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Article

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Board secretary and market information efficiency: Evidence from corporate site visits

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ABSTRACT

Using the setting of corporate site visits, this study examines the information interpretation role of board secretaries on market information efficiency. We find that the presence of the board secretary during corporate site visits can significantly improve the information content of such visits. From the perspective of information interpretation ability, when the board secretary has a dual role, receives high relative compensation, and has a high level of education, his or her participation in site visits has a greater effect on improving the informativeness of such visits. From the perspective of information asymmetry, the information interpretation role of the board secretary is more pronounced when the level of information asymmetry between the firm and its investors is high. Further analysis shows that when the board secretary attends more site visits, the level of analyst forecast error is lower. In summary, we confirm the information interpretation role of board secretaries, which is useful for opening the “black box” of their participation in the information assimilation process and for better understanding of how to improve market information efficiency. © 2021 Sun Yat-sen University. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Board secretaries serve as links between firms and investors (Gao and Wang, 2015; Jiang et al., 2016a). Although board secretaries have various responsibilities, including information disclosure, corporate governance, investor relations management, market value management, and capital operations, their most impor-

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tant responsibility is information disclosure and investor relations management. As an information officer, the board secretary is responsible for the entire information disclosure process. Board secretaries communicate company information to the public, supervise company's compliance with disclosure regulations, help relevant parties to fulfill their obligations, and are responsible for keeping undisclosed material information confidential. As an investor relations officer, the board secretary is responsible for organizing investor relations activities (e.g., shareholder meetings, earnings conferences, road shows, and corporate visits), receiving corporate visits from investors, providing media consultations, and answering questions from investors on online interactive platforms, among others. According to institutional arrangements, board secretaries participate in the entire information disclosure process, including information production, release, dissemination, and assimilation (Shannon, 1948; Jiang et al., 2016a). However, in practice, the question of whether and how board secretaries play a role in every information disclosure process is a common concern for regulators, the market, and firms.

The board secretary is responsible for the company's information disclosure, and thereby participates in the entire information disclosure process, from information release to information assimilation, and seeks to improve investors' assimilation and understanding of company information throughout the process. Indeed, the literature shows that board secretaries can improve information disclosure quality in the information release process (Zhou et al., 2011; Xing et al., 2019; Lin et al., 2016; Gao and Wu, 2008; Bu and Sun, 2018; Gao and Wang, 2015; Peng et al., 2019; Wang and Wang, 2019) and information processing efficiency in the information dissemination process (Mao et al., 2013; Jiang et al., 2016a, 2016b). However, few studies focus on the specific impacts of board secretaries on investors' information assimilation efficiency. Regulators have used earnings conferences, corporate visits, interactive online Q&A platforms (e.g., "Hu Dong Yi" and SSE E-interactive), and road shows to guide firms to improve their interpretation support. In this context, corporate visit is becoming one of the most important methods of interaction between firms and investors. Previous studies confirm the positive effect of corporate site visits on investors' information processing efficiency (Kong et al., 2015b; Cheng et al., 2019; Tan and Cui, 2015; Cao et al., 2015; Li and Pan, 2018).

Therefore, corporate visits provide a good setting for us to observe the specific role and effect of board secretaries in the information assimilation process. First, corporate visit is a typical process of interactive communication. The purpose of corporate visits is to increase transparency and fairness in information disclosure and to help investors better understand firms. Firms can proactively interpret the information that investors are interested in and address their concerns. In the corporate visit process, the board secretary is in charge of the reception and responsible for not only arranging the visit, including the time, location, and participants, but also attending the conference, answering investor questions, and writing a report on the visit. Attending corporate visits is one of the main responsibilities of board secretaries, which can be used to observe their skills. Second, according to the SZSE Information Fair Disclosure Guidelines,¹ firms can only interpret public information, while releasing undisclosed material information is prohibited.² This rule separates the process of information interpretation from that of information release, making it possible to test whether the information interpretation role of the board secretary can effectively improve investors' information processing efficiency.

Therefore, we study the influence of board secretaries on investors' information processing efficiency in the information assimilation process, using a sample of firms listed on Shenzhen Stock Exchange (SZSE) with records of corporate visits between 2012 and 2019. We obtain the following results. First, the presence of the board secretary during corporate site visits can significantly improve the informativeness of site visits. Second, from the perspective of the ability of board secretaries to interpret information, when board secretaries

¹ According to the SZSE Information Fair Disclosure Guidelines, "the listed firm and the relevant information disclosure obligatory shall not disclose or divulge to the specific target separately in private and in advance." The Guidelines for the Standardized Operation of Listed Firms published by the SZSE in 2010 also stipulate that "Listed firms and related information disclosure agents shall not disclose or divulge undisclosed material information in any form when they accept the visits, communication and interview activities of specific objects. They can only use publicly disclosed information and undisclosed non-material information as communication content. Otherwise, the company shall immediately publicly disclose the undisclosed material information."

² Material information refers to information that has or may have a significant effect on stock prices or affects the decision of investors (SZSE, Information Fair Disclosure Guidelines, 2006). The guidelines prohibits the disclosure of information that is likely to affect stock prices. Therefore, a firm can only discuss information that does not affect its stock price. If there is no new information that could affect the stock price, this can be considered as interpretation rather than disclosure.

have a high level of education, have a dual role, and receive high relative compensation, their participation in site visits has a greater effect on improving the informativeness of corporate site visits. Third, from the perspective of information asymmetry, the information interpretation role of board secretaries is more pronounced for diversified firms, firms not audited by Big 4 auditors, and firms with high operational uncertainty. Fourth, when board secretaries attend more site visits and higher proportion of site visits, the levels of analyst forecast error and analyst forecast dispersion are lower.

Our study contributes to the literature in three ways. First, this study demonstrates the positive influence of board secretaries on market information efficiency from the perspective of information assimilation. The literature has mainly focused on board secretaries' influence on the market through the processes of information release and information dissemination. By focusing on corporate site visits, this study examines the influence of board secretaries on investors' information assimilation efficiency without considering the influence of information quality and the information dissemination process. Our study thus complements the literature by analyzing the role of board secretaries in influencing information assimilation. Second, studying the visualized scene of corporate site visits helps to open the "black box" of the information assimilation process by board secretaries. Most of the board secretary's work related to information disclosure is carried out within the firm and therefore cannot be observed. In contrast, corporate site visit is a public activity in which the board secretary's specific activities in designing the visit, communicating with investors, and writing a report can be observed, providing evidence of the influence of the board secretary on the information assimilation process. Third, the literature shows the impact of analyst characteristics on the outcome of corporate site visits, including analyst distribution, analyst pressure, joint visits from analysts and funds, and relational visits (Cheng et al., 2016a; Han et al., 2018; Tang et al., 2017; Xiao and Ma, 2019), and the effect of institutional investors (Tan et al., 2019b; Li et al., 2018; Tan and Lin, 2016; Xiao and Ma, 2019). However, there is little empirical evidence of the effect of host on corporate site visits. Our study enriches and extends the literature by examining the role of the host in corporate site visits.

The remainder of this paper is organized as follows. Section 2 reviews the related literature and develops the hypothesis. Section 3 describes the research design, including the data source and sample selection, model and variables, and descriptive statistics for the main variables. Section 4 presents the empirical results and relevant robustness tests. Finally, Section 5 concludes the study.

2. Literature review and hypothesis development

Information asymmetry is an important factor affecting information efficiency, and information disclosure is an important way to reduce the information asymmetry between firms and investors. The behavior and quality of firms' information release, dissemination, and assimilation affect investors' information processing costs and thus affect the information efficiency of the capital market. During a corporate site visit, the information interpretation process can be better observed. The board secretary is responsible for organizing the site visit, so his or her professional judgment and skills have a significant influence on the outcome of the site visit.

2.1. Corporate disclosure and market information efficiency

Information efficiency is the foundation of the stock market. The main way to improve information efficiency is to process information in a timely and accurate manner (Tan et al., 2016). According to efficient market theory, in a semi-strong efficient market, prices can fully reflect all public information (Fama, 1970). However, the price drift after earnings announcements (Ball and Brown, 1968) contradicts this assumption, and investors bear the cost of processing public information (Bhushan et al., 1994). Scholars argue that investors' attention is limited, so they cannot pay attention to all information (Simon, 1955) and cannot fully and effectively assimilate information. This limited information processing capacity often forces investors to ignore certain information or to respond insufficiently to information disclosed by a firm (Sims, 2003). Even if investors pay attention to all information, they cannot fully understand it. When investors cannot fully understand firms' information disclosure, and market efficiency decreases (Loughran and McDonald, 2014; Blankespoor et al., 2019). For example, Hirshleifer et al. (2009) find that when more than one firm release earnings

announcement on the same day, the price and trading volume on that day fall, and the price drift phenomenon is more severe.

As mentioned earlier, information asymmetry is an important factor affecting market information efficiency. A large number of studies examine ways to improve market information efficiency. Studies show that information transparency (Wang et al., 2009), institutional ownership (Wang and Wang, 2011; Kong et al., 2015a), and incremental information provided by analysts can improve information efficiency (Zhu et al., 2008; Li and Pan, 2018). Media coverage also improves information efficiency by reducing price synchronization, with various media types having different effects on information efficiency (Huang and Guo, 2014; Yang et al., 2016). Adding information sources can improve investors' assimilation of existing business information. For instance, increased disclosure by peer firms helps investors assimilate information about their stocks (Yu and Wang, 2010). Investors who communicate with firms through “Hu Dong Yi” or SSE E-interactive can obtain more accurate information, also improving information efficiency (Tan et al., 2016; Meng et al., 2019; Ding et al., 2018).

Research on capital market information efficiency focuses mainly on the quantity and quality of information disclosure and the role of institutional investors, analysts, media, and investors in interpreting information, but ignores the role played by information publishers themselves (Mao et al., 2013). Valuable information must go through the process of information release, dissemination, investor response, and management response, from the firm to its investors (Blankespoor, 2018).

First, in the information release process, firms must determine what information to disclose and how, and must ensure that their disclosure complies with the requirements (e.g., truthful expression and relevance) and the information representation mode, as readability and professional terms affect investors' information assimilation efficiency (You and Zhang, 2009; Tan et al. 2019a; Michels, 2017). The board secretary plays a major role in information quality in the information release process. Zhou et al. (2011) find that the overall information disclosure quality of listed firms has improved significantly since the senior executive status of the board secretary was confirmed in the new *Company Law*. Factors such as the gender, dual role (e.g., director and other senior executive titles), working experience, and social capital of the board secretary influence his or her information channels and professional skills, which affect the accuracy of management's earnings forecasts (Xing et al., 2019) and disclosure quality, as evaluated by SZSE (Lin et al., 2016; Gao and Wu, 2008; Bu and Sun, 2018; Gao and Wang, 2015). Excessive compensation of board secretaries also reduces the likelihood of information disclosure violations and improves disclosure quality (Peng et al., 2019).

In the information dissemination process, firms choose an appropriate time and channel for information dissemination based on the content of the information disclosed. The information environment of the firm and the information processing costs of its investors may be affected by these choices, such as whether information is released on Friday and whether multiple issues are disclosed at the same time, or whether information is disseminated via the media or social media (Dellavigna and Pollet, 2009; Blankespoor, 2018; Jung et al., 2018). As the person responsible for publishing information, the board secretary plays a key role in the information transmission process (Mao et al., 2013), and the release time and channel choices should not only meet compliance and timeliness requirements but also coordinate the company's multiple issues to help investors receive and assimilate information. As a result, the board secretary's professional judgment and skills influence investors' information processing in the information dissemination process (Jiang et al., 2016b).

In the information assimilation process, firms interpret existing information to help their investors better understand and absorb that information. Regulators have also actively implemented a series of measures to protect the rights and legitimate interests of investors, especially for medium and small investors with poor ability to interpret information. The Guidelines on Investor Relations in Listed Firms published by the China Securities Regulatory Commission (CSRC) in 2005 aim to guide listed firms continuously improve their information interpretation service through multiple means, such as earnings conferences, corporate visits, interactive online Q&A platforms, and road shows. In this context, listed companies' information disclosure has shifted from declaration to interaction (Zhao and Zhao, 2018). Information demanders and providers jointly participate in the generation of information content through interaction and communication (Miller and Skinner, 2015). With the launch of “Hu Dong Yi” by the SZSE, the level of analyst forecast dispersion is

reduced (Tan et al., 2016), and companies' interactive online Q&A activities on the platform reduce investors' divergence (Ding et al., 2018). However, no study has examined whether the board secretary, as the investor relations officer in China, fully plays his or her role in the interaction and communication between firms and investors, or how this role is fulfilled.

2.2. Interactive communication and corporate visits

The mode of communication between listed firms and investors has changed from declaration to interaction: investors can obtain information about a company by communicating with that company (Miller and Skinner, 2015).

Organizing corporate visits is one of the important modes of interactive communication for listed companies. During a corporate visit, the company arranges for its investors and analysts to visit the company, organizes discussions, and communicates with them, so that visitors can understand the company's business, operations, financial situation, and other matters. For example, BESTORE (SH603719) organized a corporate site visit on August 24, 2020. The company first presented its financial data and operations. Then, during the interactive Q&A session, investors asked about the company's supply chain development model, online and offline business, and the development of subdivided product markets.

Compared with other interactive communication modes (e.g., “Hu Dong Yi”, earnings conferences, Weibo), corporate site visits, as a form of face-to-face communication, provide more information than verbal communication. First, investors can obtain information from non-verbal expressions such as tone and body language (Cheng et al., 2016a). Second, by interacting with information spokespersons, investors can better judge the credibility of the disclosed information (Blankespoor, 2018). Indeed, information spokespersons can respond to investors' questions and misconceptions in a timely manner. They also have a significant influence on investors' assimilation of information and their evaluation of information reliability. As a result, during corporate site visits, investors can better observe the characteristics of spokespersons and their communication performance (Brochet et al., 2018). For analysts, compared with online communication, offline site visits can visualize the company's information. Specifically, analysts can obtain information by observing the company's operations. They can investigate manufacturing companies with more intangible assets and more business, which increases the effectiveness of site visits (Cheng et al., 2016a).

Site visits are increasingly becoming the main channel for interactive communication between companies and investors. Although corporate site visits do not provide new information, studies confirm their positive effect on investors' information processing efficiency. Institutional investors can obtain information advantages by visiting listed companies (Kong et al., 2015b), allowing them to make more informed transactions (Solomon and Soltes, 2015) and to increase their shareholdings (Cheng et al., 2019). Analysts can improve their forecast accuracy after corporate site visits (Cheng et al., 2016a; Han et al., 2018; Tan and Cui, 2015), reduce stock price synchronicity (Cao et al., 2015), and improve the market response to their annual reports (Li and Pan, 2018). Corporate visits also help the market better understand listed firms. For instance, stock market reactions are generally positive around corporate visits (Kirk and Markov, 2016; Cheng et al., 2019; Bowen et al., 2018).

However, research on corporate site visits primarily focuses on information intermediaries in the visit process, such as the characteristics of analysts in different places, analyst pressure, joint visits from analysts and funds, and relational visits (Cheng et al., 2016a; Han et al., 2018; Tang et al., 2017), and on the characteristics of institutional investors, such as location and type (Tan et al., 2019b; Li et al., 2018; Tan and Lin, 2016; Xiao and Ma, 2019), little attention is paid to the efforts of the information providers themselves during the site visit process. In fact, organizing corporate site visits is an important investor relations activity. The sample used in this study shows that companies receive on average more than 10 site visits each year. In recent years, corporate site visits have become more frequent, and some listed companies have received hundreds of visits.³ How should the visit process be properly organized? What information should be explained during the site visit? How can the company communicate information correctly and effectively to investors? All of these questions

³ For example, Hikvision (SZ002415) revealed in its 2019 annual report that it received 231 investor visits during the year.

affect the effectiveness of corporate information interpretation. During a site visit, whether and how the board secretary, as the person in charge of the visit,⁴ performs his or her duties and how the efficiency of information assimilation can be improved remain unclear and require further analysis.

2.3. Corporate visits and information assimilation by the board secretary

As mentioned above, to enhance investors' access to information, regulators have regulated corporate disclosure compliance, enhanced the quality of disclosure, and increased information channels. More importantly, special positions have been created, of which the board secretary is a key example (Gao and Wu, 2008; Zhou et al., 2011). The scope of the board secretary's responsibilities is detailed in the Companies Act amended in 2005: "A listed company shall have a secretary of the board of directors whose responsibilities include the preparation of the general meeting of shareholders and meetings of the board of directors, the preservation of documents, the management of relevant matters concerning information disclosure," thus legally establishing the position of the board secretary as an executive. Subsequently, the CSRC and the stock exchanges issued a number of regulations to specify the role of the board secretary in various aspects, including information disclosure practices, corporate governance and regulatory operations, and investor relations management. The board secretary is involved in the entire process of planning, communicating, and verifying the organization of corporate visits for investors, which are among the most important activities related to investor relations management and information interpretation in a company.

During the planning phase, the board secretary, as the organizer, influences the overall design of the site visit. First, the board secretary must confirm the list of visitors. Research shows that visitors influence the effectiveness of site visits: visits in which only analysts participate provide more incremental information than those attended by both analysts and other participants (Cheng et al., 2016a), and joint site visits with funds and analysts provide more information than visits with funds alone (Tang et al., 2017). The board secretary can arrange the list of visitors by visitor type for a better site visit and good investor relationships. Second, the board secretary must confirm the duration of the visit. The length of communication between investors and companies can affect the effectiveness of their interaction (Kirk and Markov, 2016). The board secretary can choose the required duration of a site visit. For example, a site visit with mutual funds with large shareholdings will involve a longer meeting (Bowen et al., 2017). Third, the board secretary must confirm the location of the site visit. Either the company's meeting room can be used, or a detailed observation of the production site can be arranged for communication with investors. The different scopes of a site visit will affect investors' understanding and may confirm their concerns, for example, about products that are not sufficiently universal. Accordingly, if investors can visit the production site to observe the production process, product characteristics, and quality control process, it will improve their understanding of the company. For example, Shaanxi Coal (SH601225) invited its investors to descend into a well and to visit a coal mining site during a site visit. As a result, investors were able to understand the performance of coal mining equipment and facilities and the coal mining process. Fourth, the board secretary must arrange the participation of company's reception. As a rule, company participants should inform the board secretary⁵ of their attendance prior to a site visit. It should be noted that speaking on behalf of the company during a site visit should be avoided unless specifically authorized to do so.⁶ Indeed, research shows that participants involved in interactive communica-

⁴ As stipulated in the Guidelines on Relations between Listed Companies and Investors (CSRC, 2005), "The Company shall determine that the board secretary is responsible for investor relations." The main responsibilities of investor relations management are as follows. (1) Analysis and research: the board secretary is responsible for analyzing the composition of investors, paying continued attention to investor opinions and media reports, and providing timely feedback to the board and management. (2) Communication and liaison: the board secretary is responsible for integrating and publishing the information required by investors, organizing site visits, and maintaining regular contacts with institutional investors and small and medium investors. (3) Establish and maintain public relations.

⁵ Guidelines of the SZSE for the Standardized Operation of Firms Listed on the Main Board 5.2.16: "Any directors, supervisors and senior management of a listed company should inform the board secretary before accepting interviews and site visits with specific targets, and the board secretary is deemed to make proper arrangements for the interview or site visit."

⁶ Guidelines of the SZSE for the Standardized Operation of Firms Listed on the Main Board 7.3: "A listed firm should establish an investor relations management mechanism and designate the board secretary as the person responsible for investor relations management, and any other directors, supervisors, senior management and employees of the company should refrain from speaking on behalf of the company in investor relations activities unless they have been specifically authorized and trained."

tion on behalf of their company affect the content of information obtained by investors (Kirk and Markov, 2016). Communication involving marketing officers can help external investors obtain information about the current state of the company's operating income and future growth (Koo and Lee, 2018). In companies with high valuation uncertainty, middle managers may have more information that can help investors make decisions (Kirk and Markov, 2016). Therefore, the board secretary can enhance investors' understanding of the company by inviting the right executives.

In the communication stage, whether the board secretary presents during the site visit also affects its actual effectiveness. During site visits, firms usually take the initiative to inform investors about their strategy, culture, and operations to enhance investors' understanding and identification with the firms (Kirk and Markov, 2016). As the investor relations officer, the board secretary is more aware of the concerns of investors than other executives (Brown et al., 2019), so he or she is better capable to convey information in a targeted manner. Compared with other professional executives, the board secretary can interpret the public information in detail in a simple and easy manner to reduce investor misunderstandings, such as explaining jargon, reading between the lines of an announcement, reminding investors of the company's overall strategy, and refining the information disclosed (Chapman et al., 2019).

Another important feature of a site visit is that the company needs to answer investor questions in detail. When investors visit a company, they are interested in the company's products, future industry developments, investments, and sales, but most of the questions generally revolve around the company's financial and technical prospects (Bowen et al., 2018). As these questions often relate to several areas at the same time, the board secretary's understanding and answers are more comprehensive, as he or she has better access to the firm's overall information than other executives. Moreover, the board secretary participates in preparing board meetings and shareholder meetings, so he or she is more aware of the exact internal operations and all types of information about the firm. Studies show that if board secretaries also have other senior executive titles, they have more information channels within the company (Gao and Wang, 2015; Bu and Sun, 2018) and know more about firm-specific information (Chapman et al., 2019). Xingxi Yu (China Railway Construction, SH601186), who is currently the Secretary-General of the Beijing Listed Companies Association and has won the title of "Gold Board Secretary" for five consecutive terms, said in an interview that "Communicating with investors invariably requires the board secretary to have an in-depth understanding of the industry in which the company operates and of the company itself." The board secretary not only helps investors by providing them with comprehensive information about the firm but can also improve the information interpretation process when he or she has certain expertise. For example, studies show that board secretaries with financial experience ensure professionalism and understandability in interpreting information, as they have a better understanding of the ins and outs of financial data and their implied economic significance, which can better dispel investors' doubts about financial data (Mao et al., 2013; Jiang et al., 2016b). Board secretaries with accounting expertise can better answer questions about the financial prospects of firms (Xing et al., 2019).

At the verification and disclosure stage, the board secretary must prepare and publish a report of the site visit in a timely manner. The sooner the secretary publishes a disclosure report, the sooner investors who did not participate in the site visit can be informed. The time lag between the date of the site visit and the date of the disclosure report significantly affects investors' reaction (Bowen et al., 2018). Moreover, the content of the report affects investors' information assimilation, with the textual tone of the report being positively correlated with market reaction (Bowen et al., 2018). As a result, the ability of the board secretary to present the content of a site visit to the market in a timely and accurate manner affects the information content of the site visit.

In summary, the judgment and professionalism of the board secretary, as the company's investor relations manager and the person responsible for corporate site visit matters, will influence the information assimilation by investors during a corporate site visit. Accordingly, we propose the following hypothesis:

Hypothesis: The board secretary can improve investors' information processing efficiency and increase the information content of corporate site visits.

3. Research design

3.1. Data source and sample selection

We obtain data on corporate site visits conducted by firms listed on SZSE between 2012 and 2019 from the China Stock Market and Accounting Research (CSMAR) database. We exclude (1) firms in the financial sector; (2) firms that have changed their board secretary in a given year; (3) firms with multiple site visits on the same day; (4) special treatment (ST) firms; and (5) observations with missing data. We also winsorize all of the continuous variables at the 1st and 99th percentiles. Our final sample includes 33,885 site visit events to 1,455 unique firms during the 2012–2019 period.

The data on corporate site visits come from investor relations activities in the CSMAR database thematic research series, which are derived from the Investor Relations Activity Record of Listed Companies disclosed after a company completes a site visit.

3.2. Research model and variable definitions

To test the effect of the presence of the board secretary on the informativeness of site visits, we follow previous studies (Bushee et al., 2018; Bowen et al., 2018; Cheng et al., 2019) and construct Model (1):

$$CAR_{i,d} = \alpha + \beta Attend_{i,d} + \gamma' CV_{i,d} + \varepsilon_{i,d} \quad (1)$$

where i represents the company, and d represents the site visit date.

The dependent variable CAR represents the market reaction around a site visit, using the standardized absolute value of the market-adjusted abnormal returns in the $[0,1]$ window (Cheng et al., 2019), as model (2) shows. The higher the value of CAR , the greater the market reaction, indicating the higher information content of a site visit.

$$CAR_{i,d} = \frac{ABSAR_{i,[d,d+1]} - MEAN_ABSAR_{i,[d-146,d-7]}}{STD_ABSAR_{i,[d-146,d-7]}} \quad (2)$$

Following previous studies (Cheng et al., 2019), $ABSAR_{i,[d,d+1]}$ is the absolute value of the cumulative market-adjusted abnormal returns over the 2-day window $[0,1]$ around a site visit date for firm i , where the site visit date is day 0. $ABSAR_{i,[d,d+1]} = |AR_{i,d}| + |AR_{i,d+1}|$. $AR_{i,d} = R_{i,d} - R_{m,d}$, where $R_{i,d}$ is the daily return of stock i in period d ; $R_{m,d}$ is the daily market return in period d (Basu, 1997; Yi et al., 2016). $MEAN_ABSAR_{i,[d-146,d-7]}$ is the mean of the absolute value of the 2-day cumulative market-adjusted abnormal returns in the normal period, $[-146, -7]$; and $STD_ABSAR_{i,[d-146,d-7]}$ is the standard deviation of the absolute value of the 2-day cumulative market-adjusted abnormal returns in the normal period, $[-146, -7]$.

The independent variable $Attend$ is an indicator equal to 1 if the board secretary attends and communicates with the participants during a site visit, and 0 otherwise. CV is a vector of control variables, and includes company size ($Size$), leverage (Lev), revenue growth rate ($Revenue$), return on assets (ROA), firm growth ($Tobinq$), institutional shareholdings ($Institution$), analysts following ($Analystfollow$), the interval between the site visit date and the report date ($Lndrdate$), and the SZSE information disclosure rating ($Rank$). In addition, we control for firm and year fixed effects. Table 1 reports the variable definitions.

If our hypothesis is true, β should be significantly positive. Site visits attended by the board secretary have higher information content than those without the board secretary, indicating that the market reaction to site visits is stronger. Therefore, the board secretary helps investors assimilate information.

3.3. Descriptive statistics

Table 2 reports the descriptive statistics of the participation of the board secretary in site visits by industry. As Table 2 shows, the top five industries in which the board secretary attends corporate site visits (in percentage) are Comprehensive, Health and social work, Construction, Hotel and catering, and Information transmission, software, and IT services. Thus, investors can obtain more visual information from corporate site visits in the first four categories of industries. The fifth category, Information transmission, software, and

Table 1
Variable definitions.

Variable	Definition
<i>CAR</i>	The difference between the absolute value of 2-day cumulative market-adjusted abnormal returns in the event period and the mean of the absolute value of 2-day cumulative market-adjusted abnormal returns in the normal period, $[-146, -7]$ before the site visits, divided by the standard deviation of the absolute value of the 2-day cumulative market-adjusted abnormal returns in the normal period.
<i>Attend</i>	An indicator variable that equals 1 if board secretary attend and communicate in the site visits, and 0 otherwise.
<i>Size</i>	The natural logarithm of the total asset.
<i>Lev</i>	Total debt divided by total assets.
<i>Revenue</i>	The percentage change in revenue over the previous year.
<i>ROA</i>	Net income divided by total assets.
<i>Tobinq</i>	Market value divided by book value.
<i>Institution</i>	The ownership of institutional investor.
<i>Analystfollow</i>	The natural logarithm of 1 plus the number of analysts following.
<i>Lndrdate</i>	The natural logarithm of 1 plus days between site visit date and report date.
<i>Rank</i>	SZSE information disclosure rating, 1 is fail, 2 is pass, 3 is good, and 4 is excellent.

Table 2
Industry distribution.

Industry	% of board secretary attending visits	Number of board secretary attending visits	Number of visits
Agriculture, forestry, livestock farming, fishery	56.250%	198	352
Mining	67.647%	138	204
Manufacturing	72.452%	5018	6926
Electricity, heat, gas and water	53.055%	165	311
Construction	83.520%	745	892
Wholesale and retail	66.047%	782	1184
Transportation	53.347%	263	493
Hotel and catering	81.416%	92	113
Information transmission, software and IT services	79.784%	1922	2409
Real estate	49.943%	437	875
Leasing and commerce services	61.475%	150	244
Scientific research and technical services	75.731%	259	342
Water conservancy, environment and public facilities	76.310%	364	477
Health and social work	94.667%	71	75
Culture, sports and entertainment	70.000%	203	290
Comprehensive	100.000%	10	10

IT services, is a high-tech industry that is generally characterized by very technical and more professional information about the company. Therefore, it is more difficult for investors to understand that information, requiring the board secretary to communicate more with investors.

Table 3 presents the descriptive statistics of the main variables. In our sample, about 72.6% of the site visits are attended by board secretaries. The mean (median) of *CAR* on the $[0,1]$ window is 0.118 (-0.190), with a standard deviation of 1.177, indicating that there is a variation in *CAR* around the days of site visits.

4. Empirical results

The empirical method of this study is divided into three parts. First, the main analysis examines the relationship between the presence of the board secretary and the information content of site visits. Second, to account for potential endogeneity problems, we use various methods to conduct robustness tests, including

Table 3
Descriptive statistics of main variables.

Variables	N	Mean	Median	Std.	Min	Max
<i>CAR</i>	3,3885	0.118	−0.190	1.177	−1.421	4.995
<i>Attend</i>	3,3885	0.726	1	0.446	0	1
<i>Size</i>	3,3885	22.26	22.07	1.235	20.15	25.99
<i>Lev</i>	3,3885	0.386	0.377	0.188	0.050	0.799
<i>Revenue</i>	3,3885	0.230	0.168	0.332	−0.358	1.935
<i>ROA</i>	3,3885	0.058	0.051	0.046	−0.076	0.204
<i>Tobinq</i>	3,3885	2.248	1.893	1.235	0.923	7.687
<i>Institution</i>	3,3885	0.399	0.411	0.230	0.007	0.843
<i>Analystfollow</i>	3,3885	2.403	2.485	0.827	0.693	3.892
<i>Lndrdate</i>	3,3885	0.985	0.693	0.706	0	4.007
<i>Rank</i>	3,3885	3.327	3	0.567	1	4

controlling for investor characteristics in the model, deleting site visits around company announcements, deleting site visits on adjacent dates, using the propensity score matching (PSM) method, changing the calculation method of the dependent variable, and testing the influence of omitted variables. To test the influence mechanism, we further examine the moderating effect of information supply and investors' information demand. Finally, in additional analyses, at the firm-year level, we examine the impact of the total number and proportion of site visits attended by the board secretary on the analyst forecast error and analyst forecast dispersion.

4.1. Presence of the board secretary and informativeness of site visits

Table 4 reports the regression results of Model (1). Column (1) reports the results without the control variables. The coefficient on *Attend* is positive and significant (coefficient = 0.040, $t = 2.773$). When we control for firm and year fixed effects in Column (2), the coefficient on *Attend* is still positive and significant (coefficient = 0.051, $t = 2.723$). After adding the firm-level control variables and controlling for firm and year fixed effects in column (3), the coefficient on *Attend* is positive (coefficient = 0.050, $t = 2.696$) and significant at the 1% level. These results show that the presence of the board secretary during site visits helps to improve the information content of site visits, supporting our hypothesis.

4.2. Robustness tests

First, considering that the composition of visitors may affect the outcome of site visits, following previous studies (Cheng et al., 2016a; Tang et al., 2017; Xiao et al., 2017), we add the following control variables related to visitor characteristics in Model (1): whether funds participate in site visits (*Dummy_fund*), whether brokerages (*analyst*) participate in site visits (*Dummy_security*), and whether star brokerages participate in site visits (*Dummy_star*). Star brokerages refer to brokerage research institutions selected as the top local research institutions by *New Fortune* during the 2012–2019 period. Column (1) of Table 5 reports the results with the visitor characteristic variables. The coefficients on *Dummy_fund* and *Dummy_star* are positive and significant at the 1% level. These results show that the participation of funds and star brokerages can improve the information content of site visits. The coefficient on *Attend* is still positive (0.037) and significant at the 5% level, so our main conclusion remains unchanged.

Second, to control for the impact of company event announcements on the market reaction to site visits, we delete all observations with announcements seven days before and after the day of a site visit. Column (2) of Table 5 reports the results of this analysis. The coefficient on *Attend* is 0.054, which is significant at the 1% level, demonstrating the robustness of our main results.

Third, to control for the influence of adjacent site visits on the market reaction, we delete all of the observations of the same firm in which the interval between adjacent site visits is less than two days. Column (3) of

Table 4
Board secretary attendance and informativeness of site visits.

Dependent Variable=	CAR		
	(1)	(2)	(3)
<i>Attend</i>	0.040*** (2.773)	0.051*** (2.723)	0.050*** (2.696)
<i>Size</i>			−0.013 (−0.421)
<i>Lev</i>			−0.107 (−0.998)
<i>Revenue</i>			−0.027 (−1.037)
<i>ROA</i>			−0.592* (−1.953)
<i>Tobinq</i>			0.048*** (4.017)
<i>Institution</i>			0.088 (1.293)
<i>Analystfollow</i>			−0.062*** (−4.130)
<i>Lndrdate</i>			0.001 (0.120)
<i>Rank</i>			0.004 (0.243)
<i>Constant</i>	0.089*** (7.291)	0.081*** (5.452)	0.454 (0.647)
Firm Fixed Effects	NO	YES	YES
Year Fixed Effects	NO	YES	YES
Observations	33,885	33,885	33,885
Adj. R-squared	0.0002	0.031	0.032

This table reports results from the OLS regression. All of the regressions include the firm and year fixed effects. Robust t-statistics are in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 5 reports the results of this analysis. The coefficient on *Attend* is still positive and significant (coefficient = 0.048, $t = 2.290$), so our main conclusion remains valid.

Fourth, column (4) of Table 5 reports the results with our PSM sample. Considering that whether or not the board secretary attends a site visit is not an exogenous event, omitted variable bias may be a problem. To address this concern, we adopt the PSM method. Based on the control variables of Model (1), we use 1:1 nearest neighbor matching without replacement between the sample of board secretaries attending site visits and that of board secretaries not attending site visits. After matching, Model (1) is re-estimated using paired samples. The coefficient on *Attend* is still significant and positive (coefficient = 0.106, $t = 4.282$), so our main conclusion remains robust.

Fifth, in column (5) of Table 5, we change the calculation method of the dependent variable. We use the market model method to calculate expected returns. $R_{i,d} = \alpha + \beta R_{m,d} + \varepsilon_{i,d}$, where $R_{i,d}$ is the daily return of stock in period d ; $R_{m,d}$ is the daily market return in period d ; and α and β are calculated using a 140-day window $[-146, -7]$ as the estimation period, and the expected returns are calculated over $[0, 1]$. The abnormal return is measured as the actual return minus the expected return. Then, we obtain the dependent variable CAR_M , the absolute value of the cumulative abnormal returns. The coefficient on *Attend* with CAR_M is positive and significant.

Sixth, in column (6) of Table 5, we change the window of site visit events. We calculate the dependent variable $CAR_{[0,2]}$ as the standardized absolute value of the cumulative market-adjusted abnormal returns over the 3-day window $[0, 2]$ around the date of a site visit event. The coefficient on *Attend* is significant and positive

Table 5
Robustness tests.

Dependent Variable=	CAR	CAR	CAR	CAR	CAR_M	CAR _[0,2]
	Add visitor characteristics variables	Delete site visits around announcements sample	Delete site visits on adjacent dates sample	PSM sample	Market model method	Change event window
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Attend</i>	0.037** (1.962)	0.054*** (2.825)	0.048** (2.290)	0.106*** (4.282)	0.001** (2.266)	0.064*** (2.667)
<i>Size</i>	−0.007 (−0.226)	−0.002 (−0.066)	0.010 (0.282)	−0.058 (−1.171)	−0.003*** (−4.188)	0.027 (0.645)
<i>Lev</i>	−0.126 (−1.172)	−0.061 (−0.550)	−0.094 (−0.779)	−0.225 (−1.378)	−0.005* (−1.839)	−0.126 (−0.902)
<i>Revenue</i>	−0.030 (−1.138)	−0.025 (−0.901)	−0.037 (−1.233)	−0.009 (−0.242)	0.002*** (3.657)	−0.006 (−0.180)
<i>ROA</i>	−0.568* (−1.875)	−0.545* (−1.735)	−0.662* (−1.953)	−0.295 (−0.672)	0.005 (0.724)	−0.642 (−1.637)
<i>Tobinq</i>	0.046*** (3.858)	0.041*** (3.314)	0.055*** (4.055)	0.038** (2.008)	0.003*** (10.468)	0.094*** (6.106)
<i>Institution</i>	0.067 (0.987)	0.099 (1.411)	0.080 (1.048)	0.083 (0.776)	−0.002 (−1.089)	0.202** (2.291)
<i>Analystfollow</i>	−0.075*** (−4.936)	−0.067*** (−4.345)	−0.050*** (−2.974)	−0.086*** (−3.935)	0.002*** (5.217)	0.002*** (−3.942)
<i>Lndrdate</i>	−0.003 (−0.241)	−0.004 (−0.338)	0.008 (0.590)	−0.010 (−0.691)	−0.000 (−0.562)	0.017 (1.120)
<i>Rank</i>	0.007 (0.374)	0.007 (0.361)	0.014 (0.680)	0.004 (0.155)	−0.001*** (−3.043)	−0.000 (−0.010)
<i>Dummy_fund</i>	0.092*** (6.616)					
<i>Dummy_security</i>	−0.018 (−0.965)					
<i>Dummy_star</i>	0.106*** (6.739)					
<i>Constant</i>	0.280 (0.398)	0.191 (0.264)	−0.162 (−0.207)	1.618 (1.452)	0.099*** (6.128)	0.200 (0.221)
Firm Fixed Effects	YES	YES	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Observations	33,748	31,554	26,554	18,486	33,885	33,885
Adj. R-squared	0.035	0.032	0.028	0.042	0.136	0.042

This table reports the results from the OLS regression. All of the regressions include the firm and year fixed effects. Robust t-statistics are in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

(coefficient = 0.064, $t = 2.667$). Overall, the presence of the board secretary during site visits helps to improve their information content.

Finally, to test the sensitivity of our results to possible omitted variables, we follow previous studies (Frank, 2000; Larcker and Rusticus, 2010) and use the impact threshold for a confounding variable (ITCV) procedure. As shown in Table 6, *Size* has the greatest impact (0.001), and the ITCV value is 0.004, suggesting that a confounding (omitted) variable would have to be four times larger than the most important variable included (*Size*) to reverse the observed relationship between *Attend* and *CAR*. We can conclude that there is no serious omitted variable bias and that our regression results are robust.

Table 6
Impact threshold of confounding variables.

	Impact on coefficient for <i>Attend</i> <i>CAR</i>
<i>Size</i>	0.0010
<i>Lev</i>	0.0000
<i>Revenue</i>	−0.0060
<i>ROA</i>	−0.0001
<i>Tobinq</i>	−0.0006
<i>Institution</i>	−0.0004
<i>Analystfollow</i>	0.0003
<i>Lndrdate</i>	0.0000
<i>Rank</i>	0.0000
Largest impact	0.0010
Impact threshold of confounding variable	0.0040
Minimum magnitude of confounding variable relative to largest impact included variable required to overturn <i>Attend</i>	4

This table reports the results of the impact threshold of a confounding variable (ITCV) analysis.

4.3. Moderating effect analysis

4.3.1. Information supply perspective: Board secretary's information interpretation ability

According to upper echelons theory, the personal characteristics of executives affect their professional performance (Hambrick and Mason, 1984). When the information interpretation ability of the board secretary is higher, his or her influence on the information content of site visits is greater. In this section, we measure the information interpretation ability of the board secretary from three dimensions: dual role, relative compensation, and education level.

First, board secretaries who have a dual role are better able to access more comprehensive information. Prior studies show that the information interpretation ability of board secretaries can be improved when they have other executive titles, as they can participate in more daily operations and important decisions of their company, have more information channels and higher information power, communicate more effectively (Gao and Wu, 2008; Gao and Wang, 2015; Jia and Wen, 2016), and have a better understanding of information disclosure (Bu and Sun, 2018). Therefore, we divide our sample of board secretaries into two groups based on whether they have other executive titles. We expect board secretaries with a dual role to be better able to interpret company information during site visits. Columns (1) and (2) of Table 7 report the results. The coefficient on *Attend* in the dual role group is positive (0.040) and significant at the 10% level. In contrast, the coefficient on *Attend* in the single-role group is not significant. These results show that board secretaries who have other executive titles can help to improve the information content of site visits, resulting in a stronger market reaction.

Second, the higher the compensation of board secretaries, the greater their ability to interpret company information. Compensation is a comprehensive index for measuring individual skills. The relative compensation of executives can reflect their contribution to their company and their influence in the company (Cheng et al., 2016b). If board secretaries receive higher compensation, it indicates that they have more skills (Jia and Wen, 2016). We measure the relative compensation of the board secretary based on the compensation of the three highest paid executives in the company. We expect board secretaries with high relative compensation to have a greater ability to interpret information, thereby increasing the information content of site visits. The sample is divided into two groups according to the median of the annual relative compensation. Columns (3) and (4) of Table 7 report the results. The coefficient on *Attend* for the high compensation group is significant and positive (0.054). However, the coefficient on *Attend* in the low compensation group is not significant. These results show that board secretaries with high relative compensation have a greater ability to interpret company information, and they can better play a role in the information interpretation process and improve the informativeness of site visits by helping investors to assimilate that information.

Table 7

Board secretary attendance and the informativeness of site visits: The degree of board secretaries' information interpretation ability.

Dependent Variable=	CAR					
	Dual role (1)	Single role (2)	High compensation (3)	Low compensation (4)	High educated (5)	Low educated (6)
<i>Attend</i>	0.040* (1.923)	0.040 (0.885)	0.054** (1.966)	0.028 (1.056)	0.071*** (2.612)	0.043 (1.476)
<i>Size</i>	−0.034 (−0.928)	0.120 (1.079)	−0.052 (−0.991)	−0.105** (−2.024)	0.033 (0.669)	−0.083 (−1.581)
<i>Lev</i>	−0.052 (−0.424)	−0.576* (−1.681)	0.038 (0.224)	−0.260 (−1.474)	−0.289* (−1.787)	0.082 (0.457)
<i>Revenue</i>	−0.028 (−0.927)	−0.095 (−1.242)	−0.012 (−0.295)	−0.055 (−1.238)	−0.029 (−0.698)	−0.024 (−0.605)
<i>ROA</i>	−0.569* (−1.664)	−0.162 (−0.183)	−0.982** (−1.967)	0.210 (0.458)	−0.086 (−0.177)	−1.235*** (−2.612)
<i>Tobinq</i>	0.049*** (3.685)	0.057 (1.513)	0.042** (2.338)	0.039** (2.082)	0.046*** (2.603)	0.032 (1.639)
<i>Institution</i>	0.108 (1.434)	0.062 (0.283)	0.136 (1.229)	0.109 (1.041)	0.170* (1.654)	0.114 (1.004)
<i>Analystfollow</i>	−0.062*** (−3.632)	−0.048 (−1.121)	−0.052** (−2.206)	−0.047** (−1.992)	−0.058** (−2.549)	−0.036 (−1.551)
<i>Lndrdate</i>	0.006 (0.443)	−0.024 (−0.916)	0.010 (0.587)	−0.001 (−0.036)	0.006 (0.356)	0.007 (0.392)
<i>Rank</i>	0.006 (0.315)	−0.022 (−0.428)	0.045 (1.515)	−0.033 (−1.236)	−0.026 (−0.954)	0.022 (0.771)
<i>Constant</i>	0.867 (1.090)	−2.305 (−0.920)	1.092 (0.952)	2.634** (2.297)	−0.501 (−0.457)	1.859 (1.638)
Firm Fixed Effects	YES	YES	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Observations	27,613	5,801	16,649	16,765	16,203	15,345
Adj. R-squared	0.033	0.038	0.041	0.031	0.034	0.037

This table reports results of the OLS regression. All of the regressions include the firm and year fixed effects. Robust t-statistics are in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Third, the higher the education level of board secretaries, the more likely they are to develop professional skills to interpret information. In other words, board secretaries' level of education reflects the professional knowledge and quality. Research shows that the education level of board secretaries is related to their ability to manage the market value of their company (Jia and Wen, 2016). We expect board secretaries with a higher level of education play a greater role in improving the information content of site visits. To test this conjecture, the sample is divided into two groups based on whether the board secretary has a Master's degree. Columns (5) and (6) of Table 7 report the results. The coefficient on *Attend* in the high education level group is significant and positive (0.071). In contrast, the coefficient on *Attend* in the low education level group is not significant. These results show that board secretaries with a higher level of education have a greater ability to interpret company information.

4.3.2. Investor information demand perspective: The level of information asymmetry

The level of information asymmetry between firms and investors affects investor demand for information interpretation. The higher the level of information asymmetry in the company, the greater the demand for information from investors, the greater the contribution of the board secretary to investors' information assimilation, and the greater the market information efficiency (Chapman et al., 2019). In this section, we use whether a company is diversified, whether it is audited by a Big 4 auditor, and a company's operational uncertainty to measure the level of information asymmetry. We expect companies with a high level of

Table 8

Board secretary attendance and the information content of site visits: The degree of investor information asymmetry.

Dependent Variable=	CAR					
	(1) Diversified	(2) Specialized	(3) Non-Big 4	(4) Big 4	(5) High uncertainty	(6) Low uncertainty
<i>Attend</i>	0.056** (2.184)	0.040 (1.369)	0.048** (2.466)	0.075 (1.258)	0.066*** (2.612)	0.030 (1.030)
<i>Size</i>	0.037 (0.737)	−0.096* (−1.779)	−0.028 (−0.846)	0.101 (0.507)	−0.037 (−0.772)	0.039 (0.621)
<i>Lev</i>	−0.219 (−1.440)	−0.021 (−0.110)	−0.114 (−1.031)	−0.004 (−0.007)	−0.120 (−0.679)	−0.083 (−0.476)
<i>Revenue</i>	−0.054 (−1.493)	0.001 (0.020)	−0.017 (−0.637)	−0.263** (−2.053)	−0.050 (−1.368)	0.028 (0.435)
<i>ROA</i>	−1.180*** (−2.658)	−0.438 (−0.871)	−0.655** (−2.090)	1.515 (1.045)	0.092 (0.204)	−1.543*** (−3.043)
<i>Tobinq</i>	0.048*** (2.623)	0.050*** (2.645)	0.050*** (4.003)	0.035 (0.500)	0.021 (0.997)	0.067*** (3.712)
<i>Institution</i>	0.105 (1.010)	0.054 (0.506)	0.076 (1.087)	−0.100 (−0.281)	0.139 (1.273)	0.044 (0.410)
<i>Analystfollow</i>	−0.078*** (−3.739)	−0.035 (−1.335)	−0.050*** (−3.200)	−0.201*** (−2.797)	−0.089*** (−3.807)	−0.038 (−1.578)
<i>Lndrdate</i>	−0.000 (−0.018)	0.008 (0.474)	0.013 (1.034)	−0.069** (−2.157)	−0.014 (−0.891)	0.014 (0.787)
<i>Rank</i>	0.027 (1.045)	0.008 (0.283)	0.014 (0.738)	−0.012 (−0.143)	0.015 (0.566)	0.003 (0.100)
<i>Constant</i>	−0.629 (−0.569)	2.137* (1.829)	0.707 (0.983)	−1.759 (−0.364)	1.069 (0.995)	−0.749 (−0.555)
Firm Fixed Effects	YES	YES	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Observations	18,812	14,250	31,638	2247	16,907	16,978
Adj. R-squared	0.038	0.034	0.032	0.042	0.038	0.032

This table reports the results of the OLS regression. All of the regressions include the firm and year fixed effects. Robust t-statistics are in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

information asymmetry to have a more helpful board secretary to help investors assimilate company information, resulting in a stronger market reaction.

First, the business activities and business environment of diversified companies are more complex (Cang et al., 2020), so it is more difficult for investors to assimilate information. Therefore, in diversified companies, investors need more help in interpreting company information. Following Zhang and Zeng (2010), if the number of business or industry divisions of a company is greater than 1, we classify it as a diversified firm, and if the number of business or industry divisions of a company is equal to 0, we classify it as a specialized firm. To test our conjecture, the sample is divided into two groups. Columns (1) and (2) of Table 8 report the results. The coefficient on *Attend* is positive and significant at the 5% level in the diversified firm group; however, the coefficient on *Attend* is not significant in the specialized firm group. These results show that board secretaries of diversified companies improve the informativeness of site visits by helping investors to assimilate that information.

Second, high-quality audit firms play a supervisory role and reduce information asymmetry (Bu and Sun, 2018; Wang and Wang, 2019). Therefore, investors demand more information for non-Big 4 companies. We divide the sample into two groups, and columns (3) and (4) of Table 8 report the results. The coefficient on *Attend* is positive and significant at the 5% level in the non-Big 4 firm group. In contrast, the coefficient on *Attend* is not significant in the Big 4 firm group. These results show that board secretaries of low-quality audit firms is more important in assimilating information.

Third, the higher the operational uncertainty of a company, the higher the information asymmetry for its investors (Lin et al., 2015), and the more likely the board secretary is to play a role in the information assimilation process. To test this conjecture, we use the standard deviation of revenue over the past two years as a

proxy for operational uncertainty. To this end, the sample is divided based on the median of the annual data. Columns (5) and (6) of Table 8 report the results. The coefficient on *Attend* is positive and significant at the 1% level in the high uncertainty group. However, the coefficient on *Attend* is not significant in the low uncertainty group. These results show that in firms with a high level of information asymmetry, investors need more help with information assimilation. The board secretary improves the information content of site visits by attending these visits.

4.4. Additional analysis: Presence of the board secretary and analyst forecast errors

The empirical evidence presented above shows that there is a significant and positive correlation between the presence of the board secretary and the informativeness of site visits, and that this relationship is more significant in firms with a board secretary who has a greater ability to interpret information and in firms for which investors face a higher level of information asymmetry. In this section, we further explore the relationship between the number of site visits attended by the board secretaries and the information asymmetry of firms.

Studies show that corporate site visits can improve analysts' forecast accuracy. This improvement comes from the incremental information obtained through face-to-face communication (Cheng et al., 2016a; Han et al., 2018). The number of site visits attended by institutional investors is significantly and positively correlated with firm disclosure quality (Tan and Lin, 2016), and the number of site visits attended by analysts is significantly and positively correlated with the market reaction to the annual reports of firms (Li and Pan, 2018). Following previous studies (Tan and Lin, 2016; Li and Pan, 2018), we construct Model (3):

$$\text{AnalystForecast}_{i,t} = \alpha + \beta \text{AttendTimes}_{i,t} + \gamma' CV_{i,t} + \varepsilon_{i,t} \quad (3)$$

Table 9
Board secretaries attending site visits and analyst forecast error and dispersion.

Dependent Variable=	<i>AnalystForecast_Error</i>		<i>AnalystForecast_Dispersion</i>	
	(1)	(2)	(3)	(4)
<i>AttendNum</i>	−0.002*** (−2.668)		−0.002*** (−2.904)	
<i>AttendPercent</i>		−0.004* (−1.903)		−0.002 (−1.007)
<i>Size</i>	−0.002 (−1.185)	−0.002 (−1.189)	−0.001 (−0.719)	−0.001 (−0.663)
<i>Lev</i>	−0.028*** (−4.375)	−0.027*** (−4.333)	−0.021*** (−4.587)	−0.021*** (−4.539)
<i>Revenue</i>	−0.015*** (−9.680)	−0.015*** (−9.799)	−0.005*** (−4.179)	−0.005*** (−4.301)
<i>ROA</i>	0.461*** (26.456)	0.459*** (26.324)	−0.001 (−0.092)	−0.003 (−0.200)
<i>Tobinq</i>	0.005*** (6.647)	0.005*** (6.623)	0.003*** (6.129)	0.003*** (6.097)
<i>Institution</i>	−0.026*** (−6.691)	−0.026*** (−6.763)	−0.017*** (−6.064)	−0.017*** (−6.151)
<i>Analystfollow</i>	0.009*** (10.054)	0.009*** (9.707)	0.005*** (6.298)	0.004*** (5.903)
<i>Rank</i>	−0.003*** (−2.754)	−0.003*** (−2.770)	−0.001 (−0.802)	−0.001 (−0.899)
<i>Constant</i>	0.100** (2.505)	0.101** (2.519)	0.041 (1.432)	0.039 (1.355)
Firm Fixed Effects	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES
Observations	4,489	4,489	4,085	4,085
Adj. R-squared	0.685	0.685	0.205	0.203

This table reports the results of the OLS regression. All of the regressions include the firm and year fixed effects. Robust t-statistics are in parentheses. The superscripts ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

where i represents the company, and t represents the year. The dependent variable *AnalystForecast* represents either the level of analyst forecast error or the level of analyst forecast dispersion. Following Wu and Hu (2015), the level of analyst forecast error (*AnalystForecast_Error*) is measured as the absolute value of the difference between the median of analysts' earnings per share forecast and the actual earnings per share divided by total assets. The level of analyst forecast dispersion (*AnalystForecast_Dispersion*) is calculated as the standard deviation of analyst forecasts divided by total assets. The smaller the forecast error and the smaller the forecast dispersion, the better the analyst forecast performance. *AttendTimes* is measured either by the total number (*AttendNum*) or the proportion (*AttendPercent*) of site visits attended by board secretaries throughout the year. *CV* is the vector of control variables, as defined previously.

Table 9 reports the results of Model (3). Column (1) shows the results of the regression of *AnalystForecast_Error* on *AttendNum*. The coefficient on *AttendNum* is significant and negative (coefficient = -0.002 , $t = -2.668$). In Column (2), the coefficient on *AttendPercent* is also significant and negative (coefficient = -0.004 , $t = -1.903$). Columns (3) and (4) report the results of the regression of *AnalystForecast_Dispersion* on *AttendNum* and *AttendPercent*. These results are consistent with our expectations. When the board secretary participates in site visits and communicates with investors, investors are better able to assimilate company information and have reduced information asymmetry.

5. Conclusion

The board secretary is a key participant in the capital market. Numerous studies have explored how to improve the information role of the board secretary to reduce information asymmetry and improve information efficiency in the capital market (e.g., Mao et al., 2013), which has been a challenging “black box”. We focus on firms listed on SZSE that organized corporate site visits between 2012 and 2019 and investigate the information interpretation role of their board secretary in the information assimilation process. Our results show that the presence of the board secretary can significantly improve the informativeness of site visits, thereby improving the information efficiency of the capital market. Specifically, from the perspective of the information interpretation ability of board secretaries, board secretaries who have a dual role, high relative compensation, and a high level of education have a greater effect on improving the informativeness of site visits when attending such visits. From the perspective of information asymmetry, for diversified companies, firms not audited by Big 4 auditors, and firms with high operational uncertainty, the information interpretation role of the board secretary is more pronounced. Further analysis shows that when the board secretary attends more site visits, the levels of analyst forecast error and analyst forecast dispersion are lower. In summary, we provide evidence that by attending site visits, the board secretary play an important role in the information interpretation process, reduce the information processing costs of investors, and ultimately improve market information efficiency.

The findings of this study enrich the literature on information dissemination efficiency and corporate site visits and deepen our knowledge of the role of the board secretary. They also have a number of implications. First, with the implementation of the registration-based IPO system, firms are required to disclose more information. Therefore, policymakers and listed firms should consider how to simultaneously improve the quality of information disclosure and the efficiency of information processing. Second, the assessment of listed firms' disclosure quality by regulatory authorities should include the market information efficiency to more accurately measure the disclosure quality of firms and protect investor interests. Therefore, listed firms should (1) disclose understandable information and (2) provide more opportunities to communicate and interact with investors.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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