Three Essays on Corporate Financial Communications

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Abstract

Three Essays on Corporate Financial Communications

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Firms rely on a variety of channels to communicate with financial stakeholders, aiming at providing information, discharging of accountability obligations, building relationships, and facilitating decision-making. This dissertation includes three essays on corporate financial communications with information intermediaries and investors.

The first essay presents an overview of the relevant academic studies on firms' private communications with preferred investors or analysts in the post-Regulation Fair Disclosure (Reg FD) period. Drawing on the U.S. and China's Shenzhen Stock Exchange (SZSE) evidence, this essay discusses recent literature on private meetings in the post-Reg FD era and concludes with several suggestions for future research. The second essay examines listed firms' private communications. Specifically, we use the most recent private meeting records to investigate the liquidity effect of private meetings under SZSE mandatory disclosure regulation. The results provide evidence that timely disclosure of private meetings improves stock liquidity, enhances information transparency, and increases the fairness of information acquisition. The study also documents the meeting participants' heterogeneity and their different motivations for private meetings, suggesting their different influences on information transmission. The third essay explores public firms' interactive communications with investors. Using quantitative research methods, we examine whether investor-generated interactions through a centralized and stock exchange regulated platform help improve firms' investor relations and investors' information assimilation. The results suggest that interactive communication via the regulated platform helps attract the attention of market participants and increases investor and analyst following. However, increased interactions between firms and market participants may add complexity to investors and reduce their ability to assimilate firm information.

Overall, our findings could be of interest to regulators, investors, and other stakeholders interested in more transparent and effective communications between firms and market participants.

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Chapter 1: Introduction

Public companies communicate with market participants to deliver business fundamentals and foster investor relations. Corporate financial communication [1] is primarily shaped by regulatory requirements to reduce information asymmetries between managers and outside capital providers to improve market efficiency. Aside from fulfilling regulatory disclosure requirements, financial communication has become an essential tool to enhance accountability and shareholder support. Investors are also increasingly demanding direct interactions with corporate management for information or governance purpose.

Firms communicate with their financial stakeholders through various methods, and the communication should be within the boundaries of the regulatory framework. In this dissertation, we conduct separate studies to explore public firms' private communications and interactive communications with information intermediaries and investors.

In the first two essays of this dissertation, we focus on private communications or private meetings between senior managers and a select group of investors or analysts. Private meetings thrive in the post-Regulation Fair Disclosure (Reg FD) era (Solomon and Soltes 2015; Bushee et al., 2017, Soltes, 2018). Despite Reg FD's apparent restrictions on selective disclosure of material nonpublic information, private communication with management remains an important disclosure channel for conveying companies' messages to investors and valuable input to analysts' decision processes (Brown et al., 2015, 2016 and 2019). The growing popularity of private meetings after Reg FD raises concerns about investors' unequal access to information. Our first two essays arise from the questions of whether private meetings under current Reg FD continue to create informational advantages to selected investors, implying an unlevel playing field, and whether public disclosure of private meetings could promote equal access to information across all investors.

In the first essay, we present an overview of the relevant studies on firms' private communications with preferred investors or analysts in the post-Reg FD period. In most countries, private meetings cannot be directly observed due to their private nature. We review recent empirical studies on private meetings in two different settings. First, the U.S.-based studies focus on using novel approaches to identify the unobservable communications between managers and selected investors or analysts. The U.S.-based evidence suggests that despite the passage of Reg FD, private meetings still provide an unlevel playing field and potentially create value-relevant information for favored investors and analysts. Second, in the Shenzhen Stock Exchange (SZSE) mandatory disclosure setting, researchers can obtain detailed private meeting records and conduct empirical analyses with large data samples. SZSE-based evidence suggests that investors and analysts continue to profit from private meetings, while some studies support the mosaic view that meeting participants obtain benefits by using their expertise rather than selective disclosure of material information. A potential regulatory implication is that mandatory and timely disclosure

of private meeting records could offer all investors access to meeting information and thus improve the fairness of financial markets. However, increased disclosure of private meetings may also have adverse effects (e.g., hampering shareholder engagement, hindering investors' investment decisions, etc.). Policymakers should place the regulation in context.

In the second essay, we investigate the association between private meetings and stock liquidity in a regulatory setting that requires timely disclosure. We focus on the liquidity effect of private meetings since liquidity is a direct market outcome of mandatory disclosure. While there are studies examining different private meeting participants' informational advantages, our study explores whether timely disclosure of private meetings benefits all market participants, including those with no access to private meetings, through increased stock market liquidity. We highlight the importance of timely disclosure that incorporates and transmits private meeting information to the capital market, and we document the meeting participants' heterogeneity and their different influence on information dissemination. Our findings prove that private meetings between managers and investors improve stock liquidity under timely disclosure regulation. This positive impact is even more substantial for small firms and firms with low disclosure quality. Timely disclosure of private meetings enhances information transparency and increases the fairness of information acquisition. Our study could have implications for listed companies seeking to improve stock liquidity and regulators looking to regulate selective disclosure better to promote information equality and market integrity.

The third essay focuses on firms' interactive communications with information intermediaries and investors. Over the years, financial communication has gone beyond merely a legal obligation to disclose and transfer information; it has become an ongoing dialogue between firms and their financial stakeholders, involving mutual understanding and relationship-building. Brennan and Merkl-Davies (2018) argue that effective communication is a two-way, dynamic, and interactive process with information flowing between firms and their audiences. Prior research (e.g., Koehler, 2014; Lee et al., 2015; Cade, 2018) also indicates that financial communication through digital communication platforms has become increasingly important for firms to disseminate information to a broader audience, for financial stakeholders to understand firm news, and therefore help reduce information asymmetry and enhance favorable investor relations.

Building on prior studies, the third essay of this dissertation examines the two-way communication between firms and their financial audience from both the information supply side (firms) and the demand side (investors). We empirically test whether interactive communication helps improve firms' investor relations and investors' information assimilation. Our study differs from recent research that explores how firms initiate and direct communication via corporate social media such as Twitter and Facebook to disseminate news and manage the flow of firm information (e.g., Blankespoor et al., 2014; Brown, Stice and White, 2015; Jung et al., 2018). We rely on investor-generated interaction between listed firms and market participants through a centralized and regulated online platform, where firms have much weaker control over the multi-way dialogue,

and we focus on the interactive feature of the communication. Our results show that interactive communication via the regulated platform affects firms' investor relations through firm visibility, measured by investor following and analysts following. However, increased interactions via the platform may also add complexity to investors. Large volumes of information from the platform could overload investors and reduce their ability to assimilate firm information, proxied by stock return volatility. The findings could interest companies seeking to gain the broader attention of market participants and develop investor relations. Our analyses may also appeal to regulators considering investor education and oversight of digital communication platforms to empower investors to better process and assimilate firm news.

The remainder of the dissertation proceeds as follows. Chapter 2 briefly reviews the prior studies on firms' private communications with preferred investors or analysts in the post-Regulation Fair Disclosure era. Chapter 3 develops hypotheses, presents methodologies, and discusses the study's results investigating the liquidity effect of private meetings under mandatory fair disclosure regulation. Chapter 4 explores firms' interactive communication with market participants and its impact on firms' investor relations and investors' information assimilation. Chapter 5 presents the conclusion of this dissertation.

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[1] Corporate communication covers many areas of a company and takes different forms. In this dissertation, we focus on firms' communication of information that is relevant to firm valuation. Following Blankespoor (2018), we use the term "financial" to highlight the information relevance for financial valuation.

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Chapter 2: Private Meetings in the Post-Regulation Fair Disclosure Era: A Look at the Evidence

2.1 Introduction

This essay presents an overview of the relevant academic studies on private meetings between managers and preferred investors or analysts in the post-Regulation Fair Disclosure period.

Private meetings are important communicating activities between senior managers and a select group of investors or analysts. For instance, corporate management may use private meetings to selectively disclose nonpublic information to gain or maintain favor with certain analysts or investors. However, because of their selectivity and exclusionary nature, such practice of selective disclosure can lead to a loss of investor confidence in the integrity of capital markets (SEC, 2000). Hence, to "level the playing field" for all market participants, the U.S. Securities and Exchange Commission (SEC) implemented Regulation Fair Disclosure (Reg FD) in 2000 to prohibit public firms from privately disclosing material information to select investors. Given the broad attention on information equality and market fairness, other countries such as China, Korea, Japan, and the European Union also adopted fair disclosure regulations to regulate selective disclosure.

Despite the changes mandated by Reg FD, corporate managers still have significant discretion over allocating their firms' valuable nonpublic information (Bengtzen, 2017) and continue to engage in private meetings with preferred investors and analysts. Ongoing research suggests that private communications are valued by investors and analysts seeking to access information and develop relations with the firm (e.g., Brown et al., 2015, 2016, 2019; Cheng et al., 2016; Bengtzen, 2017). Moreover, recent studies find that within the framework of Reg FD, private meetings still provide a non-level playing field (Bushee et al., 2017); investors and analysts who have preferential access to managers become more informed by acquiring nonmaterial nonpublic information (NPI), and they use NPI for profitable trading without concern for insider trading rules or Reg FD (e.g., Solomon and Soltes, 2015; Bengtzen, 2017).

The research on private meetings mainly addresses whether post-FD private access to management continues to convey valuable information to selected institutional investors and analysts. Empirical studies focus on investors' informed trades, analysts' behavior, and market reactions to private meetings. Drawing on the U.S. and China's Shenzhen Stock Exchange (SZSE) evidence, this essay discusses recent literature on private meetings in the post-Reg FD period and concludes with several suggestions for future research based on the findings of existing studies.

The following section provides some background to the literature review. Then, section 3 presents key research findings from recent research. Since most empirical studies on private meetings under fair disclosure regulations use samples of U.S.- and SZSE-listed companies, we

only review the findings from the United States and Chinese markets. Finally, the paper concludes by discussing key takeaways from the research and its potential implications.

2.2 Background to the Literature Review

2.2.1 U.S. Regulation Fair Disclosure

To promote full and fair disclosure by public companies, the SEC adopted Reg FD in October 2000 to prohibit selective disclosure of material nonpublic information. Under the regulation, when an issuer discloses material nonpublic information to certain parties, it must disclose that information either simultaneously (for an intentional selective disclosure) or promptly (for a non-intentional selective disclosure). Reg FD was designed to address the threat to market integrity when managers treat material information as a commodity and use it to gain favor with specific investors or analysts and when these privileged investors or analysts obtain informational advantages from their superior access to corporate insiders, rather than from their skill or diligence.

However, the regulation does not define "material" and "nonpublic". Still, it relies on the existing definition in case law, which leads to considerable uncertainty among both managers and regulators as to what information managers could be lawfully communicated to investors during private meetings (Soltes, 2018). Many critics of Reg FD expressed concern that the new rule would have a "chilling effect" on disclosure since management would find it difficult to determine when disclosure would be "material" and therefore inhibit their informal communications with the outside world to avoid legal liability of violating Reg FD (Healy, 2008).

Since the enactment of Reg FD, empirical literature provides mixed insights into the effect of FD on firms' information environment. Koch et al. (2013) review earlier studies and state that the evidence generally supports the effectiveness of Reg FD in reducing selective disclosures with a chilling effect for certain types of firms (small or high-technology firms). In addition, although many firms replace selective disclosure with public disclosure, private meetings continue to provide value-relevant information to selected investors or analysts in the post-Reg FD era.

2.2.2 The European Union (EU) selective disclosure regulation

Aiming to enhance investor confidence and market integrity, the European Commission (EC) introduced *Market Abuse Directive (MAD)* in 2003 to prohibit insider trading and market manipulation. MAD contains provisions to prohibit disclosure of price-sensitive information to a selected group of players to ensure prompt and fair disclosure of information to the public (Provision 24; Article 6.3).

MAD was replaced by the *EU Market Abuse Regulation (MAR)* with effect from July 2016. MAR extends the scope of MAD to new markets and trading platforms and covers a broader range

of financial instruments. According to MAR, selective disclosure of inside information is unlawful and prohibited.

MAD and Reg FD exhibit similar regulatory features on selective disclosure, requiring a complete and effective public disclosure simultaneously or promptly when an issuer discloses any inside information to any third party. One difference is that Reg FD takes effect under a single jurisdiction all at once, while MAD is implemented on different dates in different jurisdictions, which allows for studies on the effect of MAD on selective disclosure in a setting where enforcement of a common regulation varies by countries with different sanctions and enforcement resources (Cowan and Salotti, 2020).

2.2.3 Information Disclosure Regulation in China

The China Securities Regulatory Commission (CSRC) enacted *Administrative Measures for Information Disclosure of Listed Companies* in 2007 (Administrative Measures). The Administrative Measures represent the first CSRC document that introduces fair disclosure and requires listed companies to disclose information to all investors simultaneously. It stipulates that listed companies shall not provide inside information to any institutions or individuals when they conduct investor communications such as performance briefings, analyst and investor meetings and roadshows (Article 41).

Before CSRC's Administrative Regulation, China's Shenzhen Stock Exchange (SZSE) issued *Guidelines for Fair Information Disclosure of Listed Firms* in 2006. The guidelines clearly state that listed companies shall not selectively and privately disclose nonpublic material information to specific parties, and such information must be disclosed to all investors simultaneously.

SZSE subsequently implemented stricter regulations on selective disclosure and private meetings. In 2009, SZSE required listed firms to disclose a summary of their private meeting activities in the annual reports; since 2012, SZSE further required all SZSE-listed firms to disclose their investor relation activities using standard record sheets via its authorized and regulated information platform within two trading days. The purpose of this regulation is to standardize the disclosure of private meetings and facilitate access for all investors to acquire information equitably. As a result, detailed private meeting information is transmitted to external investors promptly.

2.3 Research Findings

Empirical studies on private meetings under fair disclosure regulations mainly use samples of U.S.- and SZSE-listed companies. Although many other countries have adopted similar fair disclosure regulations, the related research on these countries focuses on the impact of the regulations on selective disclosure rather than on private meetings (e.g., studies on EU countries,

Cowan & Salotti, 2020 and Kitchens et al., 2020; on Korea, Shim et al., 2016 and Shim, 2020; and on Japan, Okada and Takahashi, 2018 and Horie, 2019). Hence, in light of our focus on private meetings between managers and investors or analysts, we only review the U.S. and SZSE-based evidence.

2.3.1 U.S.-based evidence on private meetings

A growing body of private meeting research draws on the "mosaic view", which suggests that nonmaterial information selectively disclosed through private meetings can help analysts complete a "mosaic" of information that, when combined with analysts' other information they already have, is material (SEC, 2000; Bengtzen, 2017). Thus, analysts could reach material results by accessing and incorporating pieces of nonmaterial information from private communications with management, which is permitted under Reg FD. There are also studies presenting the information value of private meetings that are associated with managers' nonverbal cues, such as gestures, body movement, vocal tones, facial expressions, and cautiousness in answering questions, which could be helpful for investors' clarification or verification purpose (e.g., Brown et al. 2015; Blankespoor et al., 2017).

Private meetings cannot be directly observed in the U.S. due to their private nature and data limitations. Drawing upon the above views, ongoing U.S.-based studies focus on using novel approaches to identify or proxy for such unobservable communications and examine private meetings motivated by informational and non-informational reasons in the post-Reg FD era. Table 2.1 summarizes the U.S.-based evidence on private meetings.

[Please Place Table 2.1 Here]

Green et al. (2014) investigate broker-hosted investor conferences, which provide analysts at brokerages and their clients' opportunities for private interactions with firm management. Their findings suggest that host analysts issue more informative, accurate and timely earnings forecasts than non-hosts in the post-conference period, which supports the view that analysts obtain informational benefits from access to management in the post-Reg FD period.

Using a detailed set of proprietary records from a large-cap NYSE traded firm, Soltes (2014) examines managers' private interactions with sell-side analysts. The study does not find compelling evidence that private interactions enhance analysts' earnings forecast accuracy. However, the study documents other nuanced benefits for analysts' private interaction with management following the passage of Reg FD, e.g., citing private interaction in research reports, facilitating client access, and developing an in-depth relationship with management. In a more recent paper, Soltes (2018) investigates how managers and regulators view the appropriateness of information disclosed during private meetings under Reg FD. By asking managers and regulators to evaluate a series of vignettes based on private meetings, the study finds considerable uncertainty

in the interpretation of Reg FD and disagreement among managers and regulators about what private dialogue between investors and managers is acceptable under Reg FD.

Solomon and Soltes (2015) analyze detailed private meeting records from a mid-capitalization, NYSE-traded firm and examine the association between private meetings and investors' trading decisions. They find that private meetings help some investors better predict future returns and make more informed trading decisions than those who did not attend meetings. This could arise if the firm selectively discloses material information to meeting participants (in violation of Reg FD) or if sophisticated investors can better process the information conveyed by management.

Bushee et al. (2017) examine invitation-only investor conferences, which provide face-to-face venues for invited investors to interact with managers. Such conferences have grown substantially in popularity since Reg FD. Their evidence shows that certain investors exploit their selective access to management to execute profitable trades, suggesting that private meetings still provide a non-level playing field after Reg FD. Using corporate jet flight patterns, Bushee et al. (2018) construct a measure called "roadshows" to identify the unobservable private meetings between managers and investors. They find that roadshows are associated with stock prices, trading volume, analyst forecast activity, and local institutional investor trading, consistent with the view that private meetings provide informational advantages over non-participating investors.

Brown et al. (2015, 2016 and 2019) conducted surveys and follow-up interviews with financial analysts and investor relations officers and provided evidence that private conversations between analysts and senior managers are valuable to analysts and companies. Specifically, private communication is a more useful input to sell-side analysts' earnings forecasts and stock recommendations than sell-side analysts' primary research, recent earnings performance, or the recent 10-K and 10-Q reports (Brown et al., 2015). Information conveyed in private conversations is valuable to buy-side analysts, and sell-side analysts play an important role in facilitating buy-side analysts' private access to management (Brown et al., 2016). Company investor relations officers consider private communication more important than other disclosure channels such as sell-side analysts, 10-K/10-Q reports, and management earnings forecasts for conveying their company's message to institutional investors (Brown et al., 2019). The above studies suggest that private communication is a valuable source of information and does not necessarily represent a Reg FD violation.

Using a field study on two publicly traded firms, Park and Soltes (2018) analyze the information sought by investors during private meetings. They observe that compared to public conference calls, investors are more likely to ask sensitive questions to acquire timely and proprietary information that could potentially violate Reg FD in private settings. The results suggest that private interactions with managers provide information relevant to investors' trading decisions.

Rather than examining private communication events (e.g., investor conferences, private meeting records), Campbell et al. (2021) focus on Reg FD Form 8-K filings. Reg FD requires companies to make public disclosure of any material information that was non-intentionally disclosed during private meetings promptly within 24 hours by filing a Form 8-K. Using this 8-K setting, Campbell et al. (2021) examine trading patterns immediately before the 8-K disclosure, and their main results suggest that certain investors obtain and trade on material information before 8-K filings, which is inconsistent with the stated objective of Reg FD in levelling the playing field for all investors.

Choy and Hope (2021) provide a novel way to capture private communications between sell-side analysts and managers. They use taxi rides between company headquarters and brokerages' research offices in New York City to measure the unobservable private meetings participating analysts are likely the sole recipients of private information. Their study also explores the mandate 8-K filings under Reg FD and suggests that private communications through taxi trips potentially create informational advantages for selected analysts to obtain nonpublic material information in the post-Reg FD period.

Overall, the U.S.-based evidence indicates that despite the passage of Reg FD, managers continue to meet privately with investors and analysts at company headquarters, investor conferences or brokerages' offices. Private meetings potentially create value-relevant information for favored investors and analysts. Therefore, it appears that Reg FD does not fulfill its stated intent to provide a level playing field with equal access to information among investors. A limitation of U.S.-based empirical studies is that the private nature of the meetings could restrict researchers' sample selection and bias their results (Soltes, 2014; Bowen et al., 2018). In addition, it is difficult for U.S.-based studies to convince whether value-relevant information comes from managers' selective disclosure in violation of Reg. FD or from investors' skillful mosaic construction permitted under Reg FD.

2.3.2 China's SZSE-based evidence on private meetings

The SZSE's mandatory disclosure regulation provides a unique setting and data for empirical studies on private communications between managers and investors. Since July 2012, researchers can obtain detailed private meeting data, including meeting participants, discussed questions, and the management's presentation material from the SZSE authoritative communicating platform "Easy IR (Hudongyi)". An example of a translated standard private meeting record sheet is provided in the Appendix.

Based on the disclosed SZSE data, empirical studies examine the impact of private meetings on companies and meeting participants in various aspects. Table 2.2 summarizes SZSE-based evidence on private meetings.

[Please Place Table 2.2 Here]

Cheng et al. (2016) focus on how corporate site visits affect sell-side analysts' forecast accuracy. They argue that different from other types of private meetings such as conference calls, broker-hosted conferences, and roadshows that rely only on discussions with top managers, site visits provide analysts opportunities to talk with other employees and observe firms' production process, operating assets, assembly lines and employee morale. These on-site interactions and observations can help analysts obtain earnings- and non-earnings-related information. Their findings show a significant improvement in visiting analysts' forecast accuracy after their site visits, consistent with the notion that visiting firms offer analysts information benefits. Moreover, the study does not find evidence that analysts' information benefits come from managers' selective disclosure of material information during private interactions, which CSRC and SZSE prohibit.

Liu et al. (2017) focus on the impact of private meetings on mutual fund trading. Their study shows that private communication affects the subsequent trading behavior of mutual funds and significantly improves funds' ability to predict firms' future earnings. They also address the concern about the information conveyed in private communications and suggest that, consistent with the mosaic view, mutual funds acquire fundamental firm information through their active learning or inferences rather than firm managers' selective disclosure.

Han et al. (2018) find similar results of the positive effect of company visits on sell-side analysts' forecast accuracy as Cheng et al. (2016). They also complement Cheng et al. (2016) by examining the sources of analysts' informational advantage associated with company visits. Their results likewise support the mosaic view that company visits enable analysts to fill in their information mosaic and increase the accuracy of their earnings forecasts.

Cheng et al. (2019) extend their earlier study (Cheng et al., 2016) by examining the stock price impact of corporate site visits conducted by sell-side analysts and mutual fund visitors. They document significant market reactions around site visits, and these reactions are predictive of firms' future performance. They also document a more profound stock price impact of site visits conducted by mutual fund managers than those conducted by other visitors (e.g., financial analysts, consulting firms, private equity firms and banks). Their findings indicate that corporate site visitors discover information related to firms' fundamental values.

Bowen et al. (2018) test whether corporate insiders personally benefit from private meetings using the sample period after the SZSE new disclosure regulation (post-July 2012). They find that corporate insiders (e.g., executives, board members, and their direct family members) time their trades around private meetings and earn significant financial gains. They also found evidence that insiders who participated in private meetings could generate higher profits than those who did not. Their content analysis tests whether the mandated published meeting summaries are informative to investors. The findings suggest that the signals conveyed in the published summaries relate to firms' future performance and can be valuable to the capital market.

Some studies document the effect of private meetings on market participants' information acquisition under mandatory disclosure regulation. By examining the impact of site visits on firms' stock price crash risk, Lu et al. (2018) provide evidence that site visits reveal firm-specific information, especially negative information or bad news withheld by managers, to the public under mandatory disclosure regulation, resulting in lower firm stock price synchronicity and greater price crash risk. The findings indicate that mandatory disclosure facilitates market participants' information acquisition. Yang et al. (2020) studied the impact of the new SZSE disclosure regulation (post-July 2012) on the fairness of market information acquisition. By comparing the information environment of SZSE firms before and after July 2012 and comparing the information environment of SZSE firms with that of Shanghai Stock Exchange firms, they find that timelier, more detailed disclosure of private meetings promotes rapid firm information dissemination to the market, weakens the information advantages of visiting analysts and decreases information asymmetry among market participants. They also observe the information chilling effect for firms with fewer visit benefits under the new SZSE disclosure regulation.

Unlike the above studies, Chen et al. (2020) analyze private meetings' content and key characteristics. Their study highlights the heterogeneity of meeting participants, which affects the depth and breadth of private communications and the meeting presence of core executives. The study also implies that participating investors and analysts acquire information from the company, transfer knowledge, and provide suggestions to management.

In general, the SZSE-based literature suggests that under the mandatory disclosure requirement, private meetings still provide meeting participants informational benefits, and mandatory disclosure delivers value-relevant information to the capital market. It is noted that most of the above SZSE-based studies focus on corporate site visits, and other types of private meetings such as investor conferences, private phone calls, media interviews, and roadshows are not covered. Another point worth mentioning is that SZSE had regulatory changes in July 2012. Before July 2012, most private meetings were disclosed in SZSE-listed firms' annual reports without detailed information, which may not allow public investors to obtain timely information about the occurrence of the meetings, the participants and the issues discussed at the meetings. Since July 2012, SZSE-listed firms must publish their investor relation activities using standard record sheets within two trading days. This exogenous regulation change could affect management's disclosure decisions, meeting participants' behaviors, and market reactions around private meetings. However, some SZSE-based studies do not distinguish between the two regulatory periods (e.g., Liu et al. 2017; Han et al. 2018; Lu et al., 2018), and some studies are based on a relatively short-term post-July 2012 data span (e.g., Bowen et al., 2018; Cheng et al., 2019). Thus, distinguishing between the regulatory periods and examining a longer term of post-July 2012 sample span may enrich our understanding of the private meetings and their effects on the capital markets.

2.4 Conclusion

The private meeting is an important communication channel between managers and investors and continues to occur in the post-Reg FD era. Outside of the SZSE, empirical research is challenging due to the lack of data. Researchers are using novel methods to capture unobservable private communications and document meeting participants' informational and non-informational benefits. The SZSE setting allows researchers to conduct content analysis and identify potential selective disclosure with large data samples. SZSE-based studies collectively provide evidence to support the mosaic view that investors and analysts profit from private meetings by using their expertise rather than disclosing material information. However, as Soltes (2018) suggests, material information is not well-defined, and managers and regulators are uncertain about what kind of information can be lawfully communicated, making it difficult to determine whether selective disclosure occurs during private meetings. Furthermore, the institutional differences between China and other countries could limit the generalizability of SZSE-based findings.

One policy implication from the U.S.-based findings on private meetings is that the current enforcement of Reg FD may be insufficient for undesirable selective disclosures, and regulators may consider more transparent disclosure requirements in leveling the information playing field (e.g., Bengtzen, 2017; Gleason et al., 2020; Campbell et al., 2021). SZSE-based research provides some regulatory implications that motivate firms to be more cautious in their private communications. Public disclosure of private meeting records shortly after each meeting offers all market participants access to meeting information, allowing regulators to focus on whether firms adequately disclose their private interactions rather than whether a specific piece of information is material (Soltes, 2018). The criticism is that between the time of the meeting and the disclosure, there is still inequality in access to information between meeting participants and non-participants, even though this time could be short. Furthermore, stricter disclosure regulations may hamper shareholder engagement, hinder large investors' investment decisions, and drive firms to promote positive information and withhold negative information in private meetings (Soltes, 2018; Bowen et al., 2020). Policymakers could consider these possible adverse effects and place the regulations in context.

Prior literature provides many opportunities for future research. For example, while Koch et al. (2013) state the management benefit from private meetings, it would be interesting to examine how private meetings affect managerial performance and career concerns. Soltes (2014) and Cheng (2016) document the benefit of sell-side analysts facilitating corporate access for their buy-side clients. Future research could explore how sell-side analysts benefit from introducing their buy-side clients to management. As more private meetings are advertised in advance (Frankel, 2017), studies on the impact of private meetings on stock liquidity and prices surrounding likely disclosure events may provide insight into private meetings' informativeness. SZSE adopted mandatory disclosure regulation on private communication, which could change the behavior of the financial community. It would also be interesting to examine the effectiveness of this new

regulation in leveling the playing field of all market participants. For example, does the disclosure of private communications convey firms' messages to the financial community and benefit non-participating analysts and small investors with no access to managers? With detailed private meeting data, researchers could analyze the questions discussed during meetings and how questions vary over time. They may find more convincing evidence supporting the mosaic view or detect firms' selective disclosure violating the new regulation. Further studies could also examine the motivations of other participants, such as auditors, lawyers, and creditors and the roles they play in private meetings.

It is worthy of attention that, except for SZSE, investigating private meetings requires access to nonpublic data. Solts (2014) suggests that financial accounting researchers collaborate with and develop relationships with firms to acquire more internal data. Since firms' external accounting choices are generated by internal processes, utilizing more internal firm data could help researchers fully understand firms' reporting and disclosure choices, including private communications with investors and analysts.

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Appendix: Example of Private Meeting Report

Stock code：002022 Stock abbreviation: KHB

Shanghai Kehua Bio-Engineering Co., Ltd.
Investor Relation Activity Record Form

File No.：2018006

Categories of investor relation activities	□ Investor Investigation □ Analyst Meeting □ Media Interview □ Performance Briefing □ News Conference □ Road Show □ Site Visit ■ Other: Conference Call
Meeting participants	See attached list for details
Meeting date & time	October 25,2018,9:30am
Location	Company meeting room
Management attended	Wei Ding (President), Xilin Wang (Board Secretary), Fang Luo (CFO)
Content of the meeting	**Meeting summary：** This 2018 3rd quarter report conference call had two sessions. In the first session, Mr. Wei Ding, the president of the Company, briefly reviewed the Company's performance and strategy implementation in the first three quarters, as well as the future development of the Company. In the second interactive session, the company's management answered various questions raised by investors. **1. The company's operation and strategy implementation (by President Wei Ding)** Since 2017, Kehua Bio-Engineering (KHB) has put forward the core strategy of "product-centered and market-oriented" and has been committed to promoting and implementing this core strategy. The acquisition of Tianlong is significant to the development of KHB in the field of molecular diagnostics, and the operating of Tianlong is gradually improving. KHB has recently disclosed the cooperation between Tianlong and Seegene Company in South Korea, continuing to make breakthroughs in the business of regional medical and diagnostic services. In terms of sales channels, KHB carried out business mergers

	and acquisitions in Nanjing, Guangzhou and Jiangxi at the beginning of the year, and established Shandong Kehua, which further increased the synergy between product sales and channels. For detailed operating data, please refer to the quarterly report disclosed by the company. **2. Q&A Session** 1) Q: In the short term, channel mergers and acquisitions will have a big contribution to the company's performance, but in the long term, the company's development depends on company's products. Based on KHB's existing product lines, what is the focus of the company's future development? A: We are very clear about where we are. First of all, KHB is a product-based company, which should be the case in the long-term, medium-term and short-term. Second, KHB is a comprehensive IVD company with a relatively full range of products/bushiness, so we have a certain share in the market. Taking our channel strategy as an example, the company's M&A channel serves KHB products. Through the channel, we control the consumer terminal and bring KHB's products and services to customers. In the short term, sales growth is mainly brought about by channels, but in the medium and long term, we will launch new products and bring them to the terminal through channels. Therefore, this is not only a short-term growth strategy, but also a medium and long-term strategy to continuously bring KHB products to customers. When it comes to which product line is the focus of our future development, as I just mentioned, the biochemical diagnostic products are important sources of KHB's cash flow, and the growth of this business is also an important factor that drives the company's overall performance growth. In addition, we have begun to deploy the molecular diagnostics business to improve market competitiveness. The market growth of chemiluminescence and immunodiagnostic products is also the focus of our future development. We hope that our second-generation chemiluminescence analyzer can form a linkage effect with our biochemical diagnostic products. 2) Q: How is Tianlong's operation this year, and can it contribute to the company's performance? A: In late August and early September, KHB and Tianlong began to consolidate their financial statements. From the consolidated statements, Tianlong can bring some revenue to FHB in 2018, and the accurate information should be subject to the year-end audit. Compared with last year, Tianlong's income has increased to a certain extent. In general, Tianlong's operation was in line with our

	expectations, and now the overall performance and deployment are moving forward. 3) Q: What does the company think about the centralized procurement and group-buying model for hospital testing departments? What impact do you think it will have on the company in the future? A: The centralized procurement and group-buying is not a completely new model for KHB, and we have been exploring it for several years. Looking at the market, some companies are mainly focus on the group-buying and service business, and they are large in scale, but KHB is different from them. Because KHB has a complete product line, we try to combine our products with our business and set up a professional team to carry out our group-buying business. In this process, we may be more selective and targeted. If some investment is large or the rate of return is not very clear, we will be very cautious. For us, it's not about the bigger the better. What we value more is the investment results, whether the hospitals clients can become our long-term and stable customers, and whether KHB's products can have a relatively important share in local hospitals. These are the considerations we must make in the process of carrying out our centralized procurement business. As a new and attractive market model, centralized procurement and group-buying is in line with the national policies, and we have a professional team to promote this business. However, when faced with various specific cases, we may choose different strategies from other companies. 4) Q: What is the company's business plan for this year? In the long run, what is the company's growth target for the next 3 to 5 years? A: The goal for the next three years or the goal of the current board of directors, in short, is to reach the top level of the industry in terms of KHB's advantageous businesses, and to exceed the average growth rate of the industry in terms of KHB's other important businesses. Over the past year, we have been working in this direction. KHB's performance assessment indicators are incremental, and the board of directors has the same requirements for the management. As for the company's development, the most important thing is to have a short, medium, and long-term strategy, and to be able to implement it in place. We should also consider the entire market environment and follow the established strategy to achieve our business goal. Thank you for support and attendance. Thanks.
Date of record	October 29, 2018

Attachment:

List of Meeting Participants

No.	Name	Company Name	No.	Name	Company Name
1	Jixiong Hou	Beijing Xinleda Investment	28	Linqi Zhu	Huawen Securites
2	Shuo Cai	Beijing FGC Capital	29	Ge He	Jiangshan Investment
3	Yisha Zhou	Green Court Capital	30	Yubin Xie	Jinrong Investment
4	Kang Li	Bohai Huijin Securities	31	Zhenwei Gao	Greenwoods Asset Management
5	Zhe Wang	Caitong Securities	32	Huihui Xu	Shanghai Beaconbridge Investment
6	Huijin Shan	Canyu Investment	33	Bin Sun	JM Capital
7	Lei Wei	Chenfeng Capital	34	Qiang Liu	Meishi Technology
8	Qin Gao	Dacheng Fund	35	Xuezhang Kuai	Minsheng Jiayin Fund
9	Zhaomei Chen	Daojane Capital	36	Huayin Xiao	Ping An-UOB Fund
10	Feimeng Liu	Dingtai Capital	37	Jianbin Niu	Qijia (Shanghai) Capital
11	Ning Liao	Donghai Securities	38	Hanzhang Ha	Shanghai Co Nature Asset Management
12	Shengzhao Yuan	Donghai Securities	39	Yahui Zhang	Sharewin Investment
13	Luyao Xu	Fusion Investment	40	Kai Lin	Double-Safeguard Capital
14	Mei Li	Fosun Pharma Investment	41	Tao Jin	Suzhou Tianenchenghe Asset Management
15	Ye Chen	Hillhouse Capital	42	Muhao Xu	Taixing Fund
16	Binlin Yan	Guangdong Kinghill Group	43	Haoqi Feng	Western Leadbank FMC
17	Qiang Li	GF Fund	44	Peipei Zhang	First State Cinda Fund Management
18	Anquan Zheng	Guangzhou Xinbaixin Fund	45	Jiabo Zhang	Industrial Securities

19	Rongquan Guo	CPIC Fund	46	Jiaxi Xu	Industrial Securities
20	Ganghua Zhou	Guolian Securities	47	Cunguo Gu	CISI Financial
21	Shusheng Zhang	China Life Insurance Social Endowment Insurance	48	Xian Huang	Xuefeng Asset Management
22	Yiyan Hu	Guosen Securities	49	Guoming Zhou	Yichen Capital
23	Jingyan Tang	Sinopharm Group	50	Weiguang Zhang	Changsheng Fund
24	Xiaofeng Qiu	Haitong Securities	51	Lizhi Song	Zhongrunguoyunkui
25	Jiaying Wang	Hezheng Investment	52	Xuchi Zhou	Zhongtai Asset Management
26	Jia Zhao	Huachuang Asset Management	53	Ruiwen Liu	CITIC Securities
27	Yu Sun	Huaneng Guicheng Trust	54	Jiayi Tang	CITIC Securities

Table 2.1 Summary of U.S.-based Studies on Private Meetings

Authors	Private meeting data/proxy, sample firms and period	Key Findings
Green et al. (2014)	Analysis of broker-hosted investor conferences; 68,194 presentations by 4,394 companies at 2,749 conferences hosted by107 I/B/E/S-listed brokers between 2004 and 2010	Analyst recommendation changes have larger price impacts when the analyst's firm has a conference-hosting relation with the company; conference-hosting brokers issue more informative, accurate, and timely earnings forecasts than non-hosts.
Soltes (2014)	Examine managers' private interactions with sell-side analysts by using a detailed set of proprietary records from a large-cap NYSE-traded firm for a period of one year	Analysts privately interact with managers for reasons other than firm-specific forecasting news (e.g., citing private interaction in research reports, facilitating access for buy-side clients, and developing an in-depth management access); no compelling evidence that private interactions improve earnings forecast accuracy
Brown et al. (2015)	Survey 365 analysts and conduct 18 follow-up interviews; sell-side analysts with an equity research report published in Investext during the period from October 1, 2011, to September 30, 2012	Private communication with management is a useful input to analysts' earnings forecasts and stock recommendations, even more useful than their primary research, recent earnings performance, or the recent 10-K and 10-Q reports.
Solomon and Soltes (2015)	Detailed private meeting records from a mid-capitalization, NYSE-traded firm, for a 6-year period from 2004 to 2010, covering 935 one-on-one meetings with 340 institutional investors	Investors who attend private meetings with management better predict future returns in the current quarter and make more informed trading decisions than those who did not attend meetings that quarter
Brown et al. (2016)	Survey 344 buy-side analysts from 181 investment firms and conduct 16 follow-up phones interviews; buy-side analysts listed in Thomson One, survey via email on September 17, 2013	Private communication with management is a useful input to buy-side analysts' stock recommendations and sell-side analysts play a valuable role in facilitating buy-side analysts' access to management

Bushee, Jung, and Miller (2017)	Invitation-only investor conferences; conference presentations from Thomson Financial StreetEvents database; 2003-2008	Find greater trade sizes and larger future trading gains for invited investors; evidence suggest that investor conferences confer a selective access advantage on the buy-side investors that have been invited to attend
Bushee et al. (2018)	Using corporate jet flights to multiple money centers or high-ownership cities to construct a measure "roadshow" as a proxy for private meetings; corporate jet flight data from Wall Street Journal Jet Tracker database between 2007 and 2010; 395,386 flights for 396 firms	Find greater abnormal stock market reactions, more analyst forecast activities, and greater absolute changes in local institutional ownership during roadshow periods
Park and Soltes (2018)	Record of the private interactions between executives and investors from two publicly traded firms; Field study on two publicly traded firms: 949 questions asked by investors during 66 private meetings beginning in January 2016 and ending in September 2016 from a biotechnology company, and 278 questions asked privately between September 2015 to November 2016 from a defense contractor	Find that investors are more likely to ask sensitive questions (i.e., timely and proprietary questions that could violate Reg FD) during private meetings than during public settings; questions asked privately tend to differ from those posed publicly, and private questions seek more diverse information, are shorter and more negative in tone
Soltes (2018)	Survey from thirty mangers and seventy regulators; a series of vignettes based on actual private investor meetings	Find considerable uncertainty and disagreement among managers and regulators as to what kind of information may be lawfully communicated
Brown et al. (2019)	Survey 610 investor relations officers (IROs) of 3,985 U.S. public companies with sell-side analyst coverage in I/B/E/S database between April 1, 2014, and March 31, 2016; and interview 14 IROs	Find that IROs consider private phone calls are very important for conveying their company's message to institutional investors; companies routinely conduct private "call-backs" with institutional investors and sell-side analysts after public earnings conference calls

Campbell et al. (2021)	28,924 Reg FD Form 8-K filings disclosed by 2,952 firms from the SEC's EDGAR database for fiscal years 2005–2013	Find abnormal trading activity prior to the public disclosure; the pre-disclosure abnormal trading is concentrated in scenarios in which the information relates to the firm's material contracts, the firm has insider-trading activity, or holds an investor/analyst conference prior to disclosure; the results indicating a subset of investors may receive and trade on material information prior to its public release
Choy and Hope (2021)	Pick-up and drop-off of taxi trip records between 264 public companies headquartered in New York City (NYC) and 92 brokers having research offices in NYC from the NYC Taxi and Limousine Commission (TLC) website between 2009 and 2014	Find evidence on the informational value of private communications through taxi trips: negative associations between taxi ride volumes around earnings announcement dates (EAD) and analysts' forecast errors, and positive associations between taxi ride volumes around EAD and analysts' stock recommendation profitability

Table 2.2 Summary of China SZSE-based Studies on Private Meetings

Authors	Sample Firms and Period	Key Findings
Cheng et al., (2016)	6,651 corporate site visits to 931Shenzhen Stock Exchange (SZSE)-listed firms during 2009–2012	Corporate site visits improve visiting analysts' earnings forecast accuracy; site visits mitigate nonlocal analysts' information disadvantage
Han et al. (2018)	23,971 observations of analysts' site visits to SZSE-listed companies from 2007 to 2014	Analysts' private interactions with management during company visits enhance their subsequent earnings forecast accuracy
Liu et al., (2017)	29,337 observations of mutual fund visits to SZSE-listed firms from 2007 to 2014	Private communication through site visits to listed firms increases mutual funds' subsequent trading volume, and improves the predictive power of their trades for firms' unexpected earnings
Bowen et al., (2018)	17,631 private meeting summary reports for 1,316 Shenzhen Stock Exchange firms over 2012–2014	Find profitable insider trading concentrated around private meetings; insiders who participated in the private meetings can generate higher profits than those who did not participate; the published private meeting summary reports convey valuable signals
Lu et al., (2018)	Site visits to 1432 SZSE-listed firms and 5829 firm-year observations during the period 2009-2014	Site visits discover and transmit firm specific information, especially negative information to the market, triggering lower stock price synchronicity; firms with site visits experience higher contemporaneous and future stock price crash risk than non-visited firms
Cheng et al., (2019)	21,189 site visits to 1,040 firms in 2,859 firm-years between 2009 and 2013	Investors' corporate site visits have a significant impact on stock prices; visits conducted by larger groups of visitors, by mutual fund managers, and visits covering accounting and finance topics have a larger stock price impact than other site visits

Chen et al., (2020)	7,369 records of private in-house meetings of 481 SZSE-listed companies between 2013 and 2015	Find that external private in-house meeting participants affect the number and the category of questions discussed during the private in-house meetings; core executives treat different types of institutional investors differently during the meetings
Yang et al., (2020)	34,276 company visits to 1191 SZSE firms from 2009 to 2016	Find that market reactions around company visits are more predictive of future earnings when visits details are disclosed timely; timely disclosure of visit details improves the earnings forecast accuracy of non-visiting analysts, and reduces forecast dispersion among analysts

Chapter 3: Private Meetings and Stock Liquidity: The Perspective of Fair Disclosure

3.1 Introduction

Private meetings or discussions between senior managers and investors or analysts are generally referred to as investor relation activities (Bengtzen, 2017). Recent studies indicate that private access to management enables certain investors and analysts to obtain an informational advantage (e.g., Green et al., 2014; Cheng et al., 2016; Bengtzen, 2017; Bushee et al., 2017, 2018). Through private meetings, senior corporate managers disclose valuable information to a select group of investors. According to "mosaic theory" in private meetings, participating investors and analysts become more informed by accessing nonmaterial nonpublic information and forming an information mosaic, and they use it for profitable trading without concern for insider trading rules or Regulation Fair Disclosure (Solomon and Soltes, 2015; Bengtzen, 2017). Lack of transparency about such private access and selective disclosure raises concerns about the disparity between investors' ability to access information and questions on how to regulate private meetings to reduce information asymmetry and improve fair disclosure of the capital market.

This study investigates the association between private meetings and stock liquidity under timely disclosure regulation. We explore whether mandatory disclosure of private meetings benefits investors, firms and the capital market through increased stock market liquidity. Simply stated, liquidity refers to the ease of trading a security (Amihud et al., 2005). Stock liquidity is valuable to investors since it impacts investors' return premiums (Amihud and Mendelson, 1986; Amihud et al., 2015). Higher liquidity also enhances market efficiency (e.g., Chordia et al., 2008; Chung and Hrazdil, 2010) and is associated with firms' cost of capital (e.g., Amihud and Mendelson, 1986; Diamond and Verrecchia, 1991; Butler et al., 2005) and default risk (Brogaard et al., 2017).

Stock liquidity is partly determined by information asymmetry among traders (Schoenfeld, 2017). Our paper is based on the notion that investors obtain informational advantage from private meetings either by acquiring new information or by confirming existing information (Solomon and Soltes, 2015), which causes information asymmetry among private meeting participants and non-participants. According to economic theory, information asymmetry affects investors' trading costs and their willingness to transact in firm shares, leading to reduced stock liquidity (e.g., Kyle,1985; Leuz and Verrecchia, 2000). Diamond and Verrecchia (1991) and Kim and Verrecchia (1994) develop theoretical models showing that increased disclosure reduces information asymmetry among investors. High levels of disclosure enhance market participants' confidence and improve stock liquidity (Healy and Palepu, 2001). In this paper, we focus on stock liquidity, a more direct and closer outcome of private meetings than other variables such as cost of capital and firms' default risk, and we fill the gap in the information dissemination between private meetings and those different outcomes (cost of capital, etc.). We expect private meetings to be informative to market participants and explore the potential disclosure mechanism through which private meetings affect stock liquidity.

Our empirical study is based on the mandatorily disclosed private meeting data of listed firms on the Shenzhen Stock Exchange (SZSE). We manually collect the most recent data from SZSE authoritative platform "Easy IR (Hudongyi)", and the final sample covers 2,094 firms and

46362 firm-quarter private meeting observations in 18 industries between January 2013 to December 2019.

We first test the association between private meetings and stock liquidity. The findings show that private meetings are significantly and positively related to firms' stock liquidity. We then use propensity score matching (PSM) and two-stage least squares (2SLS) analysis to address the potential endogeneity issues. Consistent with our findings, private meetings significantly promote stock liquidity, and this positive impact is even stronger when firms hold private meetings more frequently.

Next, we investigate the effects of private meeting informativeness and private meeting participants' heterogeneity on stock liquidity. The results suggest that the positive liquidity effect of private meetings is more significant when meeting participants ask more searching questions and receive more detailed answers. Concerning private meeting participants' heterogeneity, there is no significant effect when participating investors are only "buy-side" institutions (funds, insurance, asset management companies), but when participating investors are "sell-side" institutions (securities companies, accounting firms, and law firms), or when "buy-side" institutions participant meetings together with "sell-side" institutions, this effect is significant.

We highlight the importance of timely disclosure that transmits private information to the capital market and improves stock liquidity. We explore this potential disclosure mechanism from three aspects:

1. We examine the association between private meetings and commonality in stock liquidity. Our results show that private meetings negatively affect individual stock's commonality in liquidity, implying that the positive effect of private meetings on stock liquidity is not because of the impact of market liquidity.

2. We examine the influence of firms' information environment on the liquidity effect of private meetings. We find that the positive impact of private meetings on stock liquidity is more pronounced for firms with low information disclosure quality.

3. We test the influence of firm size on the liquidity effect of private meetings.

The results suggest that the impact of private meetings on stock liquidity is greater for small firms. All our findings indicate that increased individual stock liquidity is not driven by market liquidity but by the improved information disclosure of private meetings, which conveys new private information to the market and promotes fair disclosure.

We consider our paper contributes to the existing studies in several ways. First, different from previous research that uses U.S. firms to investigate private meetings and focus on the informational advantages of the selected investors and analysts in the post-regulation Fair Disclosure period (e.g., Green et al., 2014; Soltes, 2014; Bushee et al., 2017), we examine private meetings in a regulatory setting that requires mandatory timely disclosure, and we test whether this increased disclosure regulation benefits all market participants, including those investors who have no selective access to managers by improved stock market liquidity. Solomon and Soltes (2015) suggest that private meetings undermine the U.S. Regulation Fair Disclosure (Reg FD) objective that offers investors equal access to information and recommends publishing a transcript of private interactions. Bengtzen (2017) argues that the current Reg FD fails to restrict many undesirable disclosures, and he proposes a framework to consider the Supreme Court's recognition that a firm's nonpublic information is its property and requires public disclosure of all selective

disclosure events as transactions. Our study uses the most recent data and empirically tests the effect of such incremental disclosure regulations. The results support that under timely disclosure regulations, private meeting participating investors and non-participating investors and the market can benefit from this private access to management through reduced information asymmetry and increased stock liquidity. Second, our study may have special implications for individual investors by investigating the liquidity effect of private meetings. Unlike the U.S. and many other stock markets, individual retail investors, rather than institutional investors, dominate the Chinese stock market and account for more than 80% of the value traded (Shanghai Stock Exchange Statistical Yearbook, 2019). Therefore, stock market liquidity is highly correlated with individual retail investors' information acquisition and investment decisions. Individual investors are usually short-term oriented compared to institutional investors and have fewer motivations and opportunities to communicate with corporate managers. Our study suggests that timely disclosure of private meetings transmits new information to the capital market and allows small investors to acquire information equitably. Third, our study extends the recent research based on SZSE-listed firms (e.g., Cheng et al., 2016, 2019; Liu et al., 2017; Lu et al., 2018) by investigating a broad sample of private meeting participants after the timely disclosure regulation was implemented. Cheng et al. (2019) suggest a comprehensive sample to examine private meetings and indicate the potential bias in the sampling of site visits used to test the analysts' forecast accuracy. In our sample, only about 20% of private meetings are attended by sell-side analysts alone or by buy-side investors alone, and about 60% are jointly attended by sell-side and buy-side investors. Our results are consistent with Soltes (2014), Cheng et al. (2016) and Chen et al. (2020) that sell-side and buy-side investors have different private meeting motivations, but different from Bowen et al. (2018) and Cheng et al. (2019) who find a more pronounced impact of buy-side investors (mutual funds) on market reactions measured by standardized absolute abnormal returns, our findings suggest a more significant effect of sell-side institutions on stock liquidity. The different findings could imply that buy-side investors, such as mutual funds, obtain information from private meetings for internal investment management and may trade immediately after private meetings and cause abnormal market reactions; on the contrary, sell-side institutions acquire information from private meetings and provide service to their external clients including those investors that have no selective access to private meetings and cause increased stock liquidity. Therefore, buy-side and sell-side institutions have different market impacts on information dissemination. Fourth, our study provides a new understanding of stock liquidity. Stock liquidity matters for firms. Although disclosure of private meetings is not mandatory in most countries, it still could be favorable for companies to disclose such private interactions between managers and investors voluntarily. Particularly for small firms and firms with low information transparency, actively disclosure of private meetings could be a way to attract investors, increase firms' stock liquidity and reduce the cost of capital (Leuz and Verrecchia, 2000; Verrecchia, 2001; Petrova et al., 2012; Bhattacharya et al., 2013). Finally, our study may shed some light on the regulations of selective disclosures. Our analysis indicates that active interactions between managers and all investors through a supervised internet-based platform could crowd out selective disclosures to preferred private meeting participants and change information asymmetry among informed and uninformed investors. In addition to mandatorily requiring firms to timely disclose their private meetings, an authoritative and standardized communication platform like SZSE Easy IR could be an efficient channel to facilitate investors' information acquisition and promote fair disclosure.

The remainder of this paper is organized as follows. Section 2 provides an overview of the current literature, SZSE institutional environment and hypothesis development. Section 3

describes data, sample and empirical methodology. Section 4 and 5 reports the empirical tests and the results. Section 6 presents the conclusion and discussion.

3.2 Literature review, SZSE institutional environment and hypothesis development

3.2.1 Literature Review

Private meetings are important communications between senior managers and selected investors or analysts. Top managers attend private meetings to develop relationships with firms' shareholders, especially long-term block holders (Solomon and Soltes, 2015), and selected investors and analysts participate in private meetings to obtain information.

In October 2000, the U.S. SEC introduced Regulation Fair Disclosure to prevent managers from disclosing material information to preferred investors and analysts (Solomon and Soltes, 2015; Bengtzen, 2017; Bushee et al., 2018). Despite the passage of Reg FD, corporate managers continue to meet selective investors privately and still have significant discretion over allocating their firms' valuable nonpublic information (NPI) (Bengtzen, 2017).

Recent studies on U.S. firms indicate that private meetings provide participants with informational advantages over non-participates. Green et al. (2014) find that analysts obtain informational benefits from access to management even in the post-regulation Fair Disclosure period. Solomon and Soltes (2015) suggest that private meetings help some investors make more informed and advantageous trading decisions. Bushee et al. (2017) provide evidence that certain investors execute more profitable trades from their selective access to management. In an extension of their earlier study, Bushee et al. (2018) validate participating investors' information advantage and document the impacts of private meetings on stock prices, trading volume, analyst forecasts, and local institutional investor trading. In addition, to gain better information, Soltes (2014) documents other nuanced benefits of analysts' private meetings with management, e.g., citing private interaction in research reports, facilitating access for clients and depth of management access.

Bengtzen (2017) offers a detailed analysis of Reg FD and private meetings in public firms. He argues that under the current structure of Reg FD, selective disclosure provides an attractive method for managers to monetize information and for favored investors to trade profitably. The current Reg FD framework fails to deter undesirable selective disclosures of firms' valuable information. Instead, it appears to have created a strong demand for private meetings and leaves firms vulnerable to managerial opportunism. This article proposes additional disclosure requirements and other improvements to the current Reg FD.

There are relatively scant empirical studies on private meetings, mainly due to data limitations. A likely reason for this situation is that disclosure of private meetings between management and investors is not mandatory in the U.S. and most countries.

3.2.2 SZSE Institutional environment and related literature

In contrast to the U.S., China's Shenzhen Stock Exchange does require public disclosure of private meetings. Since 2009, SZSE has required listed firms to disclose a summary of their investor relation activities in the annual report. On July 12, 2012, SZSE implemented stricter disclosure regulations and required all SZSE-listed firms to disclose their investor relation

activities using standard record sheets via the "Easy IR (Hudongyi)" information platform (http://irm.cninfo.com.cn/szse/) within two trading days. There are eight categories of investor relation activities: investor investigation, analyst meeting, media interview, performance briefing, news conference, roadshow, site visit, and others. The disclosed information includes the category of investor relations activities, meeting participants, meeting date, location, management attended, meeting content, attachment, and record date. This stricter regulation aims to standardize public firms' disclosure of private meetings and protect all investors, including those who do not have access to managers, to acquire information equitably (SZSE News, 2012). SZSE actively monitors listed companies' compliance with mandatory disclosure requirements, and non-compliance may result in penalties such as required corrections, public criticism, publicly identifying director or senior managers as unsuitable, and reporting to China Securities Regulatory Commission (CSRC) for investigation (Fair Information Disclosure Guidelines for Shenzhen Stock Exchange Listed Companies, Chapter 5, Article 23). Consequently, more detailed private meeting information is transmitted to the market through the authoritative communicating platform in a timely manner and available to all external investors.

It is worth mentioning that Easy IR is not only a platform for mandatory disclosure but also an innovative interaction channel for market participants, especially those who have no private access to corporate management, to directly and efficiently communicate with listed firms by asking questions and receive active responses from managers. Since the Easy IR platform launched in 2011, 54,000 pieces of investor relations information were disclosed about private meetings, and investors have raised 2.69 million questions with a reply rate of 96.5 percent (SZSE News, 2019).

Based on SZSE data, some empirical studies examine the impact of private meetings on analysts' forecast accuracy (Cheng et al., 2016), mutual fund trading (Liu et al., 2017), crash risk (Lu et al., 2018), corporate insider trading (Bowen et al., 2018), stock prices (Cheng et al., 2019), and so on. These studies mainly support the view that private meetings are informative and meeting participants benefit from these private interactions.

A few studies also investigate the characteristics and disclosure effect of private meetings. Chen et al. (2020) analyze the content and characteristics of private meetings. Their findings suggest that the number and heterogeneity of meeting participants affect the depth and breadth of private communications and the meeting presence of core executives. They also indicate that private meeting participants acquire information from the company and share knowledge with management. Yang et al. (2020) examine the disclosure effects of selective access on the fairness of market information acquisition. Their findings show that timely disclosure of selective access weakens the relative information advantages of visiting analysts and decreases information asymmetry.

Overall, private meetings between management and investors appear to be an important communication channel and benefit meeting participants in the post-regulation FD period.

3.2.3 Hypothesis development

Our study examines private meetings from a market perspective. We focus on the information role of private meetings in stock liquidity under timely disclosure regulation.

We begin by testing the association between private meetings and stock liquidity. Mosaic theory and the view of confirming private signals suggest that private meetings create information

asymmetry among investors either by providing meeting participants with nonmaterial nonpublic information to build their information mosaics or by verifying meeting participants' preexisting private information (Solomon and Soltes, 2015; Bengtzen, 2017). Several studies provide theoretical models showing that investors' private information changes their trading decisions and market trading volume (e.g., Kim and Verrecchia, 1997; Verrecchia, 2001). Information asymmetry among investors creates costs by introducing adverse selection into transactions, leading to reduced levels of liquidity for firm shares (e.g., Kyle,1985; Glosten and Milgrom, 1985; Leuz and Verrecchia, 2000; Cuadrado-Ballesteros et al., 2016). Public disclosure changes information asymmetry among informed and uninformed investors, and investors can be relatively confident for firms with a high level of disclosure that stock transactions occur at a fair price and improve stock liquidity (Diamond and Verrecchia, 1991; Healy and Palepu, 2001). Therefore, we expect that private meetings are informative to meeting participants, while timely disclosure of such meetings reduces information asymmetry between meeting participants and non-participants and thus improves firms' stock liquidity. It leads to our first hypothesis:

H1: Private meetings improve listed firms' stock liquidity under timely disclosure regulation.

We then examine the effects of private meeting informativeness on stock liquidity. Private meeting participants acquire helpful information from the management by attending meetings and asking questions. External investors without access to management mainly get information from disclosed standard record sheets. Generally, the more probing questions meeting participants can ask based on their skill and professional knowledge and the more detailed answers they elicit, the more value-relevant information can be obtained, disclosed and transmitted to the market, affecting stock liquidity. Thus, our second hypothesis is:

H2: The more informativeness of private meetings, the greater effect of private meetings on stock liquidity under timely disclosure regulation.

We also analyze the effects of private meeting participants' heterogeneity on stock liquidity. Many institutions attend private meetings, including mutual funds, insurance companies, asset managers, brokerage firms, investment advisory firms, government agencies, accounting and law firms, and other institutions. These participants are heterogenous, and so their purposes for attending private meetings. Soltes (2014) suggests that aside from gaining better information, sell-side analysts also participate in private meetings to facilitate the creation of their additional research reports and introduce their buy-side clients to access management. Cheng et al. (2016) indicate that sell-side analysts attend private meetings with their buy-side clients to provide services rather than acquire information. They provide evidence that site visits conducted by sell-side analysts only are more effective in improving analyst forecast accuracy than those visits conducted jointly by sell-side analysts and buy-side investors. Xiao and Ma (2019) document the information sharing and the conflict of interest between buy-side and sell-side institutions, suggesting their differences in information acquisition and dissemination. Therefore, our third hypothesis is:

H3: The liquidity effect of private meetings is associated with private meeting participants' heterogeneity.

Last, we emphasize the importance of timely disclosure and explore the potential disclosure channel through which private information is transferred to the external market from the aspects of firms' commonality in liquidity, information environment and firm size.

3.3 Data, sample and empirical methodology

3.3.1 Data and sample

Our sample period starts from January 2013, after the effective date of SZSE-listed firms' mandatory disclosure of their investor relation activities. We manually collect all published standard record sheets of firms' investor relation activities from the Easy IR platform between January 2013 and December 2019. We get detailed private meeting information from the record sheets containing investor meeting targets and results, questions raised to management and answers thereof, and the management's presentation material for these activities. Our initial sample includes 52810 standard record sheets for 2301 companies.

We obtain stock market data and financial data from the China Stock Market & Accounting Research Database (CSMAR), a comprehensive database for Chinese listed firms. We exclude special treatment (ST) firms, financial firms, and firms with missing values. We also eliminate firms listed for less than one year and firms with quarterly trading days of less than 20 days. Thus, our final sample covers 2,094 firms and 46362 firm-quarter observations in 18 industries.

3.3.2 Variables

3.3.2.1 Stock liquidity variables

We use two variables to measure stock liquidity. Following previous studies (e.g., Ng et al. 2016, Brogaard et al. 2017, Deng et al. 2018), we construct the first variable ($Amihud_{it}$) based on the commonly used Amihud's (2002) illiquidity measure, shown in formula (1). Amihud (2002) uses the average ratio of a stock's daily absolute return to its daily dollar trading volume to measure stock illiquidity. We take the negative number to present stock liquidity.

$$Amihud_{it} = -\frac{1}{D_{it}} \sum_{d=1}^{D_{it}} \frac{|R_{itd}|}{V_{itd}} \times 10^{10} \qquad (1)$$

where D_{it} is the total number of trading days of the company *i* in quarter *t*; R_{itd} is the daily rate of return of the company *i* for the trading day *d* in quarter *t*; and V_{itd} is the daily transaction volume in dollars of the company *i* for the trading day *d* in quarter *t*. We convert the daily rate of return into a percentage of 10^2, and the average daily transaction volume is in units of 10^8, so this measure is multiplied by 10^{10} for better presentation. Since we take the negative adjustment for $Amihud_{it}$, a higher value of this measure implies higher stock liquidity.

Our second liquidity measure is price sensitivity (PS_{it}), which is standard in the literature (Rhee and Wang, 2009; ElBannan, 2017). Price sensitivity is the ratio of daily volatility to trading volume in dollars, defined in formula (2):

$$PS_{it} = -\frac{1}{D_{it}} \sum_{d=1}^{D_{it}} \frac{\ln\left(P_{itd}^{H}/P_{itd}^{L}\right)}{V_{itd}} \times 10^{10} \qquad (2)$$

where P_{itd}^{H} is the highest stock price of the company *i* on trading day *d* in quarter *t*; P_{itd}^{L} is the lowest stock price of the company *i* on trading day *d* in quarter *t*. D_{it} and V_{itd} have the same definitions as those in formulas (1). This measure is multiplied by 10^{10} for better presentation. Stock price sensitivity (PS_{it})is also an illiquidity measure, so we take the negative value in the

calculation to present stock liquidity. Generally, a higher value of this measure implies higher stock liquidity.

3.3.2.2 Private meetings variables

We measure private meetings from two aspects. First, we construct private meeting dummy variable ($Meeting\_Dummy_{i,t}$) and private meeting frequency variable ($Meeting\_Number_{i,t}$) as the main explanatory variables. $Meeting\_Dummy_{i,t}$ measures the occurrence of private meetings and is equal to one if the company *i* has at least one private meeting during the quarter *t*, and zero otherwise. $Meeting\_Number_{i,t}$ measures the frequency of private meetings and is the natural logarithm of one plus the total number of private meetings of the company *i* during the quarter *t*.

Second, we measure private meeting informativeness from the aspect of meeting characteristics. We use the number of meeting participants ($Participant\_Number_{i,t}$), the number of questions asked ($Ques\_Number_{i,t}$), the length of questions ($Ques\_Length_{i,t}$) and the length of company answer ($Answer\_Length_{i,t}$) as proxy variables. $Participant\_Number_{i,t}$ is the natural logarithm of one plus the number of meeting participants for company i in quarter t. $Quest\_Number_{i,t}$ is the natural logarithm of one plus the number of questions asked of company i in quarter t. $Ques\_Length_{i,t}$ measures the detailedness of the questions raised during the meeting and is the natural logarithm of one plus the number of characters in questions for company i in quarter t. $Answer\_Length_{i,t}$ measures the detailedness of the answers received from the company and is the natural logarithm of one plus the number of characters in answers for company i in quarter t.

Since a company could have several meetings in a quarter with different participants, we calculate the total number of participants and questions in each quarter and the average number of participants and questions in each meeting in the same quarter. For example, if a company has 3 private meetings in one quarter, and for each meeting, there are 5 participants asked 10 questions, the total number of participants in this quarter is 15 and the total number of questions is 30; the average number of participants in each meeting in this quarter is still 5 and the average number of questions is 10. We use both calculations in our empirical tests and get the same results. For brevity, we only report the results based on the total number of participants and questions each quarter.

3.3.2.3 Control variables

We control for various market and firm characteristics that affect stock liquidity. These control variables are: (1) Skewness ($Skewness_{i,t}$), (2) Kurtosis ($Kurtosis_{i,t}$), (3) Volatility ($Volatility_{i,t}$), (4) Company Size ($Size_{i,t}$), (5) Debt to Asset ratio ($Debt_{i,t}$), the ratio of total liabilities to total assets, (6) Tangible Assets ratio ($Fix_{i,t}$), (7) Institutional holding ratio ($Institution_{i,t}$), (8) Return on assets ($ROA_{i,t}$), (9) State-owned enterprise dummy ($SOE_{i,t}$). More detailed explanations of all the variables are provided in the Appendix.

3.3.3 Summary statistics

We winsorize all variables by 1% from both tails to minimize outliers. Panel A of Table 3.1 reports the summary statistics of the main variables. The average value of the two liquidity indicators $Amihud_{i,t}$ and $PS_{i,t}$ are -5.439 and -8.773, respectively. The mean value of the dummy variable for private meetings $Meeting\_Dummy_{i,t}$ is 0.419, indicating that there is at least one private meeting in 41.9% of the sample quarters. Since we use firms' quarterly data, the average return on

assets for one quarter is 0.011. The average value of *SOE* is 0.228, indicating that 22.8% of the observations in the sample firms are state-owned enterprises.

Panel B of Table 3.1 reports the mean and median differences between the observations with and without private meetings. There are 19,445 observations with private meetings (*Meetings*) and 26,917 observations without private meetings (*Non-Meeting*). The stock liquidity in the group with private meetings is significantly higher than in the other group.

[Please Place Table 3.1 Here]

3.4 Empirical tests and results

3.4.1 The impact of private meetings on stock liquidity

3.4.1.1 The association between private meetings and stock liquidity

We examine the association between private meetings and stock liquidity using the following regression:

$$Liquidity_{it} = \beta_0 + \beta_1 Meeting_{it} + \Upsilon Control_{it} + Industry\ FE_i + Quarter\ FE_t + \varepsilon_{it} \quad (3)$$

where $Liquidity_{it}$ represents the stock liquidity of the company *i* in quarter *t*, measured by $Amihud_{it}$ and PS_{it}; $Meeting_{it}$ represents the private meetings of the company *i* in quarter *t*, measured by $Meeting\_Dummy_{i,t}$ and $Meeting\_Number_{i,t}$. The key coefficient of interest is β_1. The control variables $Control_{it}$ are defined in the Appendix. $Industry\ FE_i$ is the industry fixed effect. Based on the Guidelines for the Industry Classification of Listed Companies issued by the China Securities Regulatory Commission (CSRC), there are 18 industries in our sample and 1515 firms are from the manufacturing sector. To better capture the differences across the manufacturing sector, we include 29 sub-sectors in the manufacturing category in our empirical models. $Quarter\ FE_t$ is the quarter fixed effect.

Table 3.2 reports the regression results. The coefficients of the meeting dummy variable $Meeting\_Dummy_{i,t}$ for columns (1) and (2) and the meeting frequency viable $Meeting\_Number_{i,t}$ for columns (3) and (4) are all positive and significant at 1% level. The results are also economically significant. For instance, the coefficient of $Meeting\_Dummy_{i,t}$ in column (1) is 0.852, indicating that one standard deviation increase in the meeting dummy variable is associated with a 4.23% (= 0.852 × 0.493 / 9.931) increase of a standard deviation in the stock liquidity. Similarly, one standard deviation increase in meeting frequency viable in column (3) - (4) is associated with a 4.74% and 5.88% increase in stock liquidity, respectively. The results suggest that private meetings are significantly and positively related to firms' stock liquidity.

[Please Place Table 3.2 Here]

3.4.1.2 Propensity score matching analysis

In this section, we use the nearest-neighbor propensity score matching (PSM) approach to address the potential biases in our estimation. We compare private meeting and non-meeting firms by controlling various firm characteristics including company size, debt asset ratio, tangible asset ratio, institution holding ratio, return on assets, state-owned enterprise, quarter and industry in the PSM analysis. We find no significant differences in the matching parameters, suggesting that the observable characteristics between the matched samples are minimized, and the selection of the

two firm groups is not biased. We use propensity-scoring matched samples to rerun our regressions. Table 3.3 reports the results. We find the coefficients of independent variables in the regressions remain significant and positive. These results are consistent with our previous regression results, indicating that the impact of private meetings on stock liquidity is not due to selection bias.

[Please Place Table 3.3 Here]

3.4.1.3 Endogeneity and the 2SLS analysis

There could be a reverse causality between private meetings and stock liquidity. For instance, companies with higher stock liquidity may attract more investors' attention. We use instrumental variables (IV) and the 2SLS analysis to address the potential endogeneity concerns due to the reverse causality or omitted variables.

We select two instrumental variables that are related to private meetings but not related to stock liquidity in our analysis. First, travel convenience and associated time, transportation costs could influence investors' visit decisions. Therefore, we choose $Distance_{it}$ as the first instrumental variable, measured by the travel distance of 100 kilometers between a firm's registered office and the provincial capital. Second, advances in communication technology have created new media for investors' information acquisition. Increasing access to the internet has enabled investors and analysts to communicate with management via online channels, making the delivery of information faster and less expensive. We consider that internet development can potentially affect private meetings, both meeting forms and meeting frequency. We obtain data from the National Bureau of Statistics of China and select the regional internet development index ($Internet_{i,t}$) as the second instrumental variable, measured by the number of provincial internet broadband access ports divided by provincial annual GDP.

We implement the instrumental variable estimators using the two-stage least squares (2SLS). The equation of our first-stage regression is:

$$Meeting_{it} = \beta_0 + \delta_1 Distance_{it} + \delta_2 Internet_{i,t} + \Upsilon Control_{it} + QuarterFE_t + \varepsilon_{it} \quad (4)$$

where $Distance_{it}$ and $Internet_{i,t}$ are instrumental variables. $Meeting_{it}$ is the private meeting variable measured by $Meeting\_Dummy_{i,t}$ and $Meeting\_Number_{i,t}$. The control variables $Control_{it}$ are defined in the Appendix.

The second-stage regression estimates the impact of predicted private meetings on stock liquidity:

$$Liquidity_{it} = \beta_0 + \delta_3 \widehat{Meeting}_{it} + \Upsilon Control_{it} + QuarterFE_t + \varepsilon_{it} \quad (5)$$

where $\widehat{Meeting}_{it}$ is the predicted private meeting variable from Eq. (4). $Liquidity_{it}$ is the stock liquidity measured by $Amihud_{it}$ and PS_{it}. δ_3 captures the causal effect of private meetings on stock liquidity of the instrument variables.

Table 3.4 reports the 2SLS results. Columns (1) and (4) represent the first stage based on Eq. (4), where we regress private meeting dummy variable $Meeting\_Dummy_{i,t}$ and frequency variable $Meeting\_Number_{i,t}$ on two instrumental variables $Distance_{it}$ and $Internet_{i,t}$. We find the coefficients of instrument variables are all significant and negative, suggesting that travel distance and investors' internet access negatively affect their private meeting decisions. The negative effect of $Internet_{i,t}$ on $Meeting\_Dummy_{i,t}$ and $Meeting\_Number_{i,t}$ may also imply that investors' increasing access to the internet and more active interactions with managers through

a supervised internet-based platform could facilitate investors' information acquisition and may have a crowding-out effect on public firms' selective disclosures to preferred private meeting participants and thus promote fair disclosure. The Cragg-Donald statistic is significant at 1% level and the Sargan statistic is not significant, indicating that there are no weak instrumental variables and no over-identified problem. Columns (2) and (3) of Table 3.4 present the second stage regression results based on Eq. (3). The coefficients of $Meeting\_Dummy_{i,t}$ in columns (2) and (3) are all significant and positive, consistent with the previous results in Table 3.2. Columns (4) to (6) of Table 3.4 represent the 2SLS results with the private meeting frequency variable. The results are consistent with those using the private meeting dummy variable reported in Columns (1) to (3).

[Please Place Table 3.4 Here]

3.4.1.4 Robustness check

We first use three alternative stock liquidity measures, which are also used in prior literature (e.g., Lesmond et al. 1999; Ng et al. 2015; Brogaard et al. 2017), to test the robustness of our results. These variables are the number of zero return days ($Zeros_{it}$), the number of non-zero trading days (Non_Zeros_{it}) and stock trading volume ($Volume_{it}$), defined in formulas (6) to (8) and the Appendix:

$$Zeros_{it} = -\frac{Zeros\_D_{it}}{D_{it}} \tag{6}$$

$$Non\_Zeros_{it} = \ln(D_{it} - Zeros\_D_{it} + 1) \tag{7}$$

$$Volume_{it} = \ln\left(\sum_{d=1}^{D_{it}} V_{itd} + 1\right) \tag{8}$$

where $Zeros\_D_{it}$ is the number of zero return days of the company *i* in quarter *t*; D_{it} is the total number of trading days of the company *i* in quarter *t*; V_{itd} is the daily transaction amount for the trading day *d* of the company *i* in quarter *t*. We make negative adjustments to $Zeros_{it}$, so a higher value implies higher stock liquidity.

We use the Eq. (3) for empirical analysis, where $Liquidity_{it}$ is measured by $Zeros_{it}$, Non_Zeros_{it} and $Volume_{it}$, respectively, and $Meeting_{it}$ is measured by $Meeting\_Dummy_{i,t}$ and $Meeting\_Number_{i,t}$. Table 3.5 reports the results. The coefficients of $Meeting\_Dummy_{i,t}$ and $Meeting\_Number_{i,t}$ are all positive at the 1% significance level, consistent with our previous findings.

[Please Place Table 3.5 Here]

We further use different empirical models to conduct robustness tests. The first model is the Tobit model, and the second one is the fixed effect panel model. Columns (1) to (4) of Table 3.6 report the results of the Tobit model, and Columns (5) to (8) report the results of the fixed effect panel model. All the coefficients of $Meeting\_Dummy_{i,t}$ and $Meeting\_Number_{i,t}$ are significantly positive, consistent with our previous results.

[Please Place Table 3.6 Here]

3.4.1.5 Additional analysis

In an additional untabulated analysis, we perform separate regressions on Eq. (3) by industry group. We find that the regression results for the manufacturing, construction, and water, environment, and public management industries (about 70% of the observations in our sample) are all positive at the 1% level, consistent with our previous findings. For some industries (e.g., farming, forestry, fishery industry, accommodation and food industry, sanitation and social welfare industry, education industry), the regression results are insignificant, and we consider that the small sample size could be a reason. We find mixed results for certain industries (e.g., wholesale and retail trade, information transfer, computer and software industry, cultural and entertainment industry). We consider that some specific company attributes, such as ownership concentration, firm age, and the economic region to which the firm belongs, may differentiate firms in terms of information flows.

We also perform a non-linear regression, and the square term is significantly negative, but the linear term is positive, suggesting an inverted U shape curve. These results may imply that at relatively low levels of the meeting numbers, the relation between private meetings and stock liquidity is positive, but at some point, it reaches a threshold after which more meetings do not translate into more liquidity and may even lead to less liquidity. A potential explanation is that some private meetings are beneficial in reducing information asymmetry, i.e., they are informative, but over a certain threshold, more meetings could create confusion rather than provide information. Causal explorations of the association are left for our future research.

3.4.2 The impacts of private meeting informativeness and meeting participants' heterogeneity on stock liquidity

3.4.2.1 The impact of meeting informativeness on stock liquidity

We expect that informative private meetings promote stock liquidity, and private meetings are more informative if more investors attend meetings and they acquire information by asking more searching questions and receiving more detailed answers from managers.

We use $Participant\_Number_{i,t}$, $Ques\_Number_{i,t}$, $Ques\_Length_{i,t}$ and $Answer\_Length_{i,t}$ to present the number of private meeting participants, the number of questions asked by investors, the length of each question from investors and the length of each answer from managers. Then we use Eq. (3) for regression to test the impact of private meeting informativeness on stock liquidity, where $Liquidity_{it}$ is measured by $Amihud_{i,t}$ and $PS_{i,t}$, and $Meeting_{it}$ is replaced by $Participant\_Number_{i,t}$ and $Ques\_Number_{i,t}$, $Ques\_Number_{i,t}$, $Ques\_Length_{i,t}$. The results are reported in Table 3.7. The coefficients of the four variables are all positive and significant at the 1% level, indicating that private meetings improve stock liquidity when more investors participate in private meetings, when participating investors ask more searching questions, when the questions are more comprehensive and when managers provide more detailed answers. The empirical results in Table 3.7 are consistent with our expectations that informative private meetings help increase stock liquidity.

[Please Place Table 3.7 Here]

3.4.2.2 The impact of meeting participants' heterogeneity on stock liquidity

In this section, we analyze the effects of private meetings on stock liquidity from the

perspective of meeting participants' heterogeneity.

We define buy-side meeting participants as those who attend private meetings mainly for better investment opportunities and asset management (e.g., mutual funds, insurance funds, asset managers) and sell-side meeting participants as those who attend private meetings mainly for better client services (e.g., brokerage firms, investment advisory firms, accounting and law firms). We first delete the observations without private meetings and then remove the individual meeting participants from our sample. Since we use quarterly data in our analysis, and a company may have multiple meetings in one quarter with different meeting types, participants and contents, we delete these observations to avoid the influence of the multiple meetings.

The regression results are reported in Table 3.8. Column (1) represents only buy-side participants attending meetings, column (2) represents both buy-side and sell-side participants attending meetings, and column (3) represents only sell-side participants attending meetings. The coefficient of $Meeting\_Number_{i,t}$ in column (1) is not significant, while the coefficients in columns (2) and (3) are positive and significant at the 1% level, respectively. The results suggest that the effect of private meetings on stock liquidity is insignificant if only buy-side institutions attend the meetings. In contrast, if only sell-side institutions attend the meetings or buy-side institutions attend meetings along with sell-side institutions, this effect is significant. A possible explanation is that buy-side participants acquire information from private meetings for internal investment management, while sell-side participants acquire information from private meetings, and they perform research, provide services and make recommendations to their external clients for profit. Therefore, sell-side participants are more motivated to conduct in-depth research and to derive more reliable information from private meetings. As a result, the information obtained by sell-side and buy-side participants is incorporated and transmitted to the market differently.

[Please Place Table 3.8 Here]

3.5 Private meetings and the mechanism of information disclosure

In this section, we explore the potential mechanism of information disclosure from the perspectives of commonality in liquidity, firms' information environment and firm size. We highlight the importance of timely disclosure of private meetings that benefits the capital market by reducing information asymmetry and improving stock liquidity.

3.5.1 Private meetings and stocks' commonality in liquidity

Individual stock liquidity could be affected by a market-wide liquidity component. Brockman et al. (2009) provide evidence for commonality in liquidity as a global phenomenon. Commonality in liquidity refers to the impact of a common or market-wide liquidity factor on an individual firm (Brockman et al., 2009; Li and Wang, 2019). In this section, we furnish an understanding of private meetings and stock liquidity by taking a perspective of commonality in liquidity.

We examine the association between private meetings and the stock co-movement in liquidity, i.e., commonality in liquidity. We apply the methodology of Deng et al. (2018) to calculate the stock liquidity commonality. Specifically, we use the Goodness of Fit (R^2) from a regression of individual stock liquidity on market liquidity as the measure of stock liquidity co-movement, as shown in Eq. 9.

$$lliq_{i,d} = \beta_0 + \beta_1 \times lliq_{m,d-1} + \beta_2 \times lliq_{m,d} + \beta_3 \times lliq_{m,d+1} + \varepsilon_{it} \quad (9)$$

where $lliq_{i,d}$ is the daily change rate of the liquidity index (measured by $-\frac{|R_{itd}|}{V_{itd}} \times 10^{10}$, as daily Amihud index) of the company *i* on the trading day *d* ; $lliq_{m,d}$ is the daily change rate of the market liquidity index on the trading day *d* (measured by $-\frac{|R_{mtd}|}{V_{mtd}} \times 10^{10}$, where R_{mtd} is the market return rate on the trading day *d* in quarter *t*, V_{mtd} is the market transaction volume in dollars on the trading day *d* in quarter *t*).

Then we use Eq. 10 to calculate liquidity commonality, where R^2 is the goodness of fit in Eq. 9.

$$Commonality_{i,t} = \ln\left(\frac{R^2}{1-R^2}\right) \quad (10)$$

We examine the association between private meetings and stock liquidity commonality based on Eq.3. We use stock liquidity commonality as the dependent variable and six private meeting measures as independent variables. The regression results are reported in Table 3.9. The coefficients of the six independent variables are all negative and significant at 1% level, indicating that private meetings reduce individual stocks' commonality in liquidity, and the negative effect is more significant when the company hold more meetings, when more investors participate in the meetings, and when meeting participants ask more comprehensive questions and receive more detailed answers. These findings suggest that private meetings improve stock liquidity, and the increased individual stock liquidity does not come from the impact of market liquidity.

[Please Place Table 3.9 Here]

3.5.2 Private meetings and information environment

A firm's information environment has the potential to affect liquidity and liquidity co-movement (Lang and Maffett, 2011), and disclosure rules reduce informational asymmetries and increase liquidity (Amihud et al., 2005).

Previous studies suggest that firms with poor information environments offer greater potential information benefits to private meeting participants (Liu et al., 2017; Cheng et al., 2019, Yang et al. 2020). Compared with companies with high disclosure quality, it is more difficult for external investors to obtain information from companies with poor disclosure quality. Therefore, mandatory and timely disclosure of private meetings mitigate this information asymmetry and increase stock liquidity.

Following (Cheng et al., 2019), we use information disclosure quality rated by SZSE to proxy for firms' information environment. SZSE issues appraisal results of listed companies' information disclosure every year. Listed companies' disclosure quality is divided into ABCD four grades and A represents the highest quality and no less than 25% of listed companies are rated as A.

We separate the sample into two groups, where the high disclosure quality group is for companies rated as A and the low disclosure quality group is for companies rated as B, C and D. We test the liquidity effects of private meetings for the two groups and the regression results are reported in Table 3.10. Columns (1) and (3) are results for the high disclosure quality group, and

columns (2) and (4) are results for the low disclosure quality group. All the coefficients of *Meeting_Dummy* and *Meeting_Number* are significant and positive, while the coefficients of the group with low disclosure quality are significantly bigger than those of the group with high disclosure quality. The results are consistent with Cheng et al. (2019), indicating that the effect of private meetings on stock liquidity is stronger for firms with low information disclosure quality. External investors obtain more marginal information from less transparent companies because of the timely disclosure.

Our findings imply that timely disclosure of private meetings has delivered new information to the market, especially for firms with low disclosure quality, thereby reducing the information asymmetry and increased stock liquidity.

[Please Place Table 3.10 Here]

3.5.3 Private meetings and firm size

Firm size could affect the liquidity impact of private meetings. On the one hand, investor attention increases with firm size (Aouadi et al. 2013). Investors and analysts are generally more willing to visit large firms to acquire information and develop relationships with management. The increased investor attention to large firms could accelerate firms' information dissemination to the market (Aouadi et al. 2013). On the other hand, larger firms have higher disclosure levels than smaller firms (Eng and Mak, 2003; Embong et al., 2012). Therefore, timely disclosure of larger firms' private meetings may incorporate less new information to external investors.

To test the effect of firm size, we divide the sample into two groups based on the average asset size of each industry and quarter. The regression results are reported in Table 3.11. The coefficients of $Meeting\_Dummy_{i,t}$ and $Meeting\_Number_{i,t}$ are all significant and positive for both big firms and small firms. However, the coefficients of the small firm group are significantly larger than those of the big firm group, suggesting that the impact of private meetings on stock liquidity is stronger for small firms. The results imply that timely disclosure conveys more private information for small firms.

[Please Place Table 3.11 Here]

3.6 Conclusion and discussion

Private access to management is important for investors to acquire information, while it raises concerns for the disparity between investors' ability to access information. To enhance the fairness and transparency of the information disclosure, SZSE requires all listed firms to disclose such private meetings in two trading days via its Easy IR platform. Using the most recent detailed private meeting records between 2013 to 2019, this paper investigates the impact of private meetings on stock liquidity under this stricter disclosure regulation.

Our results show that private meetings between senior managers and investors significantly improve stock liquidity, and this positive impact is even stronger when firms hold private meetings more frequently, when more investors participate in meetings, and when meeting participants ask more searching questions and receive more detailed answers. We also document the meeting participants' heterogeneity, suggesting their different motivations for private meetings, and their different influence on information transmission. We find that the effect of private meetings on stock liquidity is insignificant if only buy-side institutions attend the meetings. However, if only

sell-side institutions attend the meetings or buy-side institutions attend meetings along with sell-side institutions, this effect is significant.

We explore the potential mechanism of information disclosure and highlight the importance of timely disclosure of private meetings. Taking a perspective of commonality in liquidity, we find private meetings reduce individual stock's liquidity commonality. It implies that the increased stock liquidity is not caused by market liquidity. Moreover, from the aspect of firms' information environment and firm size, we document that the positive effect of private meetings on stock liquidity is greater for low information disclosure quality firms and small firms, indicating that timely disclosure of private meetings incorporates and transmits new information to the market.

Overall, our study provides evidence that under timely disclosure regulation, private meetings between managers and investors improve stock liquidity. Timely disclosure of private meetings enhances information transparency and increases the fairness of information acquisition.

We acknowledge the differences in the information environment and legal system between China and other countries, so our results may not be generalizable to other markets. However, our findings may have implications for both companies and regulators. First, although timely disclosure of private meetings is not mandatory in most stock exchanges, listed companies may still consider voluntarily and actively disclose their private meetings to attract more investors to increase stock liquidity and therefore reduce cost of capital. Second, regulators may consider stricter disclosure requirements for private meetings, especially for firms with low disclosure quality and small firms, to promote corporate transparency and benefit all market participants. Finally, as information technology has advanced, a centralized Internet-based communication channel like Easy IR may be an efficient platform for investors to interact with listed companies and acquire information.

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Appendix

Variable	Definition
Dependent Variables	
$Amihud_{it}$	Based on Amihud (2002), $Amihud_{it}$ is defined as: $Amihud_{it} = -\frac{1}{D_{it}}\sum_{d=1}^{D_{it}}\frac{\lvert R_{itd}\rvert}{V_{itd}} \times 10^{10}$, where D_{it} is the total number of trading days of the company *i* in quarter *t*, R_{itd} is the daily return rate on the trading day *d* of the company *i* in quarter *t*, V_{itd} is the daily transaction volume in dollars on the trading day *d* of the company *i* in quarter *t*. It is multiplied by 10^{10} for better presentation. Since Amihud (2002) is used to measure stock illiquidity, we take the negative value to measure stock liquidity.
PS_{it}	PS_{it} is defined as: $PS_{it} = -\frac{1}{D_{it}}\sum_{d=1}^{D_{it}}\frac{\ln(P_{itd}^{H}/P_{itd}^{L})}{V_{itd}} \times 10^{10}$, where D_{it} is the total number of trading days of the company *i* in quarter *t*, P_{itd}^{H} is the highest stock price of the company *i* on the trading day *d* in quarter *t*; P_{itd}^{L} is the lowest stock price of the company *i* on the trading day *d* in quarter *t*; and V_{itd} is the daily transaction volume in dollars for the trading day *d* of the company *i* in quarter *t*. It is multiplied by 10^{10} for better presentation. We take the negative value in the calculation to present stock liquidity.
$Zeros_{it}$	Refer to Lesmond et al. (1999), our variable is defined as: $Zeros_{it} = -\frac{Zeros\_D_{it}}{D_{it}}$, where $Zeros\_D_{it}$ and D_{it} respectively represent the number of zero return days and the number of trading days of the company *i* in quarter *t*. Since the variable in Lesmond et al. (1999) is used to measure stock illiquidity, we take the negative value to measure stock liquidity.
Non_Zeros_{it}	The natural logarithm of one plus the quarterly total number of non-zero return trading day.
$Volume_{it}$	The natural logarithm of one plus the quarterly total amount of trading volume.
$Commonality_{it}$	Refer to Deng et al. (2018), we first run the regression: $lliq_{i,d} = \beta_0 + \beta_1 \times lliq_{m,d-1} + \beta_2 \times lliq_{m,d} + \beta_3 \times lliq_{m,d+1} + \varepsilon_{it}$, where $lliq_{i,d}$ is the daily change rate of the liquidity index of the company *i* on the trading day *d* and $lliq_{m,d}$ is the daily change rate of the market liquidity index on the trading day *d*. Then $Commonality_{it}$ is measured as: $Commonality_{i,t} = \ln(\frac{R^2}{1-R^2})$, where R^2 is the Goodness of Fit of

	the first step regression.
Independent Variables	
$Meeting\_Dummy_{i,t}$	An indicator variable that takes the value of one if a firm has at least one private meeting and zero otherwise.
$Meeting\_Number_{i,t}$	The natural logarithm of one plus a quarterly total number of private meetings.
$Participant\_Number_{i,t}$	The natural logarithm of one plus a quarterly total number of people participate in private meetings.
$Ques\_Number_{i,t}$	The natural logarithm of one plus a quarterly total number of questions listed by investors in private meetings.
$Ques\_Length_{i,t}$	The natural logarithm of one plus a quarterly total number of characters in questions.
$Answer\_Length_{i,t}$	The natural logarithm of one plus a quarterly total number of characters in answers.
Control Variables	
$Skewness_{i,t}$	Skewness of a firm's daily stock returns in each quarter
$Kurtosis_{i,t}$	Kurtosis of a firm's daily stock returns in each quarter
$Volatility_{i,t}$	Standard deviation of a firm's daily stock returns
$Size_{i,t}$	The natural logarithm of total assets.
$Debt_{i,t}$	Total liabilities divided by total assets.
$Fix_{i,t}$	Total tangible assets divided by total assets.
$Institution_{i,t}$	Total number of shares held by institutions divided by total shares.
$ROA_{i,t}$	Net income divided by total assets.
$SOE_{i,t}$	An indicator variable that equals to one if the firm is a state-owned enterprise and zero otherwise.
Instrumental variables	
$Distance_{it}$	The travel distance in 100 kilometers between a firm's registered office and the provincial capital.
$Internet_{i,t}$	The number of provincial internet broadband access ports divided by provincial annual GDP.

Table 3.1 Summary statistics

Panel A. Descriptive statistics

Variable	Mean	Standard Deviation	Minimum	Median	Maximum
$Amihud_{i,t}$	-5.439	9.931	-83.40	-3.042	-0.237
PS_{it}	-8.773	9.815	-73.45	-5.705	-0.441
$Meeting\_Dummy_{i,t}$	0.419	0.493	0	0	1
$Meeting\_Number_{i,t}$	0.471	0.641	0	0	4.094
$Participant\_Nmuber_{i,t}$	0.798	1.164	0	0	7.261
$Ques\_Number_{i,t}$	0.848	1.064	0	0	5.030
$Ques\_Length_{i,t}$	2.019	2.468	0	0	9.054
$Answer\_Length_{i,t}$	2.814	3.393	0	0	9.910
$Skewness_{i,t}$	0.0460	0.686	-1.754	0.0290	2.059
$Kurtosis_{i,t}$	4.555	2.089	1.692	4.025	13.12
$Volatility_{i,t}$	0.0300	0.0130	0.0110	0.0270	0.0760
$Size_{i,t}$	21.88	1.129	19.70	21.76	25.64
$Debt_{i,t}$	0.382	0.202	0.0420	0.364	0.925
$Fix_{i,t}$	0.489	0.224	-0.0760	0.486	0.922
$Institution_{i,t}$	0.311	0.229	0	0.288	0.815
$ROA_{i,t}$	0.0110	0.0190	-0.0830	0.0100	0.0710
$SOE_{i,t}$	0.228	0.420	0	0	1

Panel B. Mean and median differences

	Meetings (N = 19445)		Non-Meeting (N = 26917)		Difference	
Variable	(1) Mean	(2) Median	(3) Mean	(4) Median	(1)-(3) T Test	(2)-(4) Z Test
$Amihud_{i,t}$	-4.587	-2.493	-6.055	-3.514	1.469***	909.879***
PS_{it}	-7.175	-4.690	-9.927	-6.588	2.752***	951.219***
$Skewness_{i,t}$	0.0500	0.0320	0.0440	0.0270	0.00600	0.610
$Kurtosis_{i,t}$	4.363	3.862	4.693	4.146	-0.329***	264.800***
$Volatility_{i,t}$	0.030	0.027	0.030	0.027	0.001***	38.936***
$Size_{i,t}$	22.02	21.87	21.79	21.69	0.234***	226.477***
$Debt_{i,t}$	0.371	0.356	0.390	0.370	-0.018***	23.130***
$Fix_{i,t}$	0.501	0.499	0.481	0.477	0.020***	47.852***
$Institution_{i,t}$	0.322	0.294	0.302	0.284	0.020***	5.942**
$ROA_{i,t}$	0.015	0.013	0.008	0.008	0.007***	1237.012***
$SOE_{i,t}$	0.204	0	0.246	0	-0.042***	111.035***

Panel A reports the summary statistics for the main variables. The sample period is from the first quarter of 2013 to the fourth quarter of 2019. The total number of firm-quarter observations is 46362. All variables are defined in the Appendix.

Panel B reports the mean and median differences between the observations with (*Meetings*) and without (*Non-Meeting*) private meetings. There are 19445 firm-quarter observations for the *Meetings* group and 26917 firm-quarter observations for the *Non-Meeting* group. The last two columns report the mean and median differences between *Meetings* and *Non-Meeting*. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3.2 Private meetings and stock liquidity

	(1)	(2)	(3)	(4)
	$Amihud_{i,t}$	PS_{it}	$Amihud_{i,t}$	PS_{it}
$Meeting\_Dummy_{i,t}$	0.852***	1.079***		
	(9.932)	(14.002)		
$Meeting\_Number_{i,t}$			0.734***	0.901***
			(11.527)	(16.445)
$Skewness_{i,t}$	-0.457***	-1.147***	-0.464***	-1.156***
	(-7.431)	(-18.186)	(-7.552)	(-18.325)
$Kurtosis_{i,t}$	-1.110***	-1.244***	-1.106***	-1.240***
	(-25.480)	(-29.617)	(-25.407)	(-29.546)
$Volatility_{i,t}$	-419.043***	-28.578**	-419.974***	-29.655**
	(-29.815)	(-2.300)	(-29.864)	(-2.386)
$Size_{i,t}$	1.114***	3.189***	1.085***	3.156***
	(23.786)	(64.956)	(22.836)	(63.753)
$Debt_{i,t}$	-3.132***	-5.294***	-3.146***	-5.314***
	(-8.243)	(-15.421)	(-8.281)	(-15.483)
$Fix_{i,t}$	-2.911***	-2.086***	-2.962***	-2.145***
	(-8.546)	(-6.950)	(-8.691)	(-7.132)
$Institution_{i,t}$	0.646***	-0.729***	0.619***	-0.760***
	(3.542)	(-4.119)	(3.398)	(-4.297)
$ROA_{i,t}$	-7.095***	3.490*	-7.508***	3.094
	(-3.205)	(1.665)	(-3.386)	(1.475)
$SOE_{i,t}$	-0.168*	-0.151*	-0.158*	-0.142
	(-1.907)	(-1.656)	(-1.796)	(-1.557)
$Constant$	-12.719***	-72.561***	-12.013***	-71.765***
	(-9.074)	(-51.130)	(-8.490)	(-50.218)
Industry Fixed Effect	YES	YES	YES	YES
Quarter Fixed Effect	YES	YES	YES	YES
R^2	0.278	0.351	0.278	0.351
Number	46362	46362	46362	46362

Table 3.2 reports the regression results of private meetings on stock liquidity using the equation (3):

$$Liquidity_{it} = \beta_0 + \beta_1 Meeting_{it} + \Upsilon Control_{it} + Industry\ FE_i + Quarter\ FE_t + \varepsilon_{it}$$

All variables are defined in the Appendix. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3.3 The estimation based on propensity score matching (PSM) approach

	(1)	(2)	(3)	(4)
	$Amihud_{it}$	PS_{it}	$Amihud_{it}$	PS_{it}
$Meeting\_Dummy_{i,t}$	0.829***	1.032***		
	(7.955)	(11.010)		
$Meeting\_Number_{i,t}$			0.697***	0.842***
			(9.679)	(13.773)
$Skewness_{i,t}$	-0.662***	-1.286***	-0.672***	-1.297***
	(-8.362)	(-16.441)	(-8.485)	(-16.582)
$Kurtosis_{i,t}$	-1.142***	-1.249***	-1.136***	-1.243***
	(-20.643)	(-23.976)	(-20.561)	(-23.893)
$Volatility_{i,t}$	-425.040***	-47.624***	-426.540***	-49.375***
	(-24.554)	(-3.176)	(-24.617)	(-3.291)
$Size_{i,t}$	1.042***	3.006***	0.992***	2.946***
	(18.006)	(52.971)	(16.807)	(51.406)
$Debt_{i,t}$	-3.325***	-5.099***	-3.319***	-5.093***
	(-6.884)	(-13.235)	(-6.876)	(-13.225)
$Fix_{i,t}$	-3.131***	-2.052***	-3.203***	-2.138***
	(-7.292)	(-6.136)	(-7.458)	(-6.379)
$Institution_{i,t}$	0.782***	-0.481**	0.749***	-0.520***
	(3.561)	(-2.413)	(3.411)	(-2.617)
$ROA_{i,t}$	0.210	18.330***	-0.840	17.106***
	(0.072)	(7.218)	(-0.288)	(6.724)
$SOE_{i,t}$	-0.140	0.007	-0.122	0.028
	(-1.289)	(0.067)	(-1.126)	(0.264)
$Constant$	-10.624***	-68.517***	-9.401***	-67.054***
	(-6.097)	(-40.662)	(-5.325)	(-39.494)
Industry Fixed Effect	YES	YES	YES	YES
Quarter Fixed Effect	YES	YES	YES	YES
R^2	0.284	0.360	0.285	0.361
Number	30326	30326	30326	30326

Table 3.3 reports the regression results of the PSM analysis. All variables are defined in the Appendix. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3.4 Instrumental variable (IV) and the 2SLS analysis

	(1) $Meeting\_Dummy_{i,t}$	(2) $Amihud_{it}$	(3) PS_{it}	(4) $Meeting\_Number_{i,t}$	(5) $Amihud_{it}$	(6) PS_{it}
$Meeting\_Dummy_{i,t}$		4.264***	2.450***			
		(4.252)	(2.626)			
$Meeting\_Number_{i,t}$					3.348***	1.895***
					(4.276)	(2.601)
$Distance_{it}$	-0.028***			-0.037***		
	(-14.716)			(-15.105)		
$Internet_{i,t}$	-1.157***			-1.384***		
	(-10.146)			(-9.432)		
$Skewness_{i,t}$	0.000	-0.512***	-1.178***	0.010**	-0.545***	-1.197***
	(0.091)	(-7.726)	(-19.110)	(2.273)	(-8.189)	(-19.315)
$Kurtosis_{i,t}$	-0.016***	-1.100***	-1.272***	-0.025***	-1.087***	-1.265***
	(-13.497)	(-40.012)	(-49.730)	(-15.961)	(-36.972)	(-46.260)
$Volatility_{i,t}$	2.507***	-404.695***	-11.539**	4.160***	-407.946***	-13.280**
	(9.513)	(-72.388)	(-2.218)	(12.270)	(-68.123)	(-2.383)
$Size_{i,t}$	0.100***	0.784***	3.030***	0.154***	0.694***	2.982***
	(38.163)	(7.029)	(29.196)	(45.762)	(5.324)	(24.597)
$Debt_{i,t}$	-0.139***	-4.676***	-8.300***	-0.116***	-4.882***	-8.422***
	(-6.408)	(-10.917)	(-20.826)	(-4.159)	(-11.808)	(-21.893)
$Fix_{i,t}$	0.104***	-4.516***	-4.205***	0.216***	-4.797***	-4.361***
	(5.401)	(-12.268)	(-12.279)	(8.730)	(-12.303)	(-12.021)
$Institution_{i,t}$	0.037***	0.212	-0.983***	0.073***	0.127	-1.030***
	(3.418)	(1.045)	(-5.210)	(5.214)	(0.614)	(-5.369)
$ROA_{i,t}$	3.240***	-18.860***	-0.243	4.250***	-19.271***	-0.355
	(26.896)	(-4.729)	(-0.065)	(27.417)	(-4.756)	(-0.094)
$SOE_{i,t}$	-0.111***	0.159	0.021	-0.147***	0.178	0.027
	(-19.093)	(1.058)	(0.147)	(-19.721)	(1.162)	(0.191)
$Constant$	-1.718***	-6.293***	-68.853***	-2.917***	-3.861	-67.542***
	(-27.656)	(-2.935)	(-34.509)	(-36.503)	(-1.466)	(-27.566)
Quarter Fixed Effect	YES	YES	YES	YES	YES	YES
R^2	0.106	0.243	0.329	0.122	0.243	0.329
Cragg-Donald Wald	170.508***			168.843***		
Sargan Statistic		0.370	0.296		0.182	0.430
Number	46362	46362	46362	46362	46362	46362

Table 3.4 reports the regression results of the IV and 2SLS analysis. All variables are defined in the Appendix. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3.5 Different measures and estimations of stock liquidity

	(1) $Zeros_{it}$	(2) Non_Zeros_{it}	(3) $Volume_{it}$	(4) $Zeros_{it}$	(5) Non_Zeros_{it}	(6) $Volume_{it}$
$Meeting\_Dummy_{i,t}$	0.285***	0.016***	0.121***			
	(12.273)	(11.579)	(11.600)			
$Meeting\_Number_{i,t}$				0.239***	0.017***	0.121***
				(13.483)	(16.945)	(14.969)
$Skewness_{i,t}$	-0.101***	0.001	-0.149***	-0.103***	0.001	-0.151***
	(-4.681)	(1.073)	(-19.049)	(-4.791)	(0.940)	(-19.224)
$Kurtosis_{i,t}$	-0.204***	-0.005***	-0.113***	-0.203***	-0.005***	-0.113***
	(-27.632)	(-12.572)	(-32.672)	(-27.472)	(-12.248)	(-32.440)
$Volatility_{i,t}$	85.070***	-3.663***	4.165***	84.781***	-3.690***	3.975***
	(62.636)	(-27.797)	(3.910)	(62.455)	(-28.021)	(3.733)
$Size_{i,t}$	-0.205***	-0.008***	0.434***	-0.213***	-0.009***	0.427***
	(-13.417)	(-9.490)	(68.960)	(-13.944)	(-10.597)	(67.282)
$Debt_{i,t}$	-0.310***	0.036***	-0.391***	-0.315***	0.036***	-0.391***
	(-2.665)	(4.986)	(-7.498)	(-2.711)	(4.997)	(-7.505)
$Fix_{i,t}$	-0.025	0.046***	-0.028	-0.041	0.044***	-0.039
	(-0.255)	(7.286)	(-0.631)	(-0.414)	(7.057)	(-0.863)
$Institution_{i,t}$	0.403***	-0.002	-0.194***	0.395***	-0.003	-0.199***
	(7.179)	(-0.617)	(-8.052)	(7.031)	(-0.858)	(-8.286)
$ROA_{i,t}$	15.090***	0.276***	3.364***	14.982***	0.257***	3.234***
	(23.292)	(7.308)	(11.452)	(23.094)	(6.787)	(11.005)
$SOE_{i,t}$	-0.052	0.015***	0.006	-0.049	0.015***	0.009
	(-1.611)	(9.125)	(0.467)	(-1.532)	(9.418)	(0.718)
$Constant$	0.611*	4.227***	8.613***	0.824**	4.250***	8.769***
	(1.661)	(201.634)	(53.215)	(2.235)	(200.901)	(53.821)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES
Quarter Fixed Effect	YES	YES	YES	YES	YES	YES
R^2	0.264	0.145	0.385	0.265	0.147	0.386
Number	46362	46362	46362	46362	46362	46362

Table 3.5 reports the regression results of private meetings on stock liquidity using alternative liquidity measures. All variables are defined in the Appendix. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3.6 Different empirical models

	(1) $Amihud_{it}$	(2) PS_{it}	(3) $Amihud_{it}$	(4) PS_{it}	(5) $Amihud_{it}$	(6) PS_{it}	(7) $Amihud_{it}$	(8) PS_{it}
$Meeting\_Dummy_{i,t}$	0.852***	1.079***			0.933***	1.025***		
	(9.941)	(14.015)			(9.130)	(10.602)		
$Meeting\_Number_{i,t}$			0.734***	0.901***			0.977***	1.025***
			(11.537)	(16.460)			(11.106)	(12.434)
$Skewness_{i,t}$	-0.457***	-1.147***	-0.464***	-1.156***	-0.459***	-1.169***	-0.465***	-1.176***
	(-7.438)	(-18.202)	(-7.558)	(-18.341)	(-6.809)	(-17.807)	(-6.912)	(-17.917)
$Kurtosis_{i,t}$	-1.110***	-1.244***	-1.106***	-1.240***	-1.056***	-1.171***	-1.049***	-1.165***
	(-25.503)	(-29.643)	(-25.430)	(-29.572)	(-22.508)	(-25.697)	(-22.397)	(-25.599)
$Volatility_{i,t}$	-419.043***	-28.578**	-419.974***	-29.655**	-436.537***	-36.316***	-438.594***	-38.360***
	(-29.842)	(-2.302)	(-29.891)	(-2.388)	(-30.417)	(-2.747)	(-30.523)	(-2.899)
$Size_{i,t}$	1.114***	3.189***	1.085***	3.156***	1.273***	2.703***	1.264***	2.698***
	(23.807)	(65.014)	(22.856)	(63.810)	(7.079)	(13.087)	(7.029)	(13.023)
$Debt_{i,t}$	-3.132***	-5.294***	-3.146***	-5.314***	-2.511**	-2.817***	-2.510**	-2.818***
	(-8.250)	(-15.435)	(-8.288)	(-15.497)	(-2.478)	(-2.614)	(-2.480)	(-2.616)
$Fix_{i,t}$	-2.911***	-2.086***	-2.962***	-2.145***	-3.757***	-1.402	-3.738***	-1.376
	(-8.554)	(-6.956)	(-8.698)	(-7.139)	(-4.381)	(-1.535)	(-4.359)	(-1.506)
$Institution_{i,t}$	0.646***	-0.729***	0.619***	-0.760***	2.584***	0.308	2.481***	0.207
	(3.545)	(-4.123)	(3.401)	(-4.301)	(5.696)	(0.581)	(5.474)	(0.389)
$ROA_{i,t}$	-7.095***	3.490*	-7.508***	3.094	1.916	4.954*	1.217	4.302
	(-3.208)	(1.666)	(-3.389)	(1.477)	(0.730)	(1.869)	(0.464)	(1.632)
$SOE_{i,t}$	-0.168*	-0.151*	-0.158*	-0.142				
	(-1.909)	(-1.657)	(-1.798)	(-1.559)				
$Constant$	-12.719***	-72.561***	-12.013***	-71.765***	-17.085***	-65.270***	-16.889***	-65.150***
	(-9.082)	(-51.175)	(-8.498)	(-50.263)	(-4.120)	(-13.773)	(-4.072)	(-13.700)
Individual Fixed Effect	NO	NO	NO	NO	YES	YES	YES	YES
Industry Fixed Effect	YES	YES	YES	YES	NO	NO	NO	NO
Quarter Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
R^2					0.252	0.295	0.253	0.296
Pseudo R^2	0.044	0.058	0.044	0.058				
Number	46362	46362	46362	46362	46362	46362	46362	46362

Table 3.6 reports the regression results of private meetings on stock liquidity using different empirical models. Columns (1) to (4) report the results using Tobit model and Columns (5) to (8) report the results using fixed effect panel model. All variables are defined in the Appendix. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3.7 Meetings informativeness and stock liquidity

	(1) $Amihud_{it}$	(2) PS_{it}	(3) $Amihud_{it}$	(4) PS_{it}	(5) $Amihud_{it}$	(6) PS_{it}	(7) $Amihud_{it}$	(8) PS_{it}
$Participant\_Number_i$	0.319***	0.450***						
	(8.404)	(14.539)						
$Ques\_Number_{i,t}$			0.380***	0.473***				
			(9.269)	(12.912)				
$Ques\_Length_{i,t}$					0.165***	0.210***		
					(9.258)	(13.312)		
$Answer\_Length_{i,t}$							0.122***	0.155***
							(9.649)	(13.838)
$Skewness_{i,t}$	-0.461***	-1.153***	-0.454***	-1.144***	-0.455***	-1.146***	-0.455***	-1.146***
	(-7.497)	(-18.282)	(-7.395)	(-18.147)	(-7.414)	(-18.169)	(-7.413)	(-18.168)
$Kurtosis_{i,t}$	-1.109***	-1.241***	-1.111***	-1.245***	-1.111***	-1.245***	-1.111***	-1.245***
	(-25.454)	(-29.552)	(-25.483)	(-29.627)	(-25.491)	(-29.628)	(-25.502)	(-29.643)
$Volatility_{i,t}$	-420.087***	-30.291**	-419.298***	-28.857**	-419.332***	-28.962**	-419.141***	-28.709**
	(-29.847)	(-2.435)	(-29.820)	(-2.321)	(-29.822)	(-2.330)	(-29.818)	(-2.310)
$Size_{i,t}$	1.120***	3.184***	1.131***	3.212***	1.128***	3.205***	1.119***	3.195***
	(23.891)	(64.891)	(24.328)	(65.769)	(24.198)	(65.549)	(23.910)	(65.154)
$Debt_{i,t}$	-3.110***	-5.249***	-3.125***	-5.288***	-3.119***	-5.277***	-3.120***	-5.279***
	(-8.186)	(-15.302)	(-8.227)	(-15.408)	(-8.211)	(-15.377)	(-8.211)	(-15.381)
$Fix_{i,t}$	-2.843	-2.002***	-2.905***	-2.075***	-2.893***	-2.063***	-2.895***	-2.065***
	(-8.352)	(-6.686)	(-8.526)	(-6.917)	(-8.493)	(-6.878)	(-8.499)	(-6.886)
$Institution_{i,t}$	0.625***	-0.764***	0.647***	-0.727***	0.653***	-0.720***	0.660***	-0.711***
	(3.428)	(-4.318)	(3.546)	(-4.104)	(3.580)	(-4.068)	(3.618)	(-4.018)
$ROA_{i,t}$	-7.255***	2.858	-7.088***	3.563*	-7.085***	3.476*	-7.060***	3.523*
	(-3.247)	(1.354)	(-3.196)	(1.696)	(-3.194)	(1.655)	(-3.186)	(1.678)
$SOE_{i,t}$	-0.168*	-0.140	-0.168*	-0.152*	-0.168*	-0.150*	-0.166*	-0.148
	(-1.909)	(-1.539)	(-1.911)	(-1.675)	(-1.909)	(-1.647)	(-1.886)	(-1.623)
$Constant$	-12.737***	-72.330***	-13.020***	-72.975***	-12.964***	-72.856***	-12.796***	-72.651***
	(-9.063)	(-50.912)	(-9.322)	(-51.578)	(-9.271)	(-51.449)	(-9.127)	(-51.207)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Quarter Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
R^2	0.278	0.350	0.278	0.350	0.278	0.350	0.278	0.351
Number	46362	46362	46362	46362	46362	46362	46362	46362

Table 3.7 reports the regression results of meetings informativeness on stock liquidity. All variables are defined in the Appendix. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3.8 Meeting participants' heterogeneity and stock liquidity

	(1) Buy-side $Amihud_{it}$	(2) Buy & Sell $Amihud_{it}$	(3) Sell-side $Amihud_{it}$	(4) Buy-side PS_{it}	(5) Buy & Sell PS_{it}	(6) Sell-side PS_{it}
$Meeting\_Number_{i,t}$	1.342	0.596**	1.549***	0.837	0.968***	1.123*
	(1.629)	(2.263)	(3.091)	(0.784)	(5.105)	(1.823)
$Skewness_{i,t}$	0.135	-0.995***	0.111	-0.688*	-1.574***	-0.309
	(0.400)	(-6.064)	(0.503)	(-1.838)	(-10.463)	(-1.300)
$Kurtosis_{i,t}$	-0.571**	-1.246***	-0.631***	-0.847***	-1.367***	-0.851***
	(-2.299)	(-11.486)	(-3.975)	(-3.308)	(-13.705)	(-5.035)
$Volatility_{i,t}$	-211.514***	-492.238***	-238.068***	162.458**	-117.063***	63.345
	(-2.653)	(-15.881)	(-3.555)	(2.181)	(-4.439)	(1.033)
$Size_{i,t}$	1.707***	0.666***	1.460***	4.094***	2.438***	3.358***
	(6.651)	(5.711)	(6.687)	(12.705)	(23.622)	(15.255)
$Debt_{i,t}$	-1.497	-2.076**	-2.212*	-6.443***	-3.326***	-3.941***
	(-0.730)	(-2.239)	(-1.784)	(-3.470)	(-5.313)	(-2.672)
$Fix_{i,t}$	0.540	-2.343***	-2.501**	0.645	-1.778***	-1.464
	(0.292)	(-2.865)	(-2.159)	(0.410)	(-3.127)	(-1.190)
$Institution_{i,t}$	0.432	1.367***	-1.188*	-1.442	-0.149	-3.051***
	(0.562)	(3.169)	(-1.808)	(-1.543)	(-0.430)	(-4.359)
$ROA_{i,t}$	1.408	-0.781	14.225*	-6.609	10.994**	24.631***
	(0.129)	(-0.148)	(1.888)	(-0.492)	(2.458)	(2.933)
$SOE_{i,t}$	0.313	-0.488**	0.751***	0.425	-0.151	1.074***
	(0.700)	(-2.144)	(3.041)	(0.868)	(-0.787)	(3.156)
$Constant$	-36.197***	-1.462	-28.462***	-98.523***	-54.530***	-81.101***
	(-4.874)	(-0.424)	(-4.481)	(-11.305)	(-17.080)	(-13.071)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES
Quarter Fixed Effect	YES	YES	YES	YES	YES	YES
R^2	0.240	0.310	0.234	0.432	0.356	0.418
Number	1388	8957	2481	1388	8957	2481

Table 3.8 reports the regression results of meeting participants' heterogeneity on stock liquidity. All variables are defined in the Appendix. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3.9 Private meetings and stock's commonality in liquidity

	(1) $Commonality_{it}$	(2) $Commonality_{it}$	(3) $Commonality_{it}$	(4) $Commonality_{it}$	(5) $Commonality_{it}$	(6) $Commonality_{it}$
$Meeting\_Dummy_{i,t}$	-0.093***					
	(-6.634)					
$Meeting\_Number_{i,t}$		-0.080***				
		(-7.399)				
$Participant\_Number_{i,}$			-0.041***			
			(-6.776)			
$Ques\_Number_{i,t}$				-0.038***		
				(-5.793)		
$Ques\_Length_{i,t}$					-0.017***	
					(-6.029)	
$Answer\_Length_{i,t}$						-0.013***
						(-6.135)
$Skewness_{i,t}$	-0.048***	-0.048***	-0.048***	-0.049***	-0.048***	-0.048***
	(-4.497)	(-4.424)	(-4.446)	(-4.518)	(-4.508)	(-4.509)
$Kurtosis_{i,t}$	0.028***	0.028***	0.028***	0.028***	0.028***	0.028***
	(7.662)	(7.537)	(7.560)	(7.705)	(7.697)	(7.707)
$Volatility_{i,t}$	-6.119***	-6.017***	-5.955***	-6.109***	-6.099***	-6.120***
	(-6.849)	(-6.730)	(-6.659)	(-6.835)	(-6.824)	(-6.848)
$Size_{i,t}$	0.010	0.013	0.011	0.007	0.008	0.009
	(1.175)	(1.556)	(1.285)	(0.868)	(0.940)	(1.039)
$Debt_{i,t}$	0.181***	0.182***	0.176**	0.181***	0.180***	0.180***
	(2.617)	(2.639)	(2.550)	(2.619)	(2.606)	(2.608)
$Fix_{i,t}$	0.082	0.087	0.075	0.080	0.079	0.079
	(1.345)	(1.436)	(1.229)	(1.319)	(1.304)	(1.307)
$Institution_{i,t}$	-0.116***	-0.113***	-0.112***	-0.116***	-0.117***	-0.117***
	(-3.539)	(-3.448)	(-3.432)	(-3.554)	(-3.570)	(-3.592)
$ROA_{i,t}$	-2.442***	-2.398***	-2.370***	-2.470***	-2.461***	-2.465***
	(-6.979)	(-6.849)	(-6.756)	(-7.052)	(-7.027)	(-7.040)
$SOE_{i,t}$	0.047***	0.046***	0.046***	0.048***	0.048***	0.048***
	(2.702)	(2.641)	(2.626)	(2.743)	(2.729)	(2.719)
$Constant$	-3.746***	-3.822***	-3.776***	-3.699***	-3.709***	-3.726***
	(-18.724)	(-18.985)	(-18.841)	(-18.544)	(-18.586)	(-18.637)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES
Quarter Fixed Effect	YES	YES	YES	YES	YES	YES
R^2	0.115	0.115	0.115	0.115	0.115	0.115
Number	46362	46362	46362	46362	46362	46362

Table 3.9 reports the regression results of private meetings on stock liquidity commonality. All variables are defined in the Appendix. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3.10 Private meetings and firms' information environment

	(1) High $Amihud_{it}$	(2) Low $Amihud_{it}$	(3) High $Amihud_{it}$	(4) Low $Amihud_{it}$	(5) High PS_{it}	(6) Low PS_{it}	(7) High PS_{it}	(8) Low PS_{it}
$Meeting\_Dummy_{i,t}$	0.404***	0.994***			0.792***	1.146***		
	(2.886)	(9.795)			(5.689)	(12.716)		
$Meeting\_Number_{i,t}$			0.375***	0.898***			0.586***	1.017***
			(4.391)	(10.867)			(7.080)	(14.637)
$Skewness_{i,t}$	-0.291**	-0.454***	-0.300***	-0.457***	-0.788***	-1.197***	-0.801***	-1.200***
	(-2.510)	(-6.445)	(-2.592)	(-6.487)	(-6.736)	(-16.557)	(-6.836)	(-16.606)
$Kurtosis_{i,t}$	-0.478***	-1.235***	-0.474***	-1.231***	-0.620***	-1.363***	-0.617***	-1.360***
	(-5.535)	(-25.197)	(-5.507)	(-25.138)	(-7.401)	(-28.802)	(-7.387)	(-28.753)
$Volatility_{i,t}$	-182.414***	-456.606***	-184.110***	-457.632***	133.673***	-53.919***	131.465***	-55.034***
	(-5.259)	(-30.278)	(-5.293)	(-30.328)	(4.676)	(-4.021)	(4.590)	(-4.102)
$Size_{i,t}$	1.401***	1.148***	1.356***	1.132***	3.181***	3.259***	3.125***	3.243***
	(16.188)	(20.853)	(15.060)	(20.457)	(34.748)	(56.732)	(33.368)	(56.399)
$Debt_{i,t}$	-2.998***	-3.153***	-3.021***	-3.156***	-5.273***	-5.334***	-5.331***	-5.338***
	(-3.400)	(-7.471)	(-3.420)	(-7.479)	(-7.031)	(-13.917)	(-7.100)	(-13.931)
$Fix_{i,t}$	-1.792**	-2.862***	-1.853**	-2.888***	-2.028***	-2.027***	-2.127***	-2.054***
	(-2.236)	(-7.579)	(-2.310)	(-7.644)	(-3.540)	(-5.960)	(-3.697)	(-6.035)
$Institution_{i,t}$	0.422	0.634***	0.434	0.595***	-0.071	-1.060***	-0.044	-1.104***
	(1.301)	(2.953)	(1.334)	(2.769)	(-0.230)	(-5.069)	(-0.143)	(-5.287)
$ROA_{i,t}$	26.505***	-11.819***	25.823***	-12.155***	52.763***	-4.458*	52.147***	-4.780**
	(5.523)	(-4.777)	(5.333)	(-4.912)	(11.427)	(-1.918)	(11.259)	(-2.056)
$SOE_{i,t}$	-0.008	-0.174	0.004	-0.161	-0.017	-0.139	-0.006	-0.126
	(-0.060)	(-1.643)	(0.034)	(-1.516)	(-0.119)	(-1.276)	(-0.044)	(-1.158)
$Constant$	-27.512***	-12.261***	-26.466***	-11.855***	-78.546***	-73.180***	-77.148***	-72.759***
	(-9.004)	(-7.863)	(-8.445)	(-7.574)	(-26.750)	(-45.965)	(-25.799)	(-45.623)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Quarter Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Chi^2 Statistic	11.71***		19.49***		4.59**		15.96***	
R^2	0.204	0.296	0.204	0.296	0.422	0.346	0.423	0.347
Number	9228	37134	9228	37134	9228	37134	9228	37134

Table 3.10 reports the regression results of private meetings on stock liquidity based on firms' information environment. Following (Cheng et al., 2019), we use information disclosure quality rated by SZSE to proxy for firms' information environment and separate the sample into high disclosure quality group (companies rated as A) and low disclosure quality group (companies rated as B, C and D). Columns (1), (3), (5), (7) are results for the high disclosure quality group, and columns (2), (4), (6), (8) are results for the low disclosure quality group. All variables are defined in the Appendix. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Table 3.11 Private meetings and firm size

	(1) Big firm $Amihud_{it}$	(2) Small firm $Amihud_{it}$	(3) Big firm $Amihud_{it}$	(4) Small firm $Amihud_{it}$	(5) Big firm PS_{it}	(6) Small firm PS_{it}	(7) Big firm PS_{it}	(8) Small firm PS_{it}
$Meeting\_Dummy_{i,t}$	0.507***	1.210***			0.834***	1.320***		
	(7.038)	(8.226)			(12.011)	(10.211)		
$Meeting\_Number_{i,t}$			0.380***	1.162***			0.587***	1.254***
			(7.704)	(9.516)			(12.445)	(12.488)
$Skewness_{i,t}$	-0.103*	-0.464***	-0.109*	-0.468***	-0.519***	-1.424***	-0.528***	-1.428***
	(-1.860)	(-4.510)	(-1.960)	(-4.553)	(-8.767)	(-13.667)	(-8.906)	(-13.716)
$Kurtosis_{i,t}$	-0.274***	-1.701***	-0.272***	-1.693***	-0.352***	-1.932***	-0.351***	-1.924***
	(-6.350)	(-26.742)	(-6.327)	(-26.633)	(-9.936)	(-30.661)	(-9.908)	(-30.571)
$Volatility_{i,t}$	-117.382***	-552.608***	-117.875***	-554.170***	136.628***	-91.895***	135.972***	-93.552***
	(-6.168)	(-32.633)	(-6.189)	(-32.700)	(10.392)	(-6.017)	(10.335)	(-6.122)
$Size_{i,t}$	1.338***	1.039***	1.311***	1.007***	2.958***	3.146***	2.920***	3.114***
	(28.776)	(7.624)	(27.362)	(7.368)	(56.717)	(23.643)	(55.276)	(23.390)
$Debt_{i,t}$	-1.966***	-3.655***	-1.951***	-3.675***	-3.713***	-5.631***	-3.694***	-5.654***
	(-4.721)	(-5.529)	(-4.681)	(-5.562)	(-10.875)	(-9.182)	(-10.808)	(-9.222)
$Fix_{i,t}$	0.107	-3.449***	0.082	-3.481***	1.429***	-2.849***	1.397***	-2.882***
	(0.273)	(-6.059)	(0.209)	(-6.116)	(4.411)	(-5.542)	(4.308)	(-5.603)
$Institution_{i,t}$	-0.433**	1.411***	-0.429**	1.343***	-1.484***	-0.456	-1.473***	-0.530*
	(-2.377)	(4.532)	(-2.359)	(4.314)	(-8.064)	(-1.559)	(-8.004)	(-1.811)
$ROA_{i,t}$	7.937***	-13.446***	7.730***	-14.117***	18.852***	-5.027	18.707***	-5.708*
	(2.949)	(-4.255)	(2.864)	(-4.460)	(8.474)	(-1.641)	(8.395)	(-1.864)
$SOE_{i,t}$	-0.052	-0.040	-0.053	-0.004	-0.198**	0.193	-0.203**	0.230
	(-0.673)	(-0.231)	(-0.683)	(-0.022)	(-2.318)	(1.109)	(-2.369)	(1.327)
$Constant$	-29.040***	-6.479**	-28.407***	-5.717*	-74.910***	-69.138***	-74.021***	-68.353***
	(-19.169)	(-2.023)	(-18.440)	(-1.779)	(-50.909)	(-22.044)	(-49.784)	(-21.768)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Quarter Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Chi^2 Statistic	18.47***		35.36***		11.01***		36.28***	
R^2	0.167	0.330	0.167	0.331	0.396	0.345	0.396	0.346
Number	21569	24793	21569	24793	21569	24793	21569	24793

Table 3.11 reports the regression results of private meetings on stock liquidity based on firm size. We divide the sample into two groups (Big and Small) based on the average asset size of each industry and quarter. Columns (1), (3), (5), (7) are results for big companies, and columns (2), (4), (6), (8) are results for small companies. All variables are defined in the Appendix. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Chapter 4: Interactive Communication, Investor Relations, and Investor Information Assimilation

4.1 Introduction

Firms rely on a variety of channels to communicate with financial stakeholders. Such communications typically aim to provide information, discharge accountability obligations, build relationships, and facilitate decision-making (Brennan and Merkl-Davies, 2018). Thus, successful communication can help companies form stronger investor relationships (SEC, 1998). Building on Grunig and Hunt's (1984) three key dimensions of corporate communication (direction of information flow, power relationship between company and its audiences, and the purpose of communication), Brennan and Merkl-Davies (2018) develop a broad conceptual model of corporate communication in a capital market context, suggesting that effective communication is a two-way, dynamic and interactive process with information flowing between firms and their audiences.

In this regard, digital media interaction can enhance the connectivity of information, change asymmetric power relations between firms and a more comprehensive range of shareholders, and thus provide opportunities for increasing the effectiveness of corporate communication. Whereas disseminating information online is quite established (Ki & Chung, 2011) and the financial community increasingly uses web sources as a basis for potential investment decisions, there is scant knowledge as to how virtual dialogues via external platforms affect corporate communications and investor relations (Macnamara and Zerfass, 2012; Koehler, 2014).

In this paper, we focus on the two-way communication between firms and their financial audience and examine the effectiveness of such interactive communication from both the information supply side (firms) and the demand side (investors). Specifically, we empirically test whether interactive communication helps improve firms' investor relations (IR) and investors' information assimilation.

Our study differs from recent research that explores how firms initiate and direct communication via corporate social media such as Twitter and Facebook to disseminate news and manage the flow of firm information (e.g., Blankespoor et al., 2014a; Brown, Stice and White, 2015; Lee et al., 2015; Jung et al., 2018). We rely on investor-generated interaction between listed firms and market participants through a centralized and stock exchange authorized platform, where firms have much weaker control over the multi-way dialogue, and we focus on the interactive feature of the communication. A key motivation for this study is to provide empirical evidence on whether more power-balanced financial communication between firms and their audience facilitates mutual understanding and relationship building.

We collect the interactive communication data from Shenzhen Stock Exchange (SZSE) "Easy IR (Hudongyi)" platform. This platform provides a unique setting to examine firms' public and private communications with investors. Easy IR is authorized and regulated by SZSE, and all market participants have access to the platform to ask questions and obtain firms' interactions with other investors, including private communications. Easy IR features multiple functions and services, such as communicating, voting, informing, analyzing, consulting, and advising on one platform. SZSE assesses firms' engagement in the interaction regularly, and it is one of the indicators used by SZSE to evaluate firms' information environment and disclosure quality. Appendix A provides the key features of Easy IR and some examples of the Questions and Replies

(Q&Rs) on this platform. Appendix B gives the related regulations on the Easy IR platform and cases of non-compliance/violations and disciplinary actions.

According to the SZSE 2020 survey (SZSE News, 2021), SZSE-listed companies communicated with investors online mainly through Easy IR (97%), online shareholder meetings (76%), and online briefings (61%), in the forms of text-based Q&A and teleconferences. About 80% of companies believe online communication with investors is effective and satisfactory. Easy IR has become the primary communication channel for SZSE-listed companies, and investors raised a total of 367,000 questions on Easy IR in 2020, an increase of 50% year on year. Listed companies generally attach importance to IR management and its compliance and have a strong willingness to convey corporate value to investors; 95% of the SZSE-listed companies have formulated policies on IR management, 73% of the companies assigned 2 full-time personnel, and 22% assigned 3 full-time personnel for IR management (SZSE News, 2021).

Our final sample comprises 2,146 SZSE-listed firms and 43,836 firm-quarter observations in 18 industries between January 2013 to December 2019. The data analysis shows that on average, investors actively communicate with 98.4% of the listed firms by asking questions through the Easy IR platform, and firms respond to 93.4% of the questions within 7 days.

We first test the impact of interactive communication on investor relations. Many companies' investor relations strategies are designed primarily to increase firm visibility and attract institutional investors (Bushee and Miller., 2012; Kirk and Vincent, 2014). Moreover, direct communication with investors and information intermediaries increases management's credibility and thus significantly impacts the success of firms' IR strategy (Bushee and Miller., 2012). Following Bushee and Miller (2012) and Brochet et al. (2020), we use firm visibility to proxy for firms' investor relations, measured by institutional investor following and analyst following. Our results show that the more frequent the interaction between investors and listed companies, the higher the firms' visibility, reflected in the positive changes in firms' institutional ownership and the increased number of analyst following.

We then investigate whether interactive communication via the platform helps market participants assimilate firm information. Drawing on Chapman et al. (2019), we construct stock return volatility to measure information assimilation and view assimilation as the process of developing a comprehensive and contextual understanding of a firm and its prospects. Prior theoretical and empirical studies (e.g., Barry 1978; Brown 1979; Dye 1985; Billings et al., 2015) indicate that investors are uncertain about the parameters of the distribution of firms' future cash flows and their uncertainty positively correlates with future stock return volatility. If market participants can better assimilate firm information and lower their uncertainty through interactive communication, there should be reduced stock return volatility (Chapman et al., 2019). Our results do not suggest that interactive communication directly contributes to lower stock return volatility and thus enhances investors' assimilation. On the contrary, increased interaction relates to higher stock return volatility, implying that interactive communication via the platform may cause market participants to face information overload and higher processing costs.

We further explore whether interactive communication affects firms' investor relations and investors' information assimilation through the channel of private meetings. Previous studies document that investors and analysts highly value private communication with top managers to access information and develop relations with the firm (e.g., Brown et al., 2015, 2016; Cheng et al., 2016; Bengtzen, 2017). Information assimilation occurs during private communications when

managers focus on the needs of the participating investors and when investors are involved in the two-way conversation to acquire a clearer and contextual understanding of the firm (Chapman et al., 2019). Our findings suggest a positive association between interactive communication and firms' private meetings with investors or analysts. The findings could imply that interactive communication attracts institutional investors and analysts by improving firm visibility and further increases investors' and analysts' willingness to attend private meetings to build direct relationships with management, gain insights into the company, and facilitate their information assimilation.

Overall, our paper provides evidence that interactive communication via the centralized and stock exchange regulated platform affects firms' investor relations by improving investor following and analysts following. However, increased interactions via the platform could also add complexity to investors and increase their information processing cost, especially for less-sophisticated investors. We document a positive relationship between interactive communication and firms' private meetings with investors and analysts, implying that private meetings may act as a potential channel through which managers clarify company information, help attracted investors and analysts to understand the company's narrative and develop investor relations.

We consider our paper contributes to the growing disclosure literature that examines social media platforms and firms' financial communications. Prior studies examine the managerial incentives to use social media as a disclosure channel and provide insights on its capital market consequences (e.g., Blankespoor et al., 2014a; Brown, Stice and White, 2015). Our study focuses on the interactive feature of online communication and examines the impact of investor-generated interaction between firms and market participants. Brennan and Merkl-Davies (2018) argue that corporate communication is more than disclosing and transferring information; it is a process involving storytelling and relationship-building. We provide empirical evidence that interactive communication helps companies build relationships with their financial audiences. We also offer insights into investors' information assimilation. Our findings imply that although two-way interactive communication empowers investors, especially small investors, to engage in dialogue with firm managers and input inquiries, comments, and criticism, it may not significantly enhance investors' interpretation of firm news, due to information overload and investors' limited information processing ability. Furthermore, we may add some new understanding of financial communication by exploring the association between firms' public and private interactions with market participants.

Our study is based on a centralized, regulated communication platform that has the potential to change the power imbalance between the information supply side (firms) and the demand side (investors) and make financial communication more effective. Generalizing to other markets without such authorized and regulated communication platforms, the findings still have implications for both companies and investors. First, firms' active engagement in the multi-way dialogue could help them gain broader attention of market participants, target desired investors, and develop investor relations. Second, while investors, especially less sophisticated investors, are changing the way they acquire and interpret firm information from passive one-way disclosure to active two-way communication, they should be more aware of the possible misleading information on websites and improve their ability to process company information adequately.

Our study also extends the developing literature on investor relations. Different from existing research (Bushee and Miller, 2012; Chapman et al., 2019; Brochet et al., 2020) that focuses on the initiation of IR programs or explores the benefits of external IR consultants and in-house IR officers, our analyses show a positive effect of interactive communication on investor

relations through a regulated platform. Our results suggest that although firms may lose certain control over the interactive communication via the external platform, active participation in the interactions still benefit companies in developing investor relations, and it may provide some insights for companies' future IR programs.

Finally, our study may be of interest to regulators. Current disclosure regulations promote fair disclosure and improve reporting readability and clarity. Our analyses imply that interactive online communication could have negative informational attributes resulting in information overload and market noise. Although regulators prohibit listed companies from providing inaccurate and incomplete information when communicating with investors, there are still pseudo-signals and misleading information in the market since online media platforms enable users with diverse backgrounds and incentives to generate and disseminate their own content about firms (Drake et al., 2017). Our study suggests that enhancing investor education and the regulatory oversight of information dissemination via online communication platforms become crucial for investors to better process and assimilate firm news.

The remainder of this paper is organized as follows. Section 2 provides an overview of the current literature and the institutional environment. Section 3 describes data, sample, and empirical methodology. Section 4 and 5 reports the empirical tests and the results. Section 6 presents the conclusion and discussion.

4.2 Literature review and institutional environment

4.2.1 Literature review

Information asymmetry between firms' managers and outside capital providers has long been recognized in the literature (Beyer et al., 2010). Financial stakeholders – i.e., retail investors, institutional investors, and financial analysts face with incomplete information about a company's commercial and non-commercial activities due to the market inefficiency and information asymmetry, and they are seeking greater clarity and understanding of the corporate story that is adapted to their interests; therefore, communication between a company and its financial stakeholders becomes critically important for the company to increase these stakeholders' confidence in the company's future prospects and thereby enhance firms' access to financial capital and create a favorable relationship with key external audiences (Van Riel and Fombrun, 2007).

Prior research (e.g., Diamond and Verrecchia, 1991; Kim and Verrecchia, 1994; Leuz and Verrecchia, 2000; Shroff et al. 2013; Cuadrado-Ballesteros et al., 2016) provides theoretical models and empirical evidence that public disclosure reduces information asymmetry and improves market efficiency. With the advancements in information technology, firms have changed the way they disseminate information and communicate with stakeholders (Lee et al., 2015; Miller and Skinner, 2015). New direct-access information technologies including social networks become an integral component of firm communication and investor relations (Blankespoor et al., 2014a), and firms' decision to disseminate financial information through digital platforms may be viewed as an extension of their disclosure strategy (Jung et al., 2018).

Building on insights from communication studies and linguistics, Brennan and Merkl-Davies (2018) develop a conceptual model of corporate communication in a capital market context, arguing that offering financial stakeholders the opportunity to provide feedback, query information, and to arrive at a mutual understanding of company issues is particularly important in improving

the effectiveness of corporate communication. They identify three aspects of financial communication, namely the one-way asymmetrical communication, which entails firms disseminating information to financial stakeholders who are viewed as passive recipients, the two-way asymmetrical communication, which involves firms attempting to influence financial stakeholders' decision-making in a way that benefits firms, and the two-way symmetrical communication, which entails firms interacting with financial stakeholders as a means to arrive at mutual understanding and build strong relationships. In their conceptual model, Brennan and Merkl-Davies (2018) introduce the key concept of connectivity, referring to the ability to connect different sections of a text (textual connectivity), to connect texts of different periods or different genres (intertextual connectivity), and to connect firms with their audiences (relational connectivity). They advocate that using digital media is the most fruitful avenue for improving the effectiveness of financial communication with a wider group of shareholders by incorporating features which address audience- and context-based standards of textuality.

Empirical study has begun to examine online financial communications between firms and their stakeholders. Koehler (2014) gives an overview of how the top listed companies in five major markets have implemented dialogic and dialogue-oriented online communications when building relationships with different financial community members. The study shows that holding virtual dialogues with the financial community is demanding, which requires new technical platforms, resources, strategic approaches and especially, the company's willingness and ability to participate in the dialogue. Using a sample of information technology firms with active Twitter accounts, Blankespoor et al. (2014a) examine whether firms can reduce information asymmetry by more broadly disseminating firm-initiated information via Twitter. Their findings indicate that firms, particularly those that are not highly visible, can use Twitter as a complementary communication channel to reduce information asymmetry measured by abnormal bid-ask spreads and market depths, and broad dissemination also has real market consequences in the form of increased liquidity. Lee et al. (2015) explore the benefits and the costs of interactive social media platforms within the context of corporate disclosure. They find that corporate social media is a potential, useful channel to deliver intended messages to a broader set of stakeholders, which moderates the negative market reaction during product crisis, and this moderating effect is nuanced and varies with the level of firm engagement and with the control exerted by other users.

Recent research also explores online financial communications from the investors' perspective as individual investors increasingly rely on digital media platforms for corporate news and investment advice. Curtis et al. (2016) focus on the role of individual investors' social media activity and find that investor attention through online social media networks is associated with efficient pricing of earnings news, suggesting that sharing information using online social media might enhance market efficiency. Bartov et al. (2018) investigate whether the aggregate opinion from individual investors on social media platform about a firm can help investors predict the firm's earnings and announcement returns, and their findings indicate that Twitter is an important channel for individual investors to share information and can help investors in their investment decisions. By taking an experimental approach, Cade (2018) examines how firm-investor communications on social media platforms affect nonprofessional investors' evaluations of the firm as an investment and the firm's reputation. The study provides evidence that firms' engagement in the bidirectional conversations with investors after receiving negative attention on social media platforms can mitigate the unfavorable effect on corporate reputation and investors' investment judgement.

Although the advent of external platforms and online communications provide new and easily accessible sources of information, it is important to note that market participants may face information overload and high processing costs given their limited processing abilities to integrate corporate news (Hirshleifer and Teoh, 2003; Blankespoor et al., 2014b; Chapman et al., 2019). Drake et al. (2017) document that web information provided by non-professional intermediaries may add pseudo-signals to the market, hinder price formation and increase noise trading. Chapman et al. (2019) contend that investors and analysts often need help to assimilate the implications of firm information, particularly when there have been large increases in the frequency and length of disclosures and firm-related discussions via online platforms. They argue that two-way communication is precisely the mechanism through which firms' investor relation officers provide their financial stakeholders assimilation benefits by synthesizing and summarizing information, correcting misinformation, and clarifying details.

Collectively, prior literature indicates that financial communication through online platforms has become increasingly important for firms to disseminate information to a wider audience, for financial stakeholders to understand firm news, and therefore help reduce information asymmetry and enhance favorable investor relations. However, the study on the use of digital media platforms for financial communication is at an early stage, with limited evidence on the market impacts of corporate use of various digital communication platforms and the role played by real-time interaction between market participants (Lee et al., 2015; Debreceny, 2015).

4.2.2 SZSE Institutional environment

SZSE Easy IR platform was formally established in 2011. It is a centralized and direct communication channel between investors and listed companies. Through this public interactive platform, investors can search company information, ask questions, make suggestions and complaints to listed companies, and obtain communication information between firms and other investors. In July 2012, SZSE further required all listed companies to disclose their private meeting information with selected investors and analysts within two trading days via this platform.

The big difference between the Easy IR platform and other online communication platforms is that Easy IR is an authoritative platform and regulated by SZSE. The stock exchange stipulates that SZSE-listed companies shall not disclose material information through this interactive platform, while investors can use it to communicate their questions and concerns with listed companies. Listed companies should appoint a board secretary or representative to be responsible for answering investors' questions posted on the platform.

In principle, listed companies should reply to investors' questions within two trading days; for questions that cannot be answered timely, listed companies should explain the reasons. When answering questions, companies cannot provide inaccurate and incomplete information. SZSE regularly assesses whether listed companies respond to investors' questions timely and participate in the interactions effectively. Companies' engagement in the interaction through this platform is one of the indicators used by SZSE to evaluate the companies' information disclosure quality and failure to comply with the regulations may result in public criticism, regulatory and disciplinary actions (SZSE Notice on Issues Related to Easy IR platform, 2013).

This regulated interactive platform ensures some accountability of firm information, reduces market noise, and improves the efficiency and effectiveness of communication between listed companies and investors. Since undisclosed material information cannot be communicated

on the platform, investors are mainly participating in the interaction to improve their information acquisition and understanding, while listed companies are participating in the interaction by explaining and replying to questions to build trust and relationships with investors.

In summary, the Easy IR is an innovative channel for two-way communication initiated by investors, regulated by the stock exchange and actively participated by listed firms, with more reliable information, less company control and high interactivity; it provides a unique setting to explore firms' public and private communications with investors.

4.3 Data, sample and empirical methodology

4.3.1 Data and sample

Our sample period starts from 2013 after SZSE introduced its Easy IR platform in 2011 and after SZSE mandatorily required listed firms to disclose their investor relation activities in July 2012. We collect all text information between January 2013 and December 2019 from the investor Q&A column on the Easy IR platform. We delete the invalid question with less than 15 words and our initial sample includes 2,953,161 questions raised by investors and 2,791,629 answers from 2,231 SZSE-listed companies.

We also obtain firms' private meeting data from their standard investor relation activity record sheets published on the Easy IR platform. Our stock market data and financial data are from the China Stock Market & Accounting Research Database (CSMAR), a comprehensive database for Chinese listed firms. We exclude special treatment (ST) firms, financial firms, and firms that have missing values. We also eliminate firms that quarterly trading days less than 20 days. Thus, our final sample covers 2,146 firms and 43,836 firm-quarter observations in 18 industries.

4.3.2 Variables

4.3.2.1 Investor relations and firm visibility variables

One of the fundamental goals of firms' investor relation strategies' is to attract institutional investors and information intermediaries (Bushee and Miller, 2012). Following Bushee and Miller (2012) and Brochet et al. (2020), we use firm visibility to proxy for firms' investor relations, measured by institutional investor following and analyst following. Drawing on O'Brien and Bhushan (1990), we focus on institutions' endogenous decisions and use quarterly changes in institutional ownership ($Chg\_Institution_{i,t}$), rather than the level of institutional ownership as our proxy variable of institutional investor following. $Chg\_Institution_{i,t}$ is calculated as firms' quarterly change in the percentage of shares owned by institutional investors multiplied by 100. Analyst following ($Analyst_{i,t}$) is the number of analysts covering the firm in a quarter ($Analyst_{i,t}$), computed as the logarithm of the number of analysts coving the firm *i* plus one in quarter *t*.

4.3.2.2 Information assimilation variables

As our proxy variable, we use stock return volatility, an observable variable that is likely to be associated with market participants' information assimilation. Prior theoretical and empirical studies (e.g., Barry 1978; Brown 1979; Dye 1985; Billings et al., 2015) indicate that investors are uncertain about the parameters of the distribution of firms' future cash flows and their uncertainty positively correlates with future stock return volatility. If market participants can better assimilate firm information and lower their uncertainty through interactive communication, there should be

reduced stock return volatility (Chapman et al., 2019). We construct stock return volatility ($Volatility_{i,t}$) to examine the relevant impact of interactive communication on investors' information assimilation, measured by the standard deviation of firms' daily stock return during the quarter multiplied by 100.

4.3.2.3 Private meetings variables

We use private meetings between top management and investors to examine the impacts of interactive communication on firms' investor relations and market participants' information assimilation for two reasons. First, private meetings are important communicating activities for managers to develop relationships with shareholders, especially long-term block holders (Solomon and Soltes, 2015) and investors' direct access to management is viewed as the key driver of firms' IR strategy's success (Bushee and Miller, 2012). Second, private meetings reflect investors' information assimilation occurring in private communication. Although private communication is not permitted to disclose material information (SZSE Memo, 2012), investors and analysts still demand private meetings with management to obtain a clearer, more comprehensive, and contextual understanding of the firm and its prospects (Chapman et al., 2019).

We consider private meeting is an important channel for firms' investor relations and investors' information assimilation conducted privately. We measure private meetings from two aspects. First, we construct private meeting dummy variable ($Private\_Dummy_{i,t}$) and private meeting frequency variable ($Private\_Number_{i,t}$). $Private\_Dummy_{i,t}$ measures the occurrence of private meetings between managers and investors and is equal to one if the company *i* has at least one private meeting during the quarter *t*, and zero otherwise. $Private\_Number_{i,t}$ measures the frequency of private meetings between managers and investors and is the natural logarithm of one plus the total number of private meetings of the company *i* during the quarter *t*. Second, we construct private meeting variables based on investors' and analysts' heterogeneity, since many institutions attend private meetings with heterogeneous purposes (Soltes, 2014; Brown et al., 2015; Cheng et al., 2016). We define buy-side private meeting participants as those who attend meetings mainly for better investment opportunities and asset management (e.g., mutual funds, insurance funds, asset managers) and sell-side participants as those who attend meetings mainly for better client services (e.g., brokerage firms, investment advisory firms, accounting, and law firms). We use buy-side private meeting dummy and frequency variables ($Buy\_Dummy_{i,t}$, $Buy\_Number_{i,t}$), sell-side private meeting dummy and frequency variables ($Sell\_Dummy_{i,t}$, $Sell\_Number_{i,t}$), buy & sell private meeting dummy and frequency variables ($B\&S\_Dummy_{i,t}$, $B\&S\_Number_{i,t}$) to examine the possible different effects of interactive communication on investors' information assimilation through private meetings, where buy-side private meeting variables represent that only buy-side institutions participant private meetings, sell-side private meeting variables represent that only sell-side institutions participant private meetings, and buy & sell private meeting variables represents that buy-side and sell-side institutions attend private meetings jointly.

4.3.2.4 Interactive communication variables

We measure the interaction between investors and listed companies from two aspects. First, from the information demand-side, we measure investors' participation using the number of questions ($Ques\_number_{i,t-1}$) and the length of per question ($Ques\_length_{i,t-1}$) asked by investors as our proxy variables. $Ques\_number_{i,t-1}$ is calculated as the logarithm of one plus the number of total questions that investors asked via the interactive platform for company *i* during

the quarter *t-1*. $Ques\_length_{i,t-1}$ is computed as the logarithm of one plus the average number of words per question asked by investors for company *i* in quarter *t-1*.

Second, from the information supply-side, we measure firms' engagement using the number of questions replied ($Reply\_number_{i,t-1}$) and the length of per reply ($Reply\_length_{i,t-1}$) by listed companies as our proxy variables. $Reply\_number_{i,t-1}$ is the logarithm of one plus the number of questions answered by company *i* during the quarter *t-1*, and $Reply\_length_{i,t-1}$ is calculated as the logarithm of one plus the average number of words per reply for company *i* in quarter *t-1*.

4.3.2.5 Control variables

We control for various market and firm characteristics in our empirical tests. These control variables are: (1) Company size ($Size_{i,t-1}$); (2) Debt to asset ratio ($Debt_{i,t-1}$), the ratio of total liabilities to total assets; (3) Growth rate ($Growth_{i,t-1}$), growth rate of operating revenue; (4) State-owned enterprise dummy ($SOE_{i,t-1}$); (5) Return on assets ($ROA_{i,t-1}$); (6) Book to market ratio ($BM_{i,t-1}$); (7) Return ($Return_{i,t-1}$), annual stock return; (8) Forecasts ($Forecasts_{i,t-1}$), indicator variable that takes one if at least one analyst publishes an earnings forecast, otherwise takes 0; (9) Shareholding ratio of top five shareholders ($Top5_{i,t-1}$); (10) Shareholding ratio of institutional shareholders ($Institution_{i,t-1}$); (11) Analyst ($Analyst_{i,t-1}$), the logarithm of one plus the number of analysts covering the firm; (12) Skewness ($Skewness_{i,t-1}$); (13) Kurtosis ($Kurtosis_{i,t-1}$).

More detailed explanations of all the variables are provided in Appendix C.

4.3.3 Summary statistics

To minimize outliers, we winsorize all continuous variables by 1% from both tails. Panel A of Table 4.1 reports the summary statistics of the main variables. The average value of $Chg\_Institution_{i,t}$ is -0.153, indicating the changes in the quarterly holding ratio of institutional shareholders. The average value of the information assimilation variable $Volatility_{i,t}$ is 2.887 and the average values of the interactive communication variables $Ques\_number_{i,t-1}$ and $Reply\_number_{i,t-1}$ are 3.487 and 3.459 respectively, suggesting that a company has around 32 questions asked each quarter and 31 of them are answered. The average value of $SOE_{i,t-1}$ is 0.224, meaning that 22.4% of the observations in the sample firms are state-owned enterprises. Panel B of Table 4.1 reports the total number of firms in our sample in each quarter, the number of firms participating in the interaction in that quarter, and the ratio of interaction participating companies. It shows that about 98% of SZSE-listed firms participate in the interaction. Panel C of Table 4.1 lists the details of firms' quarterly investor interactions. On average, 93.4% of questions are answered within 7 days, indicating that listed firms attach importance to investor relations management and keep investor confidence by responding to their questions efficiently.

[Please Place Table 4.1 Here]

Table 4.2 reports the Pearson correlation coefficients between the explanatory variables.

[Please Place Table 4.2 Here]

4.4 Empirical tests and results

We use the following regression model to examine the impact of interactive communication on firms' investor relations and investors' information assimilation:

$$Dependent_{i,t} = \beta_0 + \beta_1 Interaction_{i,t-1} + \Upsilon Control_{i,t-1} + Industry\ FE_j + Quarter\ FE_t + \varepsilon_{i,t} \quad (1)$$

where $Dependent_{i,t-1}$ represents firm visibility and information assimilation variables. $Interaction_{i,t-1}$ represents interactive communication variables. The key coefficient of interest is β_1. The control variables $Control_{i,t-1}$ are defined in Appendix C. $Industry\ FE_j$ is the industry fixed effect. Since more than half of our sample firms are from the manufacturing sector, we include 29 sub-sectors in the manufacturing category to construct the industry variable in our empirical models based on the Guidelines for the Industry Classification of Listed Companies issued by the China Securities Regulatory Commission (CSRC) to capture the differences across the manufacturing sector better. $Quarter\ FE_t$ is the quarter fixed effect. $\varepsilon_{i,t}$ represents firm-level clustering robust standard error.

4.4.1 The impact of interactive communication on firms' investor relations

We use Eq. (1) to explore the association between interactive communication and firms' investor relations proxied by firm visibility.

We first test the effect of interactive communication on firms' institutional ownership changes, where $Dependent_{i,t}$ in Eq. (1) is represented by $Chg\_institution_{i,t}$. Table 4.3 panel A reports the regression results. The coefficients of the interaction variables $Ques_number_{i,t-1}$and $Reply\_number_{i,t-1}$ are significantly positive at 5% and 1% respectively, while the coefficients of $Reply\_length_{i,t-1}$ and $Ques\_length_{i,t-1}$ are insignificant. The results indicate that the more frequent the interaction between investors and listed companies, the higher the firms' visibility, reflected in the positive changes in firms' institutional ownership. However, the positive impact of interactive communication on attracting investors is only related to the number of questions raised by investors and the number of questions answered by listed companies, and whether the questions and answers are detailed is not significant in attracting investors.

We then test the effect of interactive communication on firms' analyst following, where $Dependent_{i,t}$ in Eq. (1) is $Analyst_{i,t}$. The regression results are reported in Table 4.3 panel B. The coefficients of all interactive communication variables are positive and significant, showing that both investors' participation and firms' engagement significantly increase the number of firms' analyst following.

[Please Place Table 4.3 Here]

4.4.2 The impact of interactive communication on investors' information assimilation

While market participants can receive corporate disclosures and other news about the firm, they often need help to understand the implications of the information for firm value, for example, information related to the increase in firms' capital expenditures, product market innovations, and competitor actions (Chapman et al., 2019). Large volumes of information from the web can bring

market noise and overload investors, particularly those smaller, less-sophisticated investors (Hirshleifer and Teoh, 2003; Blankespoor et al., 2014b), and increase their demand for informational assistance (Chapman et al., 2019).

We use Eq. (1) to examine the impact of interactive communication on investors' information assimilation, where $Dependent_{i,t}$ is represented by $Volatility_{i,t}$. Table 4.4 reports the regression results. We find that the coefficients of the interaction variables $Ques\_number_{i,t-1}$ $Ques\_length_{i,t-1}$ and $Reply\_number_{i,t-1}$ are significantly positive at the 1% level, while the coefficients of $Reply\_length_{i,t-1}$ is significant negative at 10%. The results suggest that the more frequent interactions between investors and listed firms, the greater the stock return volatility, and the detailed responses of listed companies to investors' questions help reduce the stock return volatility. The results support that information overload adds complexity to market participants and can undercut their information assimilation. Considering that individual retail investors, rather than institutional investors, dominate the Chinese stock market and account for more than 80% of value traded (Shanghai Stock Exchange Statistical Yearbook, 2019), and individual investors are usually short-term oriented and less-sophisticated, increased stock return volatility in our empirical test reflects individual investors' information assimilation associated with their information acquisition costs and their processing abilities.

[Please Place Table 4.4 Here]

4.4.3 The association between interactive communication and private meetings

Private meeting is an attractive method for managers to bond with investors and build shareholder loyalty to support firms' potential future strategic shifts (Bengtzen, 2017). It also provides advantages to meeting participating investors and analysts by helping investors make more informed trading decisions (e.g., Solomon and Soltes, 2015; Bushee et al., 2017), affecting analysts' forecast accuracy (Cheng et al., 2016) and decreasing uncertainty associated with market rumors (Bengtzen, 2017). Prior studies suggest that sell-side and buy-side investors have different private meeting motivations (e.g., Soltes, 2014; Cheng et al., 2016) and different impacts on market reactions (e.g., Bowen et al., 2018; Cheng et al., 2019).

In this section, we test whether interactive communication affects firms' investor relations and investors' information assimilation through a possible channel of private meetings and whether the impacts are different on buy-side and sell-side institutions.

We first use the Probit model based on Eq. (1), where $Dependent_{i,t}$ is represented by $Private\_Dummy_{i,t}$, to test the effect of interactive communication on firms' private meeting occurrence. Column (1) of Panel A in Table 4.5 reports the regression results. The coefficient of the interaction variable $Quest\_number_{i,t-1}$ is significantly positive at 1%, indicating that investors' participation in interactive communication via Easy IR increases their private meeting occurrence with managers. We further test the possible different effects of interactive communication on private meetings that are attended by buy-side institutions alone ($Buy\_Dummy_{i,t}$), by sell-side institutions alone ($Sell\_Dummy_{i,t}$), and by buy-side and sell-side institutions jointly ($B\&S\_Dummy_{i,t}$). The results are reported in columns (2)-(4) of Panel A in Table 4.5. The coefficients of $Buy\_Dummy_{i,t}$ and $B\&S\_Dummy_{i,t}$ are significantly positive, while the coefficient of $Sell\_Dummy_{i,t}$ is significantly negative, indicating that investors' participation in the interactive communication increases private meetings attended by buy-side

institutions alone and attended by buy-side and sell-side jointly, but decreases private meetings attended by sell-side institutions alone. The two inter-group tests (*Chi*-Statistic) are significant, showing the significant differences between $Buy\_Dummy_{i,t}$ and $B\&S\_Dummy_{i,t}$ (14.23), and $B\&S\_Dummy_{i,t}$ and $Sell\_Dummy_{i,t}$ (41.95). Panel B of Table 4.5 reported similar regression results using $Reply\_number_{i,t-1}$ as the independent interaction variable. The coefficients of $Private\_Dummy_{i,t}$, $Buy\_Dummy_{i,t}$ and $B\&S\_Dummy_{i,t}$ are significantly positive, but the coefficient of $Sell\_Dummy_{i,t}$ is insignificant. The two inter-group different tests (*Chi*-Statistic) are significant, showing the different impacts of firms' engagement in the interactive communication via Easy IR on firms' private meetings with investors and analysts.

[Please Place Table 4.5 Here]

We then regress Eq. (1), where $Dependent_{i,t}$ is replaced by $Private\_Number_{i,t}$, $Buy\_Number_{i,t}$, $Sell\_Number_{i,t}$, and $B\&S\_Number_{i,t}$ respectively, to test the effect of interactive communication on private meeting frequency. Table 4.6 reports the results. In Panel A Column (1) - (4), the coefficients of the interactive communication variable $Ques\_number_{i,t-1}$ are all significantly positive, while the coefficient in Column (3) $Sell\_Number_{i,t}$ representing private meetings attended by sell-side investors only is the smallest. We further conduct group difference tests on columns (2) and (3) as well as on (3) and (4) to check whether the difference of the coefficient in Column (3) and the other two coefficients in columns (2) and (4) is significant. The results (*Chi*-Statistic) in Panel A Table 4.6 show that the coefficient of the sell-side private meetings is significantly smaller than the other two coefficients. Panel B of Table 4.6 reports the regression results using $Reply\_number_{i,t-1}$ as the independent variable. The coefficients of $Reply\_number_{i,t-1}$ in Panel B Column (1) - (4) are all significantly positive with the coefficient in Column (3) $Sell\_Number_{i,t}$ is the smallest. The two inter-group different tests (*Chi*-Statistic) are also significant, indicating the different private meeting effects of firms' engagement in interactive communication on buy-side and sell-side institutions.

[Please Place Table 4.6 Here]

In summary, our findings show that interactive communication via Easy IR platform increases firms' private meeting occurrence and frequency with investors and analysts, especially for private meetings attended by buy-side investors only ($Buy\_Number_{i,t}$) and by buy-side and sell-side institutions jointly ($B\&S\_Number_{i,t}$). A possible explanation is that interactive communication attracts institutional investors and analysts through firm visibility (as shown in Table 4.3), and further increases their willingness to attend private meetings to build direct and close relationships with management, gain insights into firms and facilitate their information assimilation. Moreover, our results imply that interactive communication affects buy-side and sell-side market participants' information assimilation through private meetings differently. Bushee and Miller (2012) find that direct communication between management and buy-side investors is a crucial aspect of firms' investor relations and sell-side analysts play an important role in firm visibility. Cheng et al. (2016) indicate that the purpose of sell-side analysts attending private meetings with their buy-side clients is to provide services rather than to acquire information, and private meetings attended by sell-side analysts only are more effective in improving analyst forecast accuracy than those meetings attended jointly by sell-side analysts and buy-side investors. Our results document that interactive communication more significantly increases buy-side investors' incentives to directly communicate with management to hear and understand the company for their internal investing decisions and portfolio management, while interactive

communication more significantly increases sell-side analysts' willingness to attend private meetings with their external buy-side clients to facilitate buy-side clients' access to management.

4.5 Additional analyses

4.5.1 Group tests

Investor attention and firm visibility are associated with firm size (Aouadi et al. 2013; Bushee and Miller, 2012). Many firms, particularly small- and mid-cap firms, face significant challenges in improving visibility and attracting investors since firms generally rely on information intermediaries to disseminate firm-initiated information (Bushee et al., 2010; Bushee and Miller, 2012; Blankespoor et al., 2014a), and traditional dissemination channels such as press are more likely to cover large, highly visible firms to capture reader attention (Miller 2006).

Direct-access information technologies provide a channel that allows firms to bypass information intermediaries and help firms with less market visibility to disseminate news directly to a broader class of investors (Blankespoor et al., 2014a). In this section, we divide our sample into two groups (i.e., large firms and small firms) based on the industry median of company size in each quarter and examine the firm size effect. The regression results are reported in Table 4.7.

Panel A in Table 4.7 presents the effect of interactive communication on investor following, with columns (1) and (3) represent the large firm group and columns (2) and (4) represent the small firm group. Consistent with our results in Table 4.3, the coefficients of all independent variables are significantly positive. Further analysis shows that the coefficients of $Ques\_number_{i,t-1}$ in column (2) and $Reply\_number_{i,t-1}$ in column (4) are larger than those in columns (1) and (3). The *Chi*-square statistics reported on the bottom of Panel A are significant at the 1% level. The results suggest that interactive communication is more effective for small companies to attract institutional investors.

Panel B in Table 4.7 shows the effect of interactive communication on analyst following, with columns (1) and (3) represent the large firm group and columns (2) and (4) represent the small firm group. We find that the coefficients of the independent variables $Ques\_number_{i,t-1}$ and $Reply\_number_{i,t-1}$ are significantly positive for the large company group in columns (1) and (3), while the coefficients of independent variables in columns (2) and (4) are insignificant, indicating that interactive communication via Easy IR platform is more effective for large companies to increase analysts following.

Panel C in Table 4.7 reports the effect of interactive communication on investors' information assimilation, with columns (1) and (3) represent the large firm group and columns (2) and (4) represent the small firm group. Consistent with our results in Table 4.4, the coefficients of all independent variables are significantly positive. The *Chi*-square statistics are significant at the 5% level, indicating the significant difference between large companies and small companies. The results suggest that interactive communication via the Easy IR platform increases firms' stock return volatility, which is stronger for small companies. A possible explanation is that large companies usually have higher levels of information disclosure and transparency than smaller firms (Eng and Mak, 2003; Embong et al., 2012), so interactive communication via the platform brings less market noise to large companies.

[Please Place Table 4.7 Here]

4.5.2 Endogeneity and the 2SLS analysis

We use instrumental variables and the two-stage least squares (2SLS) analysis to address the potential endogeneity concerns due to the reverse causality and omitted variables.

Our instrumental variables are related to the level of internet service availability that could affect investors' interaction with listed companies but have no direct impact on firms' institutional investors' ownership, analysts' following and stock return volatility. We consider that internet service availability has the potential to affect investors' interaction with management through the platform from two aspects. On the one hand, increasing access to the internet has enabled investors to obtain firm information from various online sources faster and less expensive, reducing investors' demand for interaction with management through the platform. On the other hand, since investors have limited attention and processing power (Hirshleifer and Teoh, 2003), large volumes of information from the internet may contain more uncertainty and noise, which could increase investors' demand to communicate directly with managers for information assimilation.

We obtain data from the National Bureau of Statistics of China and select three instrumental variables to measure internet service availability. The first variable $IV1_{j,n-1}$ is related to the local investors' access to the internet through mobile phones, computed as the number of mobile phones used per capita of province *j* in year *n-1*. The second instrumental variable $IV2_{j,n-1}$ is regional broadband access, calculated as the number of internet broadband access ports divided by the population of province *j* in year *n-1*. A third instrumental variable $IV3_{j,n-1}$ is the number of internet domain names divided by the population of province *j* in year *n-1*.

We implement the instrumental variable estimator using 2SLS regressions. The specification of our first-stage regression is:

$$Interaction_{i,t-1} = \beta_0 + \delta_1 IV_{j,t-1} + \Upsilon Control_{i,t-1} + +\varepsilon_{i,t} \quad (2)$$

where $IV_{j,t-1}$ represents the instrumental variables. $Interaction_{i,t-1}$ is the interactive communication variables, measured by $Ques\_number_{i,t-1}$ and $Reply\_number_{i,t-1}$. The control variables $Control_{i,t-1}$ are defined in Appendix C.

The second-stage regression estimates the impact of predicted $Interaction_{i,t-1}$ on several dependent variables.

$$Dependent_{i,t} = \beta_0 + \delta_3 \widehat{Interaction}_{i,t-1} + \Upsilon Control_{i,t-1} + \varepsilon_i \quad (3)$$

where $\widehat{Interaction}_{i,t-1}$ is the predicted interaction from Eq. (2). $Dependent_{i,t}$ represents firms' investor relations and investors' information assimilation. δ_3 captures the causal effect of interactive communication on changes in institutional ownership, analyst following and stock return volatility if the instrumental variable we selected is valid.

Table 4.8 reports the results of the two-stage estimates. Panel A shows the test results of instrumental variables related to interactive communication and investor following. Columns (1) and (3) are the first-stage regression results based on Eq. (2), where interactive communication variables $Ques\_number_{i,t-1}$ and $Reply\_number_{i,t-1}$ are regressed on the two instrumental variables $IV1_{j,t-1}$ and $IV2_{j,t-1}$. The Cragg-Donald Wald F statistics are both significant, suggesting no weak instrumental variable problem exists. Columns (2) and (4) report the second-stage regression results based on Eq. (3). The coefficients of $Ques\_number_{i,t-1}$ and

$Reply\_number_{i,t-1}$ are both significantly positive, indicating that the results of the instrumental variable tests are consistent with our results in Table 4.3. The Hansen J statistics are not significant at the 10% level, showing that the instrumental variables are all exogenous and there is no evidence to support an over-identified problem.

Similarly, Panel B shows the test results of instrumental variables related to interactive communication and analyst following. Columns (1) and (3) are the first-stage regression results based on Eq. (2), and Columns (2) and (4) are the second-stage regression results based on Eq. (3). The results of the instrumental variable tests are consistent with our results in Table 4.3. Panel C reports the test results of instrumental variables related to interactive communication and stock return volatility, which are consistent with those in Table 4.4.

[Please Place Table 4.8 Here]

4.6 Conclusion and discussion

Information technology changes the ways firm-relevant information produced and disseminated to the capital market. It also facilitates interactive communication between firms and their financial stakeholders, providing an opportunity to foster firms' relationship building and investors' information interpretation. This study examines the effectiveness of interactive communication through a centralized and regulated online platform. We empirically test whether investor-generated interaction helps improve firms' investor relations and investors' information assimilation.

Our results show that interactive communication via the regulated platform affects firms' investor relations through firm visibility. It helps attract the attention of market participants and increases investor and analysts following. However, increased interactions between firms and market participants may add complexity to investors and reduce their ability to assimilate firm information, while detailed responses from listed companies may reduce investors' uncertainty. We also document a positive association between interactive communication and firms' private meetings with investors and analysts, implying that interactive communication increases attracted investors and analysts' willingness to directly contact managers to develop relations and better understand the company's narrative.

Our results may not be directly generalizable to other markets due to the difference in the information environment and legal system between China and other countries. However, the findings may have implications for both companies and regulators. First, although firms have lost certain control over their information environments in interactive communication, their active engagement in the multi-way dialogue could help companies gain broader attention of market participants, target desired investors, and develop investor relations. Second, while a centralized and regulated online communication platform could change the power imbalance between companies and market participants, regulators should consider the possible information overload in the capital market and further explore practical education services for investors, especially for less sophisticated investors, to increase their risk awareness and ability to adequately process publicly available information for more effective communication between firms and market participants.

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Appendix A. Key features of the Easy IR and examples of the Q&Rs on the platform

A1. Key features of the Easy IR platform

Features	Main Functions
Q&Rs	Registered investors can communicate with the company by asking questions and providing comments and feedback. All questions and responses are available to market participants through the Q&Rs.
Comprehensive Information (Sub-features: Announcements, Voices, IRs)	Investors can access company-specific information through the Comprehensive Information feature, including shareholder information, accounting data, financing status, credit history, industry information, etc. All investor relations activities or private communications, such as analyst meetings, media interviews, performance briefings, and road shows, must be disclosed through the IRs feature using standard report sheets. Company announcements and company voices are also available here.
Cloud Interview	This feature provides real-time online services for listed companies to conduct performance briefings. It also provides signal transfer services to other platforms to achieve synchronous video relays and real-time interactions. Investors can use Cloud Interview to participate in real-time performance briefings, browse past performance briefings, ask questions to the companies that will hold performance briefings soon, and wait for companies' responses.
Information Express	Investors can initiate a search, question, and inquiry from any page of the platform. Information Express provides investors with information customization services, updates investors on recent events of the companies they are interested in and helps investors track market dynamics.
Statistics	This feature provides weekly information statistics, including the number of questions raised by investors, the number of company responses, the investor relation activities disclosed by companies, and the top 10 companies that are asked questions by investors.

A2. Examples of the interactions (Q&Rs) between firms and investors via Easy IR

Example 1: Inquiry about disclosed financial information and related business operations

Nata Opto-electronic Material Co., Ltd., Stock Code: 300346

(http://irm.cninfo.com.cn/ircs/question/questionDetail?questionId=1056539493465772032)

Question: Hi! Nada announced in September 2021 that the company paid US$10 million to purchase a group of 19 patents for new precursors from DDP Specialty Electronic Materials, a wholly-owned subsidiary of the DuPont Group. Has Nada made the payment and complete the purchase? Has Nata obtained the technology patent? Has the staff conducted research and development of precursor products? And when are these products expected to be put into production? Thanks.

Reply: Thank you for your attention! The purchase transaction has been completed, and the patentee change registration has been basically completed. According to the market demand, the company has been carrying out industrialized research and development of related patented products in batches, which is progressing smoothly, and the construction of production lines is advancing simultaneously. At present, some products have already entered the client certification.

Example 2: Inquiry about undisclosed business information

Longhua Technology Group Co., Ltd., Stock Code: 300263

(http://irm.cninfo.com.cn/ircs/question/questionDetail?questionId=995345314291666944)

Question: Does the company have any plans to spin off its subsidiaries for listing on the Beijing Stock Exchange, especially the two national-level "Technologically Advanced" subsidiaries, Sifeng Electronics and Jinglian Optoelectronics?

Reply: Thank you for your attention. Longhua will fulfill the disclosure obligations in accordance with relevant laws and regulations.

Example 3: Verification about Rumors

Longhua Technology Group Co., Ltd., Stock Code: 300263

(http://irm.cninfo.com.cn/ircs/question/questionDetail?questionId=980694321852473344)

Question: Hello Board Secretary, I heard that the company has products related to CMP (Chemical Mechanical Polishing) hereby for verification. Is it true? Thanks.

Reply: Thank you for your attention. The company is not involved in the field of CMP (Chemical Mechanical Polishing) and the related products.

Example 4: Comments and criticism on the company's equity incentive plan and executive shareholding

LB Group Co., Ltd., Stock Code: 002601

(http://irm.cninfo.com.cn/ircs/question/questionDetail?questionId=989021886824472576)

Question: Dear Board Secretary, I have some thoughts on the company's equity incentive plan,

additional stock issuance, and H-share listing. The company only considers the incentives for employees (as some media say, equity incentives are actually a transfer of benefits). Although the company is doing very well, the executives keep reducing their holdings. This phenomenon makes us feel that there are some contradictions in your management team. It is commendable that the company pays high dividends to its shareholders every year, but considering the company's long-term development and capital needs, it is completely unnecessary. For us common shareholders, we would prefer that the company pay less dividends or that the company allot shares to shareholders. This current way to issue shares at a low price for capital expansion is extremely unfair to common shareholders. Please inform Mr. Xu, the chairman of the board.

Reply: The goal of the company's equity incentive plan is to further improve the company's long-term incentive mechanism, attract outstanding talents, and fully motivate the company's employees, so as to fully protect the interests of shareholders and make all parties pay attention to the company's long-term development. The implementation results show that the effect is obvious. The company's non-public issuance and overseas issuance of H shares can further enhance the company's capital strength and international influence and provide funds for achieving the "14th Five-Year Plan" revenue target of RMB 50 billion. The reduction of stock holdings by individual executives of the company is mainly due to their personal financial needs. The long-term value of a company is ultimately determined by the company's growth potential and core competency. Thank you for your attention!

Appendix B. Related regulations and cases of non-compliance/violations and disciplinary actions

B1. Related regulations on SZSE Easy IR platform

Regulations	Effective Date	
Shenzhen Stock Exchange Easy IR Business Operation Guideline	December 14, 2011	The Guideline provides investors with a detailed introduction to the main functions of the Easy IR platform, including how to register, how to ask questions to listed companies, and how to use the information query function. The Guideline also specifies the precautions and liabilities of the investors.
SZSE Notice on Issues Related to Easy IR platform	August 21, 2013	SZSE-listed companies shall not disclose material information via the Easy IR platform, while investors can use the platform to communicate their questions and concerns. Listed companies should appoint a board secretary or representative to be responsible for answering investors' questions posted on the platform. If there is no special reason, listed companies should reply to investors' questions within two trading days; for questions that cannot be answered timely, listed companies should explain the reasons. Listed companies cannot provide inaccurate and incomplete information. SZSE regularly assesses whether listed companies participate in the interactions and respond to investors' questions timely. The company's engagement in the interaction is one of the indicators used by SZSE to evaluate the company's information disclosure quality and failure to comply with the regulations may result in public criticism, regulatory and disciplinary actions.
Handbook on the Use of Information Disclosure for Board Secretary	September 2015	This handbook explains the rules and basic principles of information disclosure for listed companies, and how companies should use the Easy IR platform for investor relations management. It mainly covers how a listed company should use the interactive platform to disclose the company's investor relation activities, what to disclose, and how the company's responses to investors' questions will affect the company's information disclosure assessment, etc.

B2. Cases of non-compliance/violations and disciplinary actions

Company	Non-compliance / Violations	Disciplinary Actions
Northglass (Stock Code: 002613)	**January 9 to February 14, 2020** The company provided inaccurate and misleading information when responding to investors via the Easy IR platform.	The company, the chairman, the general manager, and the board secretary were given a **notice of criticism** for the violations. Source: SZSE, 2020.03.08 http://ww.szse.cn/disclosure/supervision/measure/pushish/index.html
ABA Chemicals (Stock Code: 300261)	**February 2 and 3, 2020** The company did not provide an objective, accurate, and complete explanation of the related businesses and their impacts on firm performance when replying to investors' questions on the Easy IR platform, which may mislead investors. The company also failed to disclose its Response Letter to SZSE's Letter of Concern within the prescribed period.	The company, the chairman, the general manager, and the board secretary were given **public censure** for the violations. Source: SZSE, 2020.03.26 http://www.szse.cn/disclosure/supervision/measure/pushish/index.html
Jolywood (Stock Code: 300393)	**June 29, 2021** The company released inaccurate and incomplete information when responding to investors through the Easy IR platform, resulting in abnormal stock price fluctuations.	The company, the chairman and the board secretary were given a **notice of criticism** for the violations. Source: SZSE, 2021.11.30 http://www.szse.cn/disclosure/supervision/measure/pushish/index.html
Jinke (Stock Code: 300459)	**September 2021** The company did not provide an objective and complete explanation of the related businesses and their impacts on firm performance when replying to investors' questions on the Easy IR platform.	Both the company and the board secretary were issued a **warning letter** Source: China Securities Regulatory Commission (CSRC), Zhejiang Supervision Bureau, 2021.09.30 http://www.csrc.gov.cn/zhejiang/c103940/c1576163/content.shtml

Appendix C. Definitions of variables

Dependent variables	**Definition**
$Analyst_{i,t}$	Logged value of one plus the number of analysts following a firm in a given quarter
$Chg\_Institution_{i,t}$	The proportion of institutional holdings in the next quarter minus the proportion of institutional holdings in the current quarter
$Volatility_{i,t}$	The standard deviation of daily stock return in a quarter multiple by 100
$Private\_Dummy_{i,t}$	An indicator variable that takes the value of one if a firm has private meeting and zero otherwise
$Buy\_Dummy_{i,t}$	An indicator variable that takes the value of one if a firm has buy-side private meeting and zero otherwise
$Sell\_Dummy_{i,t}$	An indicator variable that takes the value of one if a firm has sell-side private meeting and zero otherwise
$B\&S\_Dummy_{i,t}$	An indicator variable that takes the value of one if a firm has buy and sell side private meeting and zero otherwise
$Private\_Number_{i,t}$	The logarithm of one plus the number of private meeting in a given quarter
$Buy\_Number_{i,t}$	The logarithm of one plus the number of buy-side private meeting in a given quarter
$Sell\_Number_{i,t}$	The logarithm of one plus the number of sell-side private meeting in a given quarter
$B\&S\_Number_{i,t}$	The logarithm of one plus the number of buy and sell side private meeting in a given quarter
Independent variables	
$Ques\_number_{i,t-1}$	The logarithm of one plus the number of total questions asked by investors via the interactive platform
$Ques\_length_{i,t-1}$	The logarithm of one plus the average number of words per question asked by investors for company *i* in quarter *t-1*
$Reply\_number_{i,t-1}$	The logarithm of one plus the number of questions that have been replied
$Reply\_length_{i,t-1}$	The logarithm of one plus the average number of words per reply for company *i* in quarter *t-1*

Instrumental variables	
$IV1_{j,t-1}$	Average number of mobile phones per person in a province at the end of the year
$IV2_{j,t-1}$	The number of domain names divided by residents in a province at the end of the year
$IV3_{j,t-1}$	The number of internet ports divided by residents in a province at the end of the year
Control variables	
$Size_{i,t-1}$	The logarithm of total assets.
$Debt_{i,t-1}$	The ratio of total liabilities divided by total asset.
$Growth_{i,t-1}$	The difference between the revenue of the current period minus that of the previous period divided by the revenue of the previous quarter.
$SOE_{i,t-1}$	An indicator variable that takes the value of one if a firm is a state-owned enterprise and zero otherwise.
$ROA_{i,t-1}$	The ratio of net income divided by total asset
$BM_{i,t-1}$	The ratio of book value divided by market value
$Forecasts_{i,t-1}$	An indicator variable that takes the value of one if a firm is tracked by analysts and zero otherwise.
$Top5_{i,t-1}$	The sum of the shareholding ratio of the top five shareholders.
$Institution_{i,t-1}$	The sum of the shareholding ratios of the institutional shareholders.
$Analyst_{i,t-1}$	Logged value of one plus the number of analysts following a firm in a given quarter.
$Skewness_{i,t-1}$	The third moment of daily stock return in a quarter
$Kurtosis_{i,t}$	The fourth moment of daily stock return in a quarter

Table 4.1 Summary statistics

Panel A. Descriptive statistics

Variables	Number	Mean	Standard Deviation	Minimum	Median	Maximum
$Analyst_{i,t}$	43836	0.339	0.787	0.000	0.000	3.091
$Chg\_Institution_{i,t}$	43836	-0.153	4.502	-67.147	-0.127	80.588
$Volatility_{i,t}$	41799	2.887	1.196	1.001	2.643	6.919
$Ques\_number_{i,t-1}$	43836	3.487	1.142	0.000	3.584	7.441
$Ques\_length_{i,t-1}$	43836	3.963	0.591	0.000	4.038	5.881
$Reply\_number_{i,t-1}$	43152	3.459	1.118	0.000	3.555	7.441
$Reply\_length_{i,t-1}$	43152	4.073	0.679	0.000	4.119	6.759
$Size_{i,t-1}$	43836	21.926	1.133	19.843	21.793	26.060
$Debt_{i,t-1}$	43836	0.385	0.201	0.048	0.369	0.886
$Growth_{i,t-1}$	43836	0.149	0.629	-0.799	0.043	4.186
$SOE_{i,t-1}$	43836	0.224	0.417	0.000	0.000	1.000
$ROA_{i,t-1}$	43836	0.011	0.018	-0.068	0.010	0.066
$BM_{i,t-1}$	43836	0.573	0.236	0.116	0.561	1.128
$Forecasts_{i,t-1}$	43836	0.811	0.391	0.000	1.000	1.000
$Top5_{i,t-1}$	43836	0.529	0.143	0.199	0.535	0.880
$Institution_{i,t-1}$	43836	0.376	0.245	0.002	0.379	0.902
$Analyst_{i,t-1}$	43836	0.348	0.797	0.000	0.000	3.219
$Skewness_{i,t-1}$	43836	0.030	0.664	-1.796	0.026	1.830
$Kurtosis_{i,t-1}$	43836	4.520	1.975	1.687	4.035	12.613

Panel A reports the summary statistics for the main variables used in our study. The sample period is from the first quarter of 2013 to the fourth quarter of 2019. The total number of firm-quarter observations is 43,836. All the variables are defined in the Appendix.

Panel B. The overview of the quarterly interactions between firms and investors

Year/Quarter	Number of firms that received at least one question	Total number of listed firms in the sample	Company participating ratio
2013q1	1342	1383	0.970
2013q2	1329	1363	0.975
2013q3	1318	1343	0.981
2013q4	1310	1332	0.984
2014q1	1305	1323	0.986
2014q2	1313	1329	0.988
2014q3	1317	1331	0.990
2014q4	1277	1286	0.993
2015q1	1227	1239	0.990
2015q2	1206	1216	0.992
2015q3	1228	1236	0.994
2015q4	1394	1406	0.992
2016q1	1351	1391	0.971
2016q2	1405	1439	0.976
2016q3	1463	1499	0.976
2016q4	1486	1524	0.975
2017q1	1503	1517	0.991
2017q2	1643	1650	0.996
2017q3	1647	1667	0.988
2017q4	1708	1724	0.991
2018q1	1736	1762	0.985
2018q2	1880	1889	0.995
2018q3	1900	1952	0.973
2018q4	1961	2009	0.976
2019q1	1934	1980	0.977
2019q2	2000	2011	0.995
2019q3	1976	2008	0.984
2019q4	1993	2027	0.983
Total	43152	43836	0.984

Panel B reports the overview of the quarterly interactions between firms and investors. The second column reports the number of companies that receive at least one question via the interactive platform in each quarter. The third column reports the total number of listed companies in the sample of each quarter. The fourth column reflects the ratio of the companies participating in the interaction in each quarter.

Panel C. Details of the quarterly interactions between firms and investors

Year	Question Number	Reply Rate (Firm Average)	Reply Time (Calendar Days)	Average Question Length (Words)	Average Reply Length (Words)
2013q1	35.27	0.959	5.935	69.01	80.86
2013q2	47.33	0.960	5.525	70.04	82.10
2013q3	59.45	0.966	4.760	69.09	77.54
2013q4	62.85	0.964	4.209	68.03	74.57
2014q1	69.67	0.965	7.468	67.31	69.30
2014q2	68.07	0.959	5.898	67.35	71.58
2014q3	74.09	0.955	5.254	63.77	66.50
2014q4	81.24	0.956	5.168	60.95	62.99
2015q1	73.10	0.952	5.750	60.25	59.51
2015q2	89.47	0.948	4.961	59.85	57.89
2015q3	81.70	0.944	7.330	60.59	60.97
2015q4	56.55	0.942	7.741	55.99	59.93
2016q1	59.35	0.939	6.862	53.58	60.92
2016q2	87.67	0.966	4.238	47.60	66.03
2016q3	63.77	0.937	7.162	51.99	60.08
2016q4	58.10	0.947	6.627	51.09	61.00
2017q1	52.42	0.941	7.505	52.79	63.04
2017q2	79.75	0.941	4.608	50.03	68.00
2017q3	57.98	0.927	7.142	55.46	66.41
2017q4	53.77	0.882	8.095	54.09	65.86
2018q1	46.12	0.913	8.518	55.40	69.24
2018q2	72.21	0.931	5.320	48.10	75.21
2018q3	32.47	0.902	9.158	55.33	73.83
2018q4	27.87	0.901	9.790	54.99	71.52
2019q1	31.97	0.910	9.649	54.79	73.48
2019q2	55.16	0.924	5.101	49.13	78.60
2019q3	37.41	0.903	7.357	53.07	74.89
2019q4	34.97	0.912	6.546	55.64	73.97
Total	56.87	0.934	6.685	56.98	69.29

Panel C reports the details of quarterly interactions between firms and investors. The second column reports the average number of questions asked by investors in each quarter. The third column reports the average reply rate in each quarter. The fourth column reports the average number of calendar days companies take to reply to questions in each quarter. The fifth column reports the average number of words per question asked by investors in each quarter, and the sixth column reports the average number of words per reply by the company in each quarter.

Table 4.2 Pearson Correlation Matrix

This table reports the Pearson correlation coefficients between the explanatory variables. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

	$Analyst_{i,t}$	$Chg\_Institution_{i,t}$	$Volatility_{i,t}$	$Ques\_number_{i,t-1}$	$Ques\_length_{i,t-1}$	$Reply\_number_{i,t-1}$	$Reply\_length_{i,t-1}$	$Size_{i,t-1}$	$Debt_{i,t-1}$	$Growth_{i,t-1}$	$SOE_{i,t-1}$	$ROA_{i,t-1}$	$BM_{i,t-1}$	$Forecasts_{i,t-1}$	$Top5_{i,t-1}$	$Institution_{i,t-1}$	$Analyst_{i,t-1}$	$Skewness_{i,t-1}$	$Kurtosis_{i,t-1}$
$Analyst_{i,t}$	1																		
$Chg\_Institution_{i,t}$	0.059***	1																	
$Volatility_{i,t}$	-0.046***	-0.012**	1																
$Ques\_number_{i,t-1}$	0.194***	-0.016***	0.075***	1															
$Ques\_length_{i,t-1}$	0.089***	0.00300	0.068***	0.435***	1														
$Reply\_number_{i,t-1}$	0.188***	-0.015***	0.055***	0.974***	0.225***	1													
$Reply\_length_{i,t-1}$	0.029***	-0.012**	-0.047***	0.054***	0.147***	0.187***	1												
$Size_{i,t-1}$	0.227***	-0.00300	-0.215***	0.114***	0.060***	0.095***	0.010**	1											
$Debt_{i,t-1}$	-0.010**	0.017***	-0.058***	-0.061***	-0.025***	-0.068***	-0.020***	0.544***	1										
$Growth_{i,t-1}$	-0.005	-0.069***	0.012**	0.039***	-0.000	0.035***	0.00500	0.014***	0.042***	1									
$SOE_{i,t-1}$	-0.020***	0.014***	-0.086***	-0.061***	-0.021***	-0.048***	-0.032***	0.297***	0.242***	-0.00600	1								
$ROA_{i,t-1}$	0.268***	-0.016***	-0.054***	0.092***	0.029***	0.091***	0.018***	-0.033***	-0.282***	0.201***	-0.063***	1							
$BM_{i,t-1}$	-0.125***	0.00700	-0.278***	-0.146***	-0.012**	-0.134***	0.055***	0.543***	0.404***	0.008*	0.200***	-0.198***	1						
$Forecasts_{i,t-1}$	-0.407***	0.055***	0.015***	-0.201***	-0.094***	-0.190***	-0.037***	-0.216***	0.012***	-0.037***	0.022***	-0.221***	0.105***	1					
$Top5_{i,t-1}$	0.042***	-0.046***	0.021***	-0.154***	-0.058***	-0.133***	0.046***	0.00200	-0.079***	0.00100	-0.027***	0.162***	0.061***	-0.036***	1				
$Institution_{i,t-1}$	0.089***	-0.115***	-0.080***	-0.081***	-0.020***	-0.074***	-0.009*	0.353***	0.211***	0.010**	0.377***	0.042***	0.121***	-0.079***	0.411***	1			
$Analyst_{i,t-1}$	0.420***	-0.100***	-0.037***	0.187***	0.090***	0.175***	0.024***	0.254***	-0.00100	0.048***	-0.021***	0.248***	-0.119***	-0.854***	0.031***	0.098***	1		
$Skewness_{i,t-1}$	0.061***	0.026***	0.053***	-0.051***	0.00500	-0.053***	0.00500	0.034***	0.037***	-0.015***	-0.015***	0.010**	-0.061***	-0.038***	0.042***	0.051***	0.051***	1	
$Kurtosis_{i,t-1}$	-0.091***	-0.008*	-0.338***	-0.094***	-0.056***	-0.087***	0.016***	0.087***	0.048***	0.011**	0.043***	-0.055***	0.140***	0.060***	-0.024***	0.019***	-0.051***	0.055***	1

Table 4.3 Interactive communications and investor relations

Panel A. Interactive communications and institutional investor following

	(1) $Chg\_Institution_{i,t}$	(2) $Chg\_Institution_{i,t}$	(3) $Chg\_Institution_{i,t}$	(4) $Chg\_Institution_{i,t}$
$Ques\_number_{i,t-1}$	0.046**			
	(2.312)			
$Reply\_number_{i,t-1}$		0.052***		
		(2.595)		
$Question\_Length_{i,t-}$			0.006	
			(0.160)	
$Reply\_Length_{i,t-1}$				0.022
				(0.699)
$Size_{i,t-1}$	-0.108***	-0.114***	-0.094***	-0.100***
	(-4.704)	(-4.934)	(-4.201)	(-4.461)
$Debt_{i,t-1}$	0.389***	0.400***	0.360***	0.367***
	(2.808)	(2.878)	(2.608)	(2.666)
$Growth_{i,t-1}$	0.147***	0.152***	0.147***	0.152***
	(2.634)	(2.706)	(2.648)	(2.714)
$SOE_{i,t-1}$	0.081*	0.079*	0.071*	0.070
	(1.873)	(1.801)	(1.667)	(1.622)
$ROA_{i,t-1}$	3.116**	3.358**	3.129**	3.384**
	(2.098)	(2.268)	(2.105)	(2.286)
$BM_{i,t-1}$	0.514***	0.534***	0.491***	0.514***
	(4.079)	(4.174)	(3.892)	(4.007)
$Forecasts_{i,t-1}$	0.321***	0.323***	0.312***	0.314***
	(7.125)	(7.154)	(6.978)	(7.028)
$Top5_{i,t-1}$	-1.461***	-1.477***	-1.517***	-1.539***
	(-9.990)	(-10.182)	(-10.533)	(-10.868)
$Skewness_{i,t-1}$	0.057*	0.054*	0.054*	0.051
	(1.832)	(1.723)	(1.745)	(1.623)
$Kurtosis_{i,t-1}$	-0.005	-0.004	-0.006	-0.006
	(-0.438)	(-0.382)	(-0.572)	(-0.525)
$Constant$	3.205***	3.267***	3.082***	3.103***
	(6.540)	(6.581)	(6.215)	(6.048)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.0884	0.0894	0.0883	0.0893
Number	43826	43143	43826	43143

Panel A reports the regressions of interactive communications on institutional investor following. The sample in columns (1) and (3) consists of 43,826 firm-quarter observations and the sample in columns (2) and (4) consists of 43,143 firm-quarter observations from the first quarter of 2013 to the fourth quarter of 2019. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are *t* statistic adjusted for robust standard errors. ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Panel B. Interactive communications and analyst following

	(1) $Analyst_{i,t}$	(2) $Analyst_{i,t}$	(3) $Analyst_{i,t}$	(4) $Analyst_{i,t}$
$Que\_number_{i,t-1}$	0.019***			
	(5.046)			
$Reply\_number_{i,t-1}$		0.021***		
		(5.633)		
$Question\_Length_{i,t-}$			0.020***	
			(3.341)	
$Reply\_Length_{i,t-1}$				0.010*
				(1.825)
$Size_{i,t-1}$	0.244***	0.246***	0.248***	0.251***
	(34.983)	(35.220)	(36.101)	(36.610)
$Debt_{i,t-1}$	-0.143***	-0.143***	-0.150***	-0.156***
	(-5.008)	(-5.009)	(-5.281)	(-5.471)
$Growth_{i,t-1}$	-0.016***	-0.015***	-0.016***	-0.015***
	(-3.134)	(-2.928)	(-3.115)	(-2.892)
$SOE_{i,t-1}$	-0.083***	-0.083***	-0.086***	-0.087***
	(-6.131)	(-6.103)	(-6.311)	(-6.332)
$ROA_{i,t-1}$	5.233***	5.276***	5.243***	5.287***
	(24.605)	(24.680)	(24.565)	(24.599)
$BM_{i,t-1}$	-0.774***	-0.784***	-0.780***	-0.792***
	(-26.204)	(-26.279)	(-26.378)	(-26.437)
$Forecasts_{i,t-1}$	-0.344***	-0.343***	-0.347***	-0.346***
	(-37.958)	(-37.715)	(-38.188)	(-37.947)
$Top5_{i,t-1}$	0.072**	0.076**	0.055	0.050
	(1.981)	(2.059)	(1.512)	(1.363)
$Skewness_{i,t-1}$	0.008*	0.008*	0.007*	0.007
	(1.873)	(1.871)	(1.703)	(1.580)
$Kurtosis_{i,t-1}$	-0.020***	-0.021***	-0.021***	-0.021***
	(-12.816)	(-12.832)	(-13.104)	(-13.190)
$Constant$	-3.970***	-4.015***	-4.059***	-4.085***
	(-27.829)	(-27.917)	(-28.385)	(-28.214)
Industry FE	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes
Adjust R^2	0.377	0.377	0.377	0.376
Number	43826	43143	43826	43143

Panel B reports the regressions of interactive communication on analyst following. The samples in columns (1) and (3) consists of 43,826 firm-quarter observations and the samples in columns (2) and (4) consists of 43,143 firm-quarter observations from the first quarter of 2013 to the fourth quarter of 2019. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are *t* statistic adjusted for robust standard errors. ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Table 4.4 Interactive communication and stock return volatility

	(1) $Volatility_{i,t}$	(2) $Volatility_{i,t}$	(3) $Volatility_{i,t}$	(4) $Volatility_{i,t}$
$Ques\_number_{i,t-1}$	0.064***			
	(11.913)			
$Reply\_number_{i,t-1}$		0.046***		
		(9.275)		
$Question\_Length_{i,t-}$			0.074***	
			(6.408)	
$Reply\_Length_{i,t-1}$				-0.013*
				(-1.753)
$Size_{i,t-1}$	-0.188***	-0.191***	-0.175***	-0.178***
	(-22.081)	(-23.186)	(-20.782)	(-21.549)
$Debt_{i,t-1}$	0.441***	0.449***	0.416***	0.417***
	(12.310)	(12.525)	(11.469)	(11.505)
$Growth_{i,t-1}$	0.049***	0.048***	0.049***	0.048***
	(7.362)	(7.234)	(7.433)	(7.324)
$SOE_{i,t-1}$	-0.069***	-0.066***	-0.076***	-0.073***
	(-4.222)	(-4.080)	(-4.603)	(-4.437)
$ROA_{i,t-1}$	-3.753***	-3.694***	-3.711***	-3.666***
	(-11.499)	(-11.236)	(-11.290)	(-11.075)
$BM_{i,t-1}$	-0.346***	-0.321***	-0.367***	-0.335***
	(-8.985)	(-8.839)	(-9.597)	(-9.113)
$Forecasts_{i,t-1}$	-0.036**	-0.031**	-0.041***	-0.037***
	(-2.517)	(-2.155)	(-2.860)	(-2.583)
$Top5_{i,t-1}$	0.552***	0.539***	0.506***	0.501***
	(12.117)	(11.934)	(11.072)	(11.066)
$Institution_{i,t-1}$	-0.099***	-0.092***	-0.113***	-0.106***
	(-3.222)	(-3.002)	(-3.664)	(-3.433)
$Analyst_{i,t-1}$	-0.041***	-0.035***	-0.036***	-0.032***
	(-3.485)	(-3.024)	(-3.098)	(-2.720)
$Skewness_{i,t-1}$	0.099***	0.100***	0.097***	0.097***
	(16.930)	(16.898)	(16.407)	(16.315)
$Kurtosis_{i,t-1}$	-0.064***	-0.065***	-0.066***	-0.066***
	(-28.029)	(-28.082)	(-28.512)	(-28.436)
$Constant$	6.713***	6.836***	6.386***	6.798***
	(37.528)	(40.652)	(34.522)	(39.423)
Industry FE	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes
Adjust R^2	0.656	0.656	0.654	0.655
Number	41789	41140	41789	41140

Table 4.4 reports the regressions of interactive communication on stock return volatility. The samples in columns (1) and (3) consists of 41,789 firm-quarter observations and the samples in columns (2) and (4) consists of 41,140 observations from the first quarter of 2013 to the fourth quarter of 2019. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are *t* statistic adjusted for robust standard errors. ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Table 4.5 Interactive communication and private meeting occurrence

Panel A. Investors' participation in interactive communication and private meeting occurrence

	(1) $Private\_Dummy_{i,t}$	(2) $Buy\_Dummy_{i,t}$	(3) $Sell\_Dummy_{i,t}$	(4) $B\&S\_Dummy_{i,t}$
$Ques\_number_{i,t-1}$	0.108***	0.026*	-0.029**	0.083***
	(10.643)	(1.766)	(-2.186)	(6.448)
$Size_{i,t-1}$	0.267***	0.110***	-0.013	0.180***
	(12.952)	(3.582)	(-0.438)	(7.224)
$Debt_{i,t-1}$	-0.384***	-0.064	-0.307***	0.072
	(-4.343)	(-0.523)	(-2.694)	(0.680)
$Growth_{i,t-1}$	-0.049***	0.003	-0.040*	0.017
	(-3.994)	(0.151)	(-1.943)	(0.764)
$SOE_{i,t-1}$	-0.125***	0.104*	0.070	-0.154***
	(-2.853)	(1.894)	(1.364)	(-3.330)
$ROA_{i,t-1}$	7.102***	-1.066	-1.708*	5.612***
	(11.142)	(-1.059)	(-1.798)	(5.996)
$BM_{i,t-1}$	-0.453***	0.015	0.550***	-0.795***
	(-5.551)	(0.143)	(4.940)	(-7.595)
$Forecasts_{i,t-1}$	-0.259***	0.138***	-0.047	-0.106**
	(-9.196)	(3.480)	(-1.254)	(-2.554)
$Top5_{i,t-1}$	0.603***	0.184	-0.112	0.390***
	(5.087)	(1.222)	(-0.753)	(2.941)
$Institution_{i,t-1}$	-0.249***	-0.092	0.017	0.009
	(-3.405)	(-0.965)	(0.191)	(0.119)
$Analyst_{i,t-1}$	0.090***	0.028	-0.112***	0.160***
	(3.870)	(0.955)	(-3.726)	(4.845)
$Skewness_{i,t-1}$	0.009	-0.025	-0.014	0.046**
	(0.852)	(-1.361)	(-0.796)	(2.501)
$Kurtosis_{i,t-1}$	-0.023***	0.005	0.022***	-0.031***
	(-5.507)	(0.687)	(3.271)	(-4.545)
$Constant$	-5.894***	-2.958***	0.307	-3.404***
	(-13.864)	(-4.591)	(0.480)	(-6.700)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Chi Statistic		14.23***		41.95***
Adjust R^2	0.124	0.0320	0.0521	0.0765
Number	43819	18000	18002	18000

Panel A reports regressions of investors' participation in interactive communication and private meeting occurrence. The samples in columns (1) consists of 43,819 firm-quarter observations and the samples in columns (2) to (4) consists of 18,000 firm-quarter observations from the first quarter of 2013 to the fourth quarter of 2019. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are *t* statistic adjusted for robust standard errors. ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Panel B. Firms' engagement in interactive communication and private meetings occurrence

	(1) $Private\_Dummy_{i,t}$	(2) $Buy\_Dummy_{i,t}$	(3) $Sell\_Dummy_{i,t}$	(4) $B\&S\_Dummy_{i,t}$
$Reply\_number_{i,t-1}$	0.125***	0.036**	-0.019	0.080***
	(11.953)	(2.386)	(-1.337)	(6.045)
$Size_{i,t-1}$	0.263***	0.110***	-0.016	0.179***
	(12.752)	(3.591)	(-0.534)	(7.153)
$Debt_{i,t-1}$	-0.365***	-0.067	-0.303***	0.081
	(-4.123)	(-0.545)	(-2.633)	(0.765)
$Growth_{i,t-1}$	-0.049***	0.005	-0.042**	0.018
	(-3.984)	(0.211)	(-2.020)	(0.827)
$SOE_{i,t-1}$	-0.118***	0.100*	0.074	-0.153***
	(-2.693)	(1.815)	(1.426)	(-3.294)
$ROA_{i,t-1}$	7.117***	-1.074	-1.724*	5.736***
	(11.126)	(-1.062)	(-1.803)	(6.082)
$BM_{i,t-1}$	-0.456***	0.007	0.563***	-0.780***
	(-5.546)	(0.065)	(5.014)	(-7.375)
$Return_{i,t-1}$	-0.257***	0.136***	-0.051	-0.098**
	(-9.072)	(3.426)	(-1.355)	(-2.340)
$Forecasts_{i,t-1}$	0.622***	0.197	-0.091	0.389***
	(5.261)	(1.301)	(-0.614)	(2.915)
$Top5_{i,t-1}$	-0.244***	-0.092	0.010	0.017
	(-3.325)	(-0.960)	(0.107)	(0.210)
$Institution_{i,t-1}$	0.088***	0.026	-0.112***	0.163***
	(3.762)	(0.862)	(-3.728)	(4.884)
$Analyst_{i,t-1}$	0.011	-0.025	-0.011	0.046**
	(1.055)	(-1.395)	(-0.639)	(2.487)
$Skewness_{i,t-1}$	-0.023***	0.005	0.022***	-0.032***
	(-5.468)	(0.691)	(3.220)	(-4.588)
$Kurtosis_{i,t-1}$	-5.886***	-3.023***	0.338	-3.358***
	(-13.754)	(-4.692)	(0.527)	(-6.582)
$Constant$	0.125***	0.036**	-0.019	0.080***
	(11.953)	(2.386)	(-1.337)	(6.045)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Chi Statistic		13.61***		29.95***
Pseudo R^2	0.124	0.0322	0.0517	0.0744
Number	43136	17843	17845	17843

Panel B reports the regressions of firms' engagement in interactive communication and private meetings occurrence. The sample in columns (1) consists of 43,136 firm-quarter observations, the samples in columns (2) to (4) consists of 17,843 firm-quarter observations, and the sample in columns (3) consists of 17,845 firm-quarter observations from the first quarter of 2013 to the fourth quarter of 2019. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are *t* statistic adjusted for robust standard errors. ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Table 4.6 Interactive communication and private meeting number frequency

Panel A. Investors' participation in interactive communication and private meeting frequency

	(1) $Meeting\_Number_{i,t}$	(2) $Buy\_Number_{i,t}$	(3) $Sell\_Number_{i,t}$	(4) $B\&S\_Number_{i,t}$
$Ques\_number_{i,t-1}$	0.052***	0.029***	0.017*	0.044***
	(10.091)	(3.031)	(1.844)	(4.767)
$Size_{i,t-1}$	0.149***	0.133***	0.080***	0.176***
	(10.342)	(4.940)	(3.174)	(7.848)
$Debt_{i,t-1}$	-0.189***	-0.107	-0.133*	-0.131*
	(-4.343)	(-1.452)	(-1.877)	(-1.790)
$Growth_{i,t-1}$	-0.017***	-0.003	-0.014	-0.017
	(-3.599)	(-0.282)	(-1.441)	(-1.518)
$SOE_{i,t-1}$	-0.052**	0.010	0.002	-0.026
	(-2.268)	(0.259)	(0.049)	(-0.752)
$ROA_{i,t-1}$	2.686***	0.887	0.983*	3.445***
	(9.371)	(1.601)	(1.900)	(6.024)
$BM_{i,t-1}$	-0.305***	-0.127*	0.060	-0.422***
	(-6.808)	(-1.803)	(0.868)	(-6.414)
$Return_{i,t-1}$	-0.090***	0.018	-0.045**	-0.049**
	(-6.322)	(0.940)	(-2.479)	(-2.391)
$Forecasts_{i,t-1}$	0.290***	0.153	0.060	0.274***
	(4.617)	(1.536)	(0.615)	(2.902)
$Top5_{i,t-1}$	-0.106***	-0.037	0.000	-0.045
	(-2.595)	(-0.603)	(0.002)	(-0.737)
$Institution_{i,t-1}$	0.057***	0.012	-0.019	0.042***
	(4.622)	(0.820)	(-1.361)	(2.604)
$Analyst_{i,t-1}$	0.005	0.015*	0.010	0.023***
	(1.220)	(1.716)	(1.186)	(2.638)
$Skewness_{i,t-1}$	-0.011***	-0.005	-0.000	-0.017***
	(-6.169)	(-1.416)	(-0.086)	(-4.734)
$Kurtosis_{i,t-1}$	-2.627***	-2.442***	-1.204**	-2.958***
	(-8.943)	(-4.324)	(-2.245)	(-6.371)
$Constant$	0.149***	0.133***	0.080***	0.176***
	(10.342)	(4.940)	(3.174)	(7.848)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Chi Statistic		5.35***		26.48***
Adjust R^2	0.171	0.0676	0.0649	0.117
Number	43826	18544	18544	18544

Panel A reports regressions of investors' participation in interactive communication and private meeting frequency. The sample in columns (1) consists of 43,826 firm-quarter observations and the samples in columns (2) to (4) consists of 18,544 firm-quarter observations from the first quarter of 2013 to the fourth quarter of 2019. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are *t* statistic adjusted for robust standard errors. ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Panel B. Firms' engagement in interactive communication and private meeting frequency

	(1) $Meeting\_Number_{i,t}$	(2) $Buy\_Number_{i,t}$	(3) $Sell\_Number_{i,t}$	(4) $B\&S\_Number_{i,t}$
$Reply\_numer_{i,t-1}$	0.062***	0.036***	0.020**	0.053***
	(11.463)	(3.581)	(2.128)	(5.602)
$Size_{i,t-1}$	0.150***	0.133***	0.079***	0.174***
	(10.260)	(4.922)	(3.116)	(7.760)
$Debt_{i,t-1}$	-0.182***	-0.106	-0.131*	-0.124*
	(-4.162)	(-1.442)	(-1.842)	(-1.686)
$Growth_{i,t-1}$	-0.016***	-0.003	-0.014	-0.016
	(-3.476)	(-0.271)	(-1.488)	(-1.467)
$SOE_{i,t-1}$	-0.051**	0.012	0.004	-0.024
	(-2.204)	(0.305)	(0.107)	(-0.673)
$ROA_{i,t-1}$	2.689***	0.895	1.031**	3.481***
	(9.294)	(1.607)	(1.975)	(6.042)
$BM_{i,t-1}$	-0.313***	-0.127*	0.068	-0.418***
	(-6.843)	(-1.790)	(0.978)	(-6.298)
$Return_{i,t-1}$	-0.090***	0.017	-0.045**	-0.048**
	(-6.290)	(0.889)	(-2.483)	(-2.333)
$Forecasts_{i,t-1}$	0.298***	0.162	0.068	0.290***
	(4.744)	(1.619)	(0.699)	(3.060)
$Top5_{i,t-1}$	-0.105**	-0.038	-0.003	-0.042
	(-2.552)	(-0.618)	(-0.044)	(-0.681)
$Institution_{i,t-1}$	0.054***	0.011	-0.020	0.041**
	(4.441)	(0.756)	(-1.367)	(2.530)
$Analyst_{i,t-1}$	0.006	0.015*	0.012	0.025***
	(1.420)	(1.714)	(1.366)	(2.783)
$Skewness_{i,t-1}$	-0.011***	-0.005	-0.001	-0.017***
	(-6.229)	(-1.578)	(-0.155)	(-4.756)
$Kurtosis_{i,t-1}$	-2.667***	-2.464***	-1.199**	-2.957***
	(-8.953)	(-4.344)	(-2.217)	(-6.352)
$Constant$	0.062***	0.036***	0.020**	0.053***
	(11.463)	(3.581)	(2.128)	(5.602)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Chi Statistic		8.04***		36.84***
Adjust R^2	0.173	0.0689	0.0656	0.118
Number	43143	18390	18390	18390

Panel B reports the regressions of firms' engagement in interactive communication and private meetings occurrence. The sample in columns (1) consists of 43,143 firm-quarter observations and the samples in columns (2) to (4) consists of 18,390 firm-quarter observations from the first quarter of 2013 to the fourth quarter of 2019. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are *t* statistic adjusted for robust standard errors. ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Table 4.7 Group tests

Panel A. Interactive communication and institutional investor following

	(1) $Chg\_Institution_{i,t}$ Large companies	(2) $Chg\_Institution_{i,t}$ Small companies	(3) $Chg\_Institution_{i,t}$ Large companies	(4) $Chg\_Institution_{i,t}$ Small companies
$Ques\_number_{i,t-1}$	0.011**	0.027***		
	(2.016)	(6.341)		
$Reply\_number_{i,t-1}$			0.012**	0.031***
			(2.242)	(6.938)
$Size_{i,t-1}$	0.249***	0.211***	0.248***	0.216***
	(21.935)	(16.944)	(21.872)	(17.187)
$Debt_{i,t-1}$	-0.209***	-0.098***	-0.210***	-0.097***
	(-4.448)	(-3.115)	(-4.440)	(-3.047)
$Growth_{i,t-1}$	-0.005	-0.021***	-0.004	-0.020***
	(-0.674)	(-3.463)	(-0.507)	(-3.376)
$SOE_{i,t-1}$	-0.058***	-0.093***	-0.057***	-0.096***
	(-3.224)	(-5.128)	(-3.141)	(-5.257)
$ROA_{i,t-1}$	5.577***	4.558***	5.631***	4.612***
	(15.545)	(18.624)	(15.703)	(18.742)
$BM_{i,t-1}$	-0.955***	-0.562***	-0.955***	-0.584***
	(-21.761)	(-14.728)	(-21.623)	(-14.940)
$Forecasts_{i,t-1}$	-0.321***	-0.350***	-0.320***	-0.348***
	(-24.144)	(-29.878)	(-24.079)	(-29.645)
$Top5_{i,t-1}$	0.004	0.128***	0.005	0.136***
	(0.065)	(3.028)	(0.088)	(3.232)
$Skewness_{i,t-1}$	0.006	0.014***	0.006	0.014**
	(0.875)	(2.626)	(0.927)	(2.522)
$Kurtosis_{i,t-1}$	-0.022***	-0.016***	-0.023***	-0.016***
	(-9.581)	(-7.852)	(-9.612)	(-7.829)
$Constant$	-3.899***	-3.494***	-3.901***	-3.606***
	(-15.914)	(-14.020)	(-15.883)	(-14.256)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Chi2 Statistic	9.24***		12.25***	
Adjust R^2	0.391	0.318	0.389	0.320
Number	21599	22227	21326	21817

Panel A reports the regressions of interactive communication on institutional investor following. In the columns (1) and (3), the company size is above the industry median, and in the columns (2) and (4), the company size is below the industry median. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are *t* statistic adjusted for robust standard errors. ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Panel B. Interactive communication and analyst following

	(1) $Analyst_{i,t}$ Large companies	(2) $Analyst_{i,t}$ Small companies	(3) $Analyst_{i,t}$ Large companies	(4) $Analyst_{i,t}$ Small companies
$Que\_number_{i,t-1}$	0.061**	0.025		
	(2.401)	(0.833)		
$Reply\_number_{i,t-1}$			0.063**	0.037
			(2.397)	(1.202)
$Size_{i,t-1}$	-0.087**	-0.213***	-0.093**	-0.231***
	(-2.334)	(-3.495)	(-2.476)	(-3.743)
$Debt_{i,t-1}$	0.386*	0.388*	0.396*	0.400**
	(1.885)	(1.947)	(1.915)	(2.018)
$Growth_{i,t-1}$	0.230**	0.062	0.237**	0.067
	(2.490)	(0.960)	(2.558)	(1.036)
$SOE_{i,t-1}$	0.159***	-0.032	0.151***	-0.026
	(2.765)	(-0.435)	(2.602)	(-0.344)
$ROA_{i,t-1}$	2.852	3.202*	2.766	3.614**
	(1.216)	(1.747)	(1.170)	(2.004)
$BM_{i,t-1}$	0.636***	0.503***	0.622***	0.570***
	(3.568)	(2.579)	(3.448)	(2.865)
$Forecasts_{i,t-1}$	0.273***	0.333***	0.273***	0.337***
	(4.413)	(4.958)	(4.395)	(5.006)
$Top5_{i,t-1}$	-1.189***	-1.896***	-1.183***	-1.937***
	(-6.022)	(-8.020)	(-5.970)	(-8.326)
$Skewness_{i,t-1}$	-0.021	0.120***	-0.026	0.119***
	(-0.479)	(2.737)	(-0.574)	(2.669)
$Kurtosis_{i,t-1}$	0.020	-0.019	0.020	-0.019
	(1.365)	(-1.201)	(1.398)	(-1.166)
$Constant$	3.251***	4.982***	3.396***	5.226***
	(3.978)	(3.955)	(4.108)	(4.033)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Chi2 Statistic	0.68		0.35	
Adjust R^2	0.149	0.0546	0.150	0.0555
Number	21599	22227	21326	21817

Panel B reports the regressions of interactive communication on analyst following. In the columns (1) and (3), the company size is above the industry median, and in the columns (2) and (4), the company size is below the industry median. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are *t* statistic adjusted for robust standard errors. ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Panel C. Interactive communication and stock return volatility

	(1) $Volatility_{i,t}$	(2) $Volatility_{i,t}$	(3) $Volatility_{i,t}$	(4) $Volatility_{i,t}$
$Ques\_number_{i,t-1}$	0.053***	0.069***		
	(7.460)	(9.529)		
$Reply\_number_{i,t-1}$			0.037***	0.052***
			(5.514)	(7.529)
$Size_{i,t-1}$	-0.144***	-0.220***	-0.144***	-0.233***
	(-11.892)	(-11.449)	(-12.311)	(-12.600)
$Debt_{i,t-1}$	0.544***	0.344***	0.552***	0.348***
	(10.317)	(7.368)	(10.458)	(7.417)
$Growth_{i,t-1}$	0.072***	0.032***	0.071***	0.031***
	(8.171)	(3.290)	(8.090)	(3.192)
$SOE_{i,t-1}$	-0.059***	-0.085***	-0.056***	-0.083***
	(-2.991)	(-3.282)	(-2.865)	(-3.217)
$ROA_{i,t-1}$	-5.351***	-2.556***	-5.371***	-2.428***
	(-10.757)	(-6.076)	(-10.717)	(-5.728)
$BM_{i,t-1}$	-0.444***	-0.294***	-0.431***	-0.249***
	(-9.029)	(-4.982)	(-8.918)	(-4.612)
$Forecasts_{i,t-1}$	-0.038**	-0.032	-0.031*	-0.030
	(-2.080)	(-1.353)	(-1.713)	(-1.268)
$Top5_{i,t-1}$	0.380***	0.638***	0.383***	0.607***
	(5.899)	(9.881)	(6.054)	(9.489)
$Institution_{i,t-1}$	-0.081*	-0.083**	-0.077*	-0.072*
	(-1.822)	(-2.052)	(-1.738)	(-1.823)
$Analyst_{i,t-1}$	-0.046***	-0.036*	-0.042***	-0.031
	(-3.326)	(-1.706)	(-2.983)	(-1.468)
$Skewness_{i,t-1}$	0.099***	0.099***	0.100***	0.100***
	(13.136)	(11.087)	(13.052)	(11.207)
$Kurtosis_{i,t-1}$	-0.054***	-0.073***	-0.055***	-0.074***
	(-17.891)	(-20.902)	(-18.099)	(-20.871)
$Constant$	5.940***	7.262***	5.971***	7.641***
	(23.972)	(17.641)	(24.665)	(19.932)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Chi2 Statistic	5.44**		4.28**	
Adjust R^2	0.665	0.644	0.665	0.645
Number	20599	21190	20335	20805

Panel C reports the regressions of interactive communication on stock return volatility. In the columns (1) and (3), the company size above the industry median, and in the columns (2) and (4), the company size is below the industry median. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are t statistic adjusted for robust standard errors. ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Table 4.8 IV tests

Panel A. Interactive communication and institutional investor following

	(1) $Ques\_number_{i,t-1}$	(2) $Chg\_Institution_{i,t}$	(3) $Reply\_number_{i,t-1}$	(4) $Chg\_Institution_{i,t}$
$Que\_number_{i,t-1}$		1.951***		
		(3.012)		
$Reply\_number_{i,t-1}$				1.546**
				(2.503)
$IV1_{j,t-1}$	-0.128***		-0.175***	
	(-5.432)		(-7.444)	
$IV2_{j,t-1}$	0.744***		0.800***	
	(6.589)		(7.087)	
$Size_{i,t-1}$	0.310***	-0.630***	0.269***	-0.442**
	(47.663)	(-3.078)	(41.339)	(-2.570)
$Debt_{i,t-1}$	-0.710***	1.841***	-0.708***	1.557***
	(-22.031)	(3.785)	(-21.983)	(3.287)
$Growth_{i,t-1}$	0.062***	-0.641***	0.055***	-0.601***
	(7.431)	(-9.907)	(6.593)	(-8.684)
$SOE_{i,t-1}$	-0.220***	0.513***	-0.178***	0.354***
	(-16.875)	(3.410)	(-13.659)	(2.746)
$ROA_{i,t-1}$	0.704**	5.062***	0.787**	5.452***
	(2.226)	(3.060)	(2.487)	(3.241)
$BM_{i,t-1}$	-1.040***	2.189***	-0.909***	1.572***
	(-37.549)	(3.104)	(-32.653)	(2.606)
$Forecasts_{i,t-1}$	-0.246***	0.989***	-0.243***	0.887***
	(-22.179)	(5.814)	(-21.990)	(5.570)
$Top5_{i,t-1}$	-1.251***	0.938	-1.091***	0.170
	(-34.350)	(1.129)	(-29.942)	(0.240)
$Skewness_{i,t-1}$	-0.109***	0.419***	-0.108***	0.370***
	(-14.176)	(5.291)	(-14.012)	(4.880)
$Kurtosis_{i,t-1}$	-0.043***	0.052*	-0.039***	0.031
	(-16.680)	(1.749)	(-15.120)	(1.166)
$Constant$	-1.289***	3.547***	-0.566***	1.935**
	(-9.542)	(3.173)	(-4.187)	(2.223)
Cragg-Donald Wald F statistic		22.713***		31.793***
Hansen J statistic		0.028		0.308
Adjust R^2	0.1388		0.1162	
Number	43836	43836	43152	43152

Panel A reports the 2SLS regression results of the interactive communication on institutional investor following using an instrumental variable approach. The instrumental variable $IV1_{j,t-1}$ is measured as average number of mobile phones per person in a province at the end of the year. $IV2_{j,t-1}$ is measured as the number of domain names divided by residents in a province at the end of the year. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are t statistic adjusted for robust standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Panel B. Interactive communication and analyst following

	(1) $Que\_number_{i,t-1}$	(2) $Analyst_{i,t}$	(3) $Reply\_number_{i,t-1}$	(4) $Analyst_{i,t}$
$Question\_number_{i,t-}$		0.331***		
		(3.416)		
$Reply\_number_{i,t-1}$				0.260***
				(3.333)
$IV1_{j,t-1}$	-0.128***		-0.175***	
	(-5.432)		(-7.444)	
$IV2_{j,t-1}$	0.744***		0.800***	
	(6.589)		(7.087)	
$Size_{i,t-1}$	0.310***	0.097***	0.269***	0.130***
	(47.663)	(3.161)	(41.339)	(5.979)
$Debt_{i,t-1}$	-0.710***	0.110	-0.708***	0.057
	(-22.031)	(1.527)	(-21.983)	(0.965)
$Growth_{i,t-1}$	0.062***	-0.078***	0.055***	-0.072***
	(7.431)	(-9.835)	(6.593)	(-11.088)
$SOE_{i,t-1}$	-0.220***	-0.007	-0.178***	-0.033**
	(-16.875)	(-0.336)	(-13.659)	(-2.193)
$ROA_{i,t-1}$	0.704**	6.420***	0.787**	6.525***
	(2.226)	(30.740)	(2.487)	(32.971)
$BM_{i,t-1}$	-1.040***	-0.259**	-0.909***	-0.367***
	(-37.549)	(-2.481)	(-32.653)	(-4.925)
$Forecasts_{i,t-1}$	-0.246***	-0.305***	-0.243***	-0.322***
	(-22.179)	(-12.135)	(-21.990)	(-15.784)
$Top5_{i,t-1}$	-1.251***	0.465***	-1.091***	0.336***
	(-34.350)	(3.727)	(-29.942)	(3.770)
$Skewness_{i,t-1}$	-0.109***	0.066***	-0.108***	0.058***
	(-14.176)	(5.655)	(-14.012)	(6.005)
$Kurtosis_{i,t-1}$	-0.043***	-0.008*	-0.039***	-0.012***
	(-16.680)	(-1.682)	(-15.120)	(-3.505)
$Constant$	-1.289***	-2.750***	-0.566***	-3.027***
	(-9.542)	(-16.246)	(-4.187)	(-27.937)
Cragg-Donald Wald F statistic		22.713		31.793
Hansen J statistic		0.001		0.694
Adjust R^2	0.1388		0.1162	
Number	43836	43836	43152	43152

Panel B reports the 2SLS regression results of the interactive communication on analyst following. The instrumental variable $IV1_{j,t-1}$ is measured as average number of mobile phones per person in a province at the end of the year. $IV2_{j,t-1}$ is measured as the number of domain names divided by residents in a province at the end of the year. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are t statistic adjusted for robust standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Panel C. Interactive communication and stock return volatility

	(1) $Que\_number_{i,t-1}$	(2) $Volatility_{i,t}$	(3) $Reply\_number_{i,t-1}$	(4) $Volatility_{i,t}$
$Que\_number_{i,t-1}$		0.347***		
		(8.699)		
$Reply\_number_{i,t-1}$				0.315***
				(8.587)
$IV2_{j,t-1}$	1.273***		1.262***	
	(13.384)		(13.330)	
$IV3_{j,t-1}$	-0.652***		-0.715***	
	(-24.688)		(-27.166)	
$Size_{i,t-1}$	0.363***	-0.193***	0.324***	-0.173***
	(51.606)	(-13.132)	(46.095)	(-13.806)
$Debt_{i,t-1}$	-0.739***	0.744***	-0.734***	0.723***
	(-22.566)	(16.598)	(-22.454)	(16.632)
$Growth_{i,t-1}$	0.072***	0.050***	0.064***	0.056***
	(8.432)	(4.971)	(7.542)	(5.605)
$SOE_{i,t-1}$	-0.216***	0.047***	-0.182***	0.033**
	(-15.251)	(2.913)	(-12.929)	(2.117)
$ROA_{i,t-1}$	0.908***	-7.748***	1.028***	-7.910***
	(2.681)	(-20.971)	(3.040)	(-21.255)
$BM_{i,t-1}$	-1.121***	-0.897***	-0.999***	-0.969***
	(-38.893)	(-17.440)	(-34.552)	(-21.414)
$Forecasts_{i,t-1}$	-0.277***	-0.011	-0.258***	-0.019
	(-13.883)	(-0.462)	(-13.013)	(-0.806)
$Top5_{i,t-1}$	-0.979***	0.999***	-0.828***	0.932***
	(-23.322)	(16.642)	(-19.770)	(17.005)
$Institution_{i,t-1}$	-0.381***	-0.172***	-0.374***	-0.187***
	(-14.024)	(-5.374)	(-13.821)	(-5.953)
$Analyst_{i,t-1}$	-0.053***	-0.121***	-0.041***	-0.121***
	(-3.630)	(-8.320)	(-2.823)	(-8.372)
$Skewness_{i,t-1}$	-0.112***	0.122***	-0.112***	0.118***
	(-14.246)	(14.361)	(-14.188)	(14.176)
$Kurtosis_{i,t-1}$	-0.038***	-0.171***	-0.033***	-0.176***
	(-14.375)	(-54.566)	(-12.425)	(-58.521)
$Constant$	-2.158***	6.578***	-1.510***	6.365***
	(-15.262)	(41.440)	(-10.696)	(42.761)
Cragg-Donald Wald F statistic		309.732		370.816
Hansen J statistic		0.217		1.020
Adjust R^2	0.1545		0.1346	
Number	41799	41799	41149	41149

Panel C reports the 2SLS regression results of the interactive communication on stock return volatility. $IV2_{j,t-1}$ is measured as the number of domain names divided by residents in a province at the end of the year. $IV3_{j,t-1}$ is measured as the number of internet ports divided by residents in a province at the end of the year. All continuous variables are winsorized at the top and bottom 1%. Industry and time fixed effects are included in all regressions. Numbers in parentheses are *t* statistic adjusted for robust standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Chapter 5: Conclusion

This dissertation explores corporate financial communication with information intermediaries and investors. Financial communication is essential for market transparency and investor confidence and is subject to various regulatory constraints. Beyond the regulatory framework, listed companies also proactively communicate with their financial stakeholders to convey firm value, increase credibility, and attract investors.

In chapter 2 of this dissertation, we provide a regulatory background on public firms' private communications with selected investors and analysts. Then, we present an overview of the U.S.-based and SZSE-based studies on private meetings. Overall, findings of prior research suggest that private meetings provide participants with informational advantages over non-participants, implying an unlevel playing field in the post-Reg FD period. One limitation of previous studies is that the materiality is not well-defined, making it difficult to know what kind of information could be lawfully communicated, and therefore to determine whether selective disclosure of material information occurs during private meetings. The policy implication is that regulators may consider increased disclosure requirements to level the playing field and promote market integrity.

Chapter 3 of this dissertation investigates the impact of private meetings on stock liquidity in a mandatory disclosure setting. We find that private meetings between senior managers and investors significantly improve stock liquidity, and this positive impact is associated with meeting informativeness and meeting participants' heterogeneity. We then explore the potential disclosure channel through which private meeting information is transferred to the capital market and thus increasing stock liquidity. Our results indicate that mandatory disclosure of private meetings enhances information transparency and the fairness of information acquisition, and therefore benefits all market participants, especially those who have no selective access to managers. By investigating the liquidity effect of private meetings, this essay contributes to the continuing debate on the regulation of selective disclosure by providing empirical evidence on the market effect of timely disclosure of private meetings. Our study also extends financial analyst research by documenting their different motivations for private meetings, and their different influence on information transmission. We may also add new understandings of liquidity by showing that increased disclosure of private meetings could be a way to improve firms' stock liquidity and attract potential investors.

In chapter 4 of this dissertation, we examine whether interactive communication through a centralized and regulated online platform help improve firms' investor relations and investors' information assimilation. The results suggest that interactive communication via the regulated platform positively affects firms' investor relations by attracting the attention of market participants and increasing investor and analysts following. However, increased interactions are associated with higher stock return volatility, implying that large volumes of information from the interactions could bring market noise and overload investors, reducing their ability to assimilate firm information. This essay contributes to the growing disclosure literature that examines social media platforms and firms' financial communications. We provide empirical evidence on Brennan and Merkl-Davies's (2018) conceptual model of corporate communication by testing the effectiveness of multi-way, dynamic communication on companies' relationship-building. Findings of this essay also offer some insight into investors' information interpretation by showing that although interactive communication empowers investors to engage in the dialogue with firm

managers, it may not significantly enhance investors' assimilation of firm news due to the information overload and investors' limited information processing ability. Additionally, our study may extend the developing literature on investor relations. Different from existing research (e.g., Bushee and Miller, 2012; Chapman et al., 2019; Brochet et al., 2020) that explores the benefits of external IR consultants and in-house IR officers, our analyses show the positive effect of interactive communication on investor relations through an external online platform, which may provide some insights for firms' future IR programs.

In addition to the literature contribution, this dissertation offers some practical implications. First, our study would be useful to companies looking to improve stock liquidity and gain the attention of more market participants. Stock liquidity is important for businesses; enhanced stock liquidity lowers cost of capital and default risk (Diamond and Verrecchia, 1991; Butler et al., 2005; Brogaard et al., 2017). The findings of our second essay show that, while timely disclosure of private meetings is not required in most countries, listed companies may still consider voluntarily and actively disclosing their private communications to improve stock liquidity and thus reduce firms' cost of capital and default risk. As well, new direct-access information technologies are becoming an integral component of firm communication and investor relations (Blankespoor et al., 2014). The findings of our third essay suggest that while firms may lose some control over the interactive communications via external platforms, active participation in the multi-way dialogue still benefits listed firms' relationship-building.

Second, our study may have special implications for small investors. Small investors, on the one hand, are typically short-term in nature and have fewer motivations and opportunities to communicate with corporate managers. Stock liquidity impacts investors' return premiums and is highly correlated with investors' information acquisition and investment decisions. The findings of our second essay suggest that timely disclosure of private meetings transmits new information to the capital market and facilitates access for small investors to acquire information equitably. Investors, on the other hand, are increasingly relying on digital media platforms for corporate news and investment advice. The findings of our third essay suggest that while digital media platforms provide opportunities for investors to interact with listed companies and acquire information, large amounts of information from the web may overload investors, particularly smaller, less-sophisticated investors, and increase their demand for informational assistance.

Last, our empirical evidence would be of interest to regulators and policymakers. To promote corporate transparency and information equality, policymakers may consider additional disclosure requirements for private meetings, especially for firms with low disclosure quality and small firms. As information technology advances, a centralized and regulated digital communication platform may also be considered to change the power imbalance between companies and market participants and ensure accountability of firm information. While a regulated online platform may improve the efficiency of communication between listed firms and investors, regulators should be aware of the possible information overload in the capital market and look into practical education services for investors, particularly less sophisticated investors, to increase their risk awareness and ability to adequately process publicly available information.

This dissertation is subject to several limitations. First, our empirical studies use the sample of SZSE-listed firms, which could limit the generalizability of our findings. Future research could examine additional disclosure of private meetings in other markets and firms' multi-way interactions with financial stakeholders in various settings. Second, in our third essay, we use stock return volatility to proxy for investors' information assimilation, which may capture assimilation

with noise. As volatility can be used to measure other variables such as market uncertainty and information environment (e.g., Bloom, 2009; Fu et al., 2012; Billings et al., 2015), future research could explore other proxies to better capture investors' information assimilation. Third, while we document a positive relationship between interactive communications and firms' private meetings with investors and analysts in the third essay, further research is needed to investigate the causality. Finally, we do not include content analysis in our quantitative study. With the availability of textual data, future research can use advanced text mining methods to generate new insights into corporate communications with their financial stakeholders.

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