (1/0)
Duration hour	76.168*** (8.084)	-0.697 (3.008)	1.972 (2.435)	-7.267** (3.526)
Number of participants	2.909** (1.424)	2.654 (1.806)	0.944 (0.869)	-3.455** (1.618)
Average tenure	-0.017 (0.070)	0.219** (0.091)	0.010 (0.068)	-0.325** (0.138)
Average experience	0.332 (0.306)	0.944** (0.416)	0.335 (0.358)	1.955** (0.853)
Last year meeting frequency	-0.918 (0.608)	-1.591* (0.899)	-0.345 (0.474)	2.552*** (0.892)
Value of fund (\$ bil)	-0.002 (0.003)	-0.092*** (0.021)	0.008** (0.003)	0.043 (0.037)
Holder (indicator)	0.792 (0.859)	-3.656*** (1.358)	0.327 (0.793)	0.758 (0.930)
Surprise	19.806*** (6.334)	38.887*** (8.394)	-5.980 (5.943)	-11.546 (8.867)
Dispersion	18.175 (17.857)	-120.658*** (23.623)	-0.682 (7.170)	-0.378 (19.206)
Excess return	-12.604* (7.024)	-16.905*** (5.592)	6.518 (7.403)	-13.678** (5.363)
Days until earnings release	-0.014 (0.010)	-0.046** (0.018)	-0.016** (0.008)	0.067* (0.035)
Hedge	-0.526 (1.173)	2.062** (0.956)	1.020 (0.698)	2.110** (0.998)
VC/PE		3.534 (2.875)	0.544 (1.560)	2.649** (1.276)
Call	-37.085*** (3.944)	-1.463 (1.442)	-0.783 (1.204)	3.229* (1.687)
Roadshow	-37.353*** (3.420)	-3.851** (1.615)	-0.061 (1.390)	10.536*** (3.863)
Constant	-46.252*** (6.170)	9.716* (5.015)	-0.812 (2.591)	0.275 (3.782)
Observations	61	66	66	66
R-squared	0.328	0.431	0.149	0.551

Panel B: Number of Questions & Quantity of Question Types Asked

	(1)	(2)	(3)	(4)	(5)	(6)
	Number of questions	Greater depth questions	Philosophical questions	Investor efficiency questions	Proprietary questions	More timely questions
Duration hour	28.481*** (3.093)	26.298*** (1.929)	1.064** (0.486)	0.385 (0.622)	1.392 (0.986)	-0.657* (0.382)
Number of participants	-1.638 (2.066)	-2.222 (1.722)	0.412 (0.458)	0.539 (0.493)	0.320 (0.383)	-0.688*** (0.220)
Average tenure	-0.121 (0.161)	-0.074 (0.118)	-0.005 (0.040)	0.017 (0.012)	-0.019 (0.028)	-0.040*** (0.013)
Average experience	1.721*** (0.420)	1.075** (0.425)	0.144 (0.104)	0.220 (0.146)	0.092 (0.206)	0.189 (0.155)
Last year meeting frequency	-0.179 (0.886)	-0.167 (0.717)	-0.129 (0.204)	-0.328* (0.168)	0.084 (0.287)	0.360*** (0.130)
Value of fund (\$ bil)	-0.010* (0.006)	-0.013** (0.006)	-0.000 (0.001)	-0.002*** (0.001)	0.003 (0.002)	0.003*** (0.001)
Holder (indicator)	-0.378 (1.592)	-0.382 (1.606)	0.266 (0.246)	-0.643** (0.248)	0.102 (0.259)	0.279 (0.186)
Surprise	6.241 (12.739)	8.085 (12.714)	4.182** (1.602)	0.194 (1.864)	-4.541* (2.284)	-1.680 (1.224)
Dispersion	62.588* (35.420)	60.694* (34.463)	3.800 (4.575)	-1.856 (4.224)	-1.492 (5.932)	1.443 (3.256)
Excess return	-7.593 (7.676)	-3.233 (7.286)	-2.129 (1.373)	-1.260 (1.143)	0.857 (2.127)	-1.828* (0.988)
Days until earnings release	-0.007 (0.027)	-0.007 (0.029)	-0.005 (0.005)	-0.000 (0.005)	-0.000 (0.006)	0.006* (0.003)
Hedge	5.629*** (1.141)	4.984*** (0.945)	0.171 (0.318)	0.078 (0.350)	0.446 (0.536)	-0.050 (0.391)
VC/PE	2.401 (2.238)	1.454 (1.098)	-0.154 (0.448)	0.306 (0.604)	0.055 (0.845)	0.739 (0.826)
Call	-6.292** (2.493)	-4.791** (2.231)	-0.755** (0.374)	-0.529 (0.404)	-0.304 (0.710)	0.088 (0.310)
Roadshow	-8.762*** (2.049)	-9.061*** (1.724)	-0.304 (0.541)	-0.609 (0.448)	0.304 (0.901)	0.908*** (0.284)
Constant	-14.445** (6.837)	-14.916** (6.899)	-1.478 (1.228)	0.549 (1.408)	0.278 (1.538)	1.121 (0.814)
Observations	66	66	66	66	66	66
R-squared	0.654	0.681	0.273	0.230	0.155	0.319

Panel C: Number of Forward Looking and Negative Inquires

	(1)	(2)
	Forward looking	Negative
Duration hour	5.385*** (1.203)	-4.158 (2.521)
Number of participants	-0.775 (0.562)	1.249* (0.742)
Average tenure	-0.015 (0.032)	0.008 (0.034)
Average experience	0.436 (0.287)	-0.319 (0.206)
Last year meeting frequency	0.679** (0.331)	0.079 (0.402)
Value of fund (\$ bil)	0.005 (0.003)	0.006 (0.004)
Holder (indicator)	1.203** (0.538)	1.602** (0.601)
Surprise	2.709 (4.492)	1.747 (5.764)
Dispersion	16.015 (9.966)	19.941 (13.273)
Excess return	-0.390 (3.017)	-0.162 (4.062)
Days until earnings release	0.018** (0.007)	-0.006 (0.013)
Hedge	0.825 (0.521)	-1.475* (0.786)
VC/PE	0.548 (0.942)	0.130 (1.133)
Call	-1.772* (0.906)	0.524 (1.015)
Roadshow	-2.087** (0.898)	2.684* (1.521)
Constant	-5.181** (2.027)	-2.204 (2.407)
Observations	66	66
R-squared	0.438	0.342

Table 7: Public vs. Private Management Interaction

Table 7 analyzes describes the questions asked by investors during private and public interactions with DEFENSE. In Panel A, the questions asked during private meetings and public meetings were classified into one of five categories: greater depth, management philosophy, investor efficiency, proprietary, and timely. Panel A shows the number of questions that fall within each category and the percentage of private interactions where at least one question of a particular type was asked by executives. Panel B follows Jung, Wong, and Zhang (2017) in its definitions. Number of dialogues is the number of back-and-forth statements by each investor or analyst during the interaction. Statement length is the number of words spoken in each question or remark. Tone is measured as the number of positive words minus the number of negative words utilizing the Harvard IV-4 dictionary. Forward looking dialogue is the number of forward looking words in the question. We define forward looking words as those included in the word list created by Matsumoto, Pronk, and Roelofsen (2011).

Panel A: Question Types in Private and Public Interaction

Question Type	Private Interactions		Public Interaction	
	# Questions	% of Total Questions	# Questions	% of Total Questions
Greater depth	198	71%	212	93%
Management Philosophy	16	6%	5	2%
Investor efficiency	7	3%	0	0%
Proprietary	40	14%	11	5%
More timely	17	6%	0	0%
Total Questions	278	100%	228	100%

Panel B: Comparing Pubic vs. Private

	Number of Dialogues		
	N	Mean	Median
Private Questions	55	5.05	5.00
Public Questions/Statements	71	5.70	5.00
Difference		-0.65	0.00
	Length (Words per Dialogue)		
	N	Mean	Median
Private Questions	278	14.75	11.00
Public Questions	228	42.85	39.00
Difference		-28.10***	-28.00***
	Tone of Dialogue		
	N	Mean	Median
Private Questions	278	0.17	0.00
Public Questions	228	0.96	1.00
Difference		-0.79***	-1.00***
	Forward Looking Questions		
	N	Mean	Median
Private Questions	278	0.30	0.00
Public Questions	228	0.66	0.00
Difference		-0.36***	0.00

Table 8: Changes in Trading Around Private Meetings

Table 8 analyzes how trading volume on the day of the meeting is associated with portion of different question types asked in the meeting. CSIZE is the total number of BIOTECH shares that was traded during the meeting date (in millions of shares) compared to that of the week before. CAMOUNT is the size of the total amount of shares that was traded during the meeting date (in millions of dollars) compared to that of the week before. CLAVGSIZE, CLGTRADE and CLGVOL are defined following Bushee, Jung, and Miller (2017). CLAVGSIZE is defined as the log of the average trade size on the meeting date minus that of the week before. Trade sizes are measured in number of shares. CLGTRADE is defined as the percent of large trades on the meeting date minus that of the week before. We measure the percent of large trades as the number of large trades (those greater than \$5,000) divided by total trades. CLGVOL is defined as the log of trading volume due to large trades on the meeting date minus that of the week before. Trading volume is obtained from TAQ. Panel A shows the descriptive statistics of the volume measures. Panel B divides the sample into two groups according to whether meetings have above or below median % of forward looking questions. % of forward looking questions is defined as the number of forward looking questions divided by the total number of questions asked on a meeting date. P-values are shown using one-tailed test. Panel C examines whether abnormal trading volume is associated with the percentage of different question types.

Panel A: Descriptive Statistics

	Mean	Median	Std Dev	Q1	Q3	p-value for mean
CSIZE	0.01	0.00	0.05	-0.01	0.02	0.24
CAMOUNT	0.12	0.01	0.80	-0.17	0.27	0.22
CLAVGSIZE	-0.14	0.08	1.04	-0.19	0.30	0.77
CLGTRADE	0.01	0.01	0.04	-0.01	0.03	0.14
CLGVOL	0.18	0.07	3.58	-0.60	1.34	0.39

Panel B: Univariate Analysis of Trading for Forward-looking Questions

	Forward looking questions (%)			
	Below median		Above median	
	Mean	p-value	Mean	p-value
CSIZE	-0.01	0.76	0.02	0.07*
CAMOUNT	-0.12	0.75	0.35	0.07*
CLAVGSIZE	-0.49	0.92	0.20	0.09
CLGTRADE	0.00	0.39	0.01	0.13
CLGVOL	-0.91	0.79	1.26	0.03**

Panel C: Trading Volume by Question Types

	(1) CSIZE	(2) CAMOUNT	(3) CLAVGSIZE	(4) CLGTRADE	(5) CLGVOL
Greater depth questions (%)	0.083 (0.078)	1.342 (1.252)	5.188 (3.241)	0.055 (0.054)	8.374 (7.990)
Philosophical questions (%)	-0.375 (0.228)	-5.707 (3.692)	3.168 (4.650)	-0.108 (0.150)	-10.217 (17.380)
Proprietary questions (%)	-0.077 (0.150)	-1.498 (2.390)	-0.173 (4.274)	-0.206 (0.158)	3.422 (11.891)
More timely questions (%)	0.027 (0.144)	0.001 (2.317)	7.539 (4.721)	0.030 (0.157)	15.002 (19.206)
Forward looking questions (%)	0.238** (0.108)	3.849** (1.797)	3.091*** (1.065)	0.124** (0.056)	9.399*** (2.996)
Negative (Harvard) (%)	0.069 (0.066)	1.121 (1.091)	-1.291 (1.123)	0.030 (0.051)	-1.007 (3.763)
Constant	-0.081 (0.052)	-1.263 (0.810)	-5.309 (3.175)	-0.038 (0.046)	-8.802 (7.696)
Observations	30	30	30	30	30
R-squared	0.339	0.337	0.566	0.235	0.204

Table 9: Changes in Holdings and Question Type

Table 9 analyzes how the positions in investor change during the quarter of privately interacting with BIOTECH. Value change (1/0) is an indicator where the value takes 1 if there is a change in the number of shares held by the buy-side in the quarter in which the meeting occurred (i.e. the number of shares held at the most recent quarter before the meeting and the number of shares held in the quarter following the meeting are different). Additional explanatory variables are described in Table 5 and questions are shown in percentages compared to the total number of questions in a meeting. Standard errors (in parentheses) are double-clustered by investor and meeting date. ***, **, * indicate statistical significance at the 1%, 5% and 10% level respectively.

	(1)	(2)
	Value change	Value change
	(1/0)	(1/0)
Greater depth questions (%)	0.423 (0.283)	0.269 (0.262)
Management Philosophy questions (%)	1.696** (0.763)	1.294** (0.584)
Proprietary questions (%)	0.629 (0.487)	0.288 (0.468)
More timely questions (%)	0.206 (0.852)	-0.030 (0.835)
Forward looking questions (%)	0.986** (0.461)	0.882* (0.445)
Negative (%)		0.622** (0.305)
Value of fund (\$ bil)	-0.001* (0.000)	-0.001 (0.001)
Constant	-0.233 (0.203)	-0.006 (0.172)
Observations	66	66
(Pseudo) R-squared	0.169	0.214

Appendix 1: Questions Classification by Content

Appendix 1 describes the questions asked by investors during private interactions with BIOTECH. The 949 questions asked by investors during 66 private meetings were classified into one of six categories: General, R&D related, Production, pricing, marketing and competition, Strategy, Finance, and Shareholder interaction. Examples of questions that belong to each category are described below.

<u>Question Type</u>	<u># Questions</u>	<u>% of Total Questions</u>
General	45	5%
R&D related	672	71%
Production, pricing, marketing and competition	126	13%
Strategy	26	3%
Finance	51	5%
Shareholder interaction	29	3%
Total Questions	949	100%

Representative examples of each content type (with our classification type as described in Table 4):

General:

- “We don’t know the company that well, can you give us an overview?” (Investor Efficiency)
- “What keeps you up at night?” (Management Philosophy)

R&D related:

- “What is the expected placebo response?” (Greater Depth)
- “Have you completed enrolling the efficacy trial?” (More Timely)

Production, pricing, marketing and competition:

- “How will you commercialize this product once approved?” (Greater Depth)
- “What is the competitive landscape like?” (Investor Efficiency)

Strategy:

- “Will you partner with other companies?” (Proprietary)
- “You look like a product, not like a company – what’s the strategy?” (Management Philosophy)

Finance:

- “How much cash do you have now?” (More Timely)
- “Why don’t you own more shares?” (Management Philosophy)

Shareholder interaction:

- “Who are your largest shareholders?” (Investor Efficiency)
- “Do you have any new analysts covering you?” (More Timely)

Appendix 2: DEFENSE Descriptive Statistics

The Appendix 2 describes the questions asked by investors during private interactions with DEFENSE. The 278 questions asked by 43 investors during private meetings were classified into one of five categories: greater depth, investor efficiency, proprietary, management philosophy, and timely. Panel A shows the number of questions that fall within each category and the percentage of private interactions where at least one question of a particular type was asked by executives. Panel B shows the percentage of question types by holder and non-holding investors speaking with management.

Panel A: Aggregate Question Statistics

<u>Question Type</u>	<u>Holder</u>		<u>Non-holder</u>		<u>Total</u>	
	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>
Greater depth	107	71%	91	72%	198	71%
Investor efficiency	4	3%	3	2%	7	3%
Proprietary	23	15%	17	13%	40	14%
Management Philosophy	6	4%	10	8%	16	6%
More timely	11	7%	6	5%	17	6%
Total Questions	151	100%	127	100%	278	100%

Panel B: Questions by Holdings Status

<u>Question Type</u>	<u>Average # of</u>	<u>Average # of questions</u>	<u>Difference</u>	<u>T-stat</u>
	<u>questions per holder</u>	<u>per non-holder</u>		
Greater depth	3.34	3.96	-0.61	-0.82
Investor efficiency	0.13	0.13	-0.01	-0.04
Proprietary	0.72	0.74	-0.02	-0.07
Management Philosophy	0.19	0.43	-0.25	-1.27
More timely	0.34	0.26	0.08	0.50
Total Questions	4.72	5.52	-0.80	-0.84