Site Visits and Corporate Investment Efficiency

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Abstract

Site visits allow visitors to physically inspect productive resources and interact with onsite employees and executives face-to-face. We posit that, by allowing visitors to acquire investment-related information and monitor the management team, site visits offer disciplinary benefits for corporate investments. Using mandatory disclosures of site visits in China, we find that corporate investments become more responsive to growth opportunities as the intensity of site visits increases, consistent with the notion that site visits yield disciplinary benefits. We also find that the positive association between site visits and investment efficiency is more pronounced when visitors can glean more investment-related information and when they have stronger incentives and greater power to monitor managers. This positive association is also stronger among firms with more severe agency problems and higher asset tangibility. The overall evidence supports the notion that site visits serve as a unique venue for institutional investors and financial analysts to acquire valuable information and serve a monitoring function, which generates disciplinary benefits for corporate investments.

1. Introduction

Corporate access provides unique opportunities for outsiders to monitor and connect with management. Over the past few years, the demand for corporate access has increased, as investors and analysts seek monitoring opportunities and private information that can help them make better decisions. In fact, the growing appetite for corporate access is so strong that it has prompted the restructuring of business models in sell-side shops, which now make unprecedented commitments to corporate access services (e.g., Green, Jame, Markov, and Subasi 2014a, 2014b). Prior research suggests that institutional investors and financial analysts seek valuable information and perform costly monitoring to oversee managers, which curtails managers' opportunistic behavior.[1] We propose that site visits, an important corporate access activity, provide a unique venue for institutional investors and analysts to acquire investment-related information and function as monitors, which yields disciplinary benefits for corporate investments.

Recent regulations in China mandate the disclosure of corporate site visits. We exploit this setting to examine whether, by granting visitors access to investment-related private information (an information channel) and allowing them to monitor management (a monitoring channel), site visits discipline managers and mitigate inefficiency in corporate investments. Site visits represent a unique form of corporate access as they allow visitors to physically inspect productive resources and have face-to-face small group interactions with onsite employees and executives. In China, corporate site visits are usually initiated by institutional investors and financial analysts, rather than by management. According to China's Fair Information Disclosure Guidelines, managers must accommodate site visit requests and may not choose visitors selectively. Visitors are able to deepen

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[1] These studies include Chung and Jo (1996), Bushee (1998), Gillan and Starks (2000), Ivkovic and Jegadeesh (2004), Asquith, Mikhail, and Au (2005), Yu (2008), Chen, Cheng, and Lo (2010), McCahery, Sautner, and Starks (2016), and Irani and Oesch (2016).

their understanding of corporate investments, especially facets such as inventory production, project selection, labor engagement, and future investment plans. During site visits, visitors may reaffirm or update their prior opinions about corporate investments based on insiders' onsite responses and information gleaned from physical inspections and face-to-face meetings. Anecdotal evidence suggests that divisional managers, top executives, and even board members carefully respond to questions and concerns from visitors.[2] Moreover, as inefficient investments are often betokened by "suspicious" activities (such as idle production facilities or overstocked inventories), physical inspections provide an opportunity for visitors to identify such issues and raise more questions and concerns regarding managers' investment decisions. Site visits, therefore, yield disciplinary benefits for corporate investments by enhancing monitoring of management teams.

Optimal investment decisions require managers to fully exploit investment opportunities by undertaking all possible projects with positive net present value (NPV) and avoid any projects with negative NPV. Prior research suggests that information asymmetry exacerbates managerial incentives to distort investment decisions for personal gain. Specifically, self-interested managers, when they are not closely monitored, have incentives to either overinvest in order to pursue "empire building" or underinvest so as to enjoy a "quiet life." Neither of these two outcomes is justified by growth opportunities, and they certainly do not serve the best interests of shareholders (e.g., Jensen 1986, Bertrand and Mullainathan 2003, Titman, Wei, and Xie 2004).[3] By granting visitors access to investment-related private information and facilitating their monitoring activities, site visits can effectively discipline managers and improve investment efficiency.

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[2] See Appendix A for notes on our interviews with executives and visitors.

[3] Besides the "quiet life" incentive, underinvestment can result from financial frictions and associated information asymmetry between insiders and capital providers, which may force managers to give up positive NPV projects (e.g., Myers and Majluf 1984, Ramalingegowda, Wang, and Yu 2013). Site visits can help lower information asymmetry between insiders and capital providers, thus reducing underinvestment. For example, site visitors can collect information and disseminate such information to capital providers. This possibility, however, is empirically difficult to assess due to the unobservable nature of private communication between visitors and capital providers.

Several counterforces exist. It is conceivable that managers conceal unfavorable information or present biased information during site visits. Hence, visitors may not always glean useful information and may even form biased opinions. Moreover, some visitors (such as inexperienced institutional investors and novice analysts) tend to focus on networking with managers and other visitors during site visits, rather than focusing on monitoring management.[4] Managerial discretion over information disclosure and/or visitors' lack of monitoring incentives may thus limit the potential disciplinary benefits of site visits. Ultimately, whether site visits can improve corporate investment efficiency remains an empirical question.

Despite the increasing importance of corporate access, details about site visits are largely unavailable in many countries, including the U.S. We draw on recent Chinese regulations mandating the disclosure of corporate site visits to examine the role they play in improving managers' investment decisions. Since 2009, the China Securities Regulatory Commission (CSRC) and the Chinese Shenzhen Stock Exchange (SZSE) have required SZSE-listed firms to disclose information related to corporate site visits in annual reports. Based on 13,247 firm-years from 2009 to 2018, we find that, after controlling for various economic determinants of corporate investments and alternative monitoring mechanisms, the sensitivity of corporate investments to growth opportunities (proxied by Tobin's Q) improves as the intensity of site visits increases. In terms of economic significance, one standard deviation increase in site visit intensity is associated with a 54.9% increase in the sensitivity of investments to Tobin's Q. These results are robust both to an identification test proposed by Oster (2019) and to entropy balancing. We also find that initiations of site visits lead to significant improvements in investment efficiency. These identification tests mitigate the omitted variable concern.

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[4] Indeed, untabulated results show that site visits by more experienced visitors are positively associated with investment efficiency, while site visits by less experienced visitors are not significantly associated with investment efficiency.

Our main findings support the notion that site visits yield disciplinary benefits. Specifically, site visits can effectively discipline managers and improve investment efficiency by granting visitors access to investment-related private information (an information channel) and facilitating visitors' monitoring activities (a monitoring channel). We note that although the two channels are distinctive, they interact with each other to generate disciplinary benefits. In particular, an increase in investment-related private information can enhance visitors' ability to effectively monitor management and thereby magnify the disciplinary benefits of site visits. However, if visitors lack either the incentives to monitor managers or the power to pressure them, private information alone is not sufficient to ensure that disciplinary benefits materialize.

To gain further insights into the implications of site visits for corporate investments, we conduct several cross-sectional tests. The first set of cross-sectional tests are based on visit-specific characteristics. We find that the positive association between site visits and investment efficiency is driven by plant/factory visits as opposed to headquarters visits. This evidence supports the notion that the disciplinary benefits of site visits are stronger when visitors have the opportunity to glean more investment-related information. We also find that this positive association is driven by site visits from institutional investors who have skin in the game, suggesting that the incentives and power to monitor management are an important condition for site visits to generate disciplinary benefits.

The next set of cross-sectional tests are based on visited-firm-specific characteristics. We find that the positive association between site visits and investment efficiency is particularly evident among firms with relatively poor information environments (proxied by information asymmetry and return volatility). This association is insignificant among firms with better information environments, although the differences between the partitions are either insignificant or marginally significant. We also find that this positive association is more evident among firms

with more severe agency problems and higher asset tangibility, which is consistent with such firms benefiting more from visitors' monitoring activities. Overall, the cross-sectional results support the notion that site visits yield disciplinary benefits for investment efficiency through both the information channel and the monitoring channel.[5]

We note that our results cannot be easily inferred from prior studies. Cheng, Du, Wang, and Wang (2016, 2019) show that site visits help inform market participants by reducing information asymmetry. If site visitors' acquisition of investment-related information reduces information asymmetry and information acquisition alone is sufficient for the disciplinary benefits to materialize, our results would be inferable from prior findings. However, we find that the positive association between site visits and investment efficiency is evident for visits that do not reduce information asymmetry (proxied by the adverse selection component of bid-ask spread) but insignificant for visits that reduce information asymmetry around site visits.[6] Such evidence suggests that the disciplinary benefits of site visits arise even if those visits do not significantly reduce information asymmetry.

To demonstrate the uniqueness of site visits as a form of corporate access, we examine the association between conference calls, another important corporate access activity, and corporate investment efficiency. While conference calls also allow shareholders and analysts to interact with top management, they do not involve physical inspections and interactions with lower-level managers and employees, features that prove to be important for accruing disciplinary benefits. We find that conference calls improve analyst forecast accuracy as much as site visits, but conference

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[5] Interestingly, we find that both headquarters visits and plant/factory visits help analysts improve forecast accuracy, and the difference in the improvement is statistically insignificant (untabulated for brevity). In contrast, headquarters visits do not help improve investment efficiency while plant/factory visits help improve investment efficiency. These findings highlight the unique aspects of site visits and their disciplinary benefits.

[6] The insignificant results for site visits that reduce information asymmetry may suggest that investment-related information gleaned from site visits is different from the information that is relevant to trading and forecasting activities. If so, its impact cannot be measured by market-based proxies for information asymmetry.

calls do not improve investment efficiency while visits do. Thus, disciplinary benefits are a unique advantage of site visits, while other types of corporate access events may not yield similar benefits.

Requests for site visits may be an endogenous choice. Changes in local economic conditions may affect site visitors' interest in visiting the firm as well as the firm's investment decisions, leading to a spurious relation between site visits and investment efficiency. To address this concern, we identify an instrument of exogenous change to site visits that is unlikely to directly affect investment efficiency. Specifically, we identify new flights, created due to airline-specific factors and uncorrelated with local economic growth, to the Metropolitan Statistical Area (MSA) where the visited firm is located. Our results are robust to the instrumental variable approach.

This study contributes to the literature that examines the monitoring role of institutional investors and financial analysts. Prior studies document that institutional investors and financial analysts have incentives to monitor managers and discipline their self-serving behavior (e.g., Chung and Jo 1996, Bushee 1998, Gillan and Starks 2000, Yu 2008, McCahery et al. 2016, Irani and Oesch 2016). We extend this literature by documenting how site visits, a unique corporate access activity, serve as a venue for institutional investors and financial analysts to discipline managers and help improve investment efficiency. We note that site visits differ from other forms of corporate access as they allow visitors to physically inspect productive resources and participate in small group interactions with onsite employees in addition to executives.[7] Indeed, the positive association between site visits and investment efficiency is mainly driven by plant/factory visits rather than headquarters visits. Considering these unique features of site visits, our findings echo the auditing literature that has long

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[7] Many corporate access activities—such as non-deal roadshows, investor/analyst days, and corporate conferences—mainly provide investors with updates on the company's financial performance and business prospects. These events are mostly held in convention centers or corporate headquarters so that investors cannot access the company's onsite production facilities. In addition, many corporate access events do not include face-to-face meetings with managers but are done by phone or video (such as conference calls), in which managers can dodge questions and rarely follow up with unaddressed questions (Hollander, Pronk, and Roelofsen 2010, Gow, Larcker, and Zakolyukina 2021).

recognized the importance of physical inspection as integral to the audit function (e.g., Peloubet 1928, Appelbaum and Nehmer 2017, Appelbaum, Budnik and Vasarhelyi 2020).[8]

We also contribute new insights to the literature examining the economic consequences of corporate access. Prior studies focus on the information content and capital market consequences of corporate access activities such as conference calls, broker-hosted investor conferences, firm-initiated analyst/investor days, and site visits (Green et al. 2014a, Kirk and Markov 2016, Cheng et al. 2016, 2019, Bushee, Jung, and Miller 2017, Bushee, Gerakos, and Lee 2018). Existing evidence suggests that corporate access is a conduit for passing private information to institutional investors, financial analysts, and market participants in general, as evidenced by significant price reactions, trading volume, and analysts' forecasting reactions surrounding corporate access activities (e.g., Kirk and Markov 2016, Cheng et al. 2019, Green et al. 2014a). We extend this line of research by demonstrating that site visits, an important corporate access activity, can yield disciplinary benefits for corporate investments by facilitating visitors to acquire private information and perform monitoring activities. By contrast, prior studies (e.g., Cheng et al. 2016, 2019) have only examined the information benefits of site visits. Our study highlights the disciplinary benefits of site visits and recognizes both information and monitoring channels. In particular, we show that visitors' incentives and power to monitor management are critical for site visits to generate disciplinary benefits, underscoring the monitoring channel.

One closely related study, Jiang and Yuan (2018), shows that corporate site visits promote corporate innovation, as evidenced by an increased volume of patent filings following site visits. While we similarly consider intangible investments, we broaden the scope of analysis by accounting for tangible investments as well. Our cross-sectional results show that the positive

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[8] We thank an anonymous referee for this insight.

association between site visits and investment efficiency is concentrated among firms that have greater tangible asset investments and firms that host plant/factory visits. Importantly, an increased level of corporate investments (such as patent filings) does not necessarily imply more efficient investment, as managers tend to overinvest and may not choose the "right" projects. Our empirical analyses focus on the efficiency of corporate investments, rather than the level of investment.

Lastly, our results have implications for the cost-benefit analysis of corporate access. Site visits consume significant time and resources for both firms and visitors. When one considers other possible opportunities to access the management team—such as conference calls, broker-hosted investor conferences, and firm-initiated analyst/investor days—it is not apparent whether the potential economic benefits of site visits justify the nontrivial costs. Our evidence indicates that site visits can facilitate more efficient investment decisions. While we do not examine the costs of site visits and cannot comment on their net benefits, our results can help inform both management and stakeholders in making cost-benefit deliberations.

2. Institutional Background and Hypothesis Development

2.1. Institutional Background

Corporate site visits represent an important type of corporate access activities in financial markets. Using the All-America Research Team survey, *Institutional Investor* annually selects America's Top Corporate Access Providers. Sell-side shops' ability to arrange corporate site visits and factory tours is one of the four criteria used in designating a firm's ranking. Institutional investors and financial analysts are willing to spend extra time and incur additional costs (such as travel expenses) to make corporate site visits happen. In most countries, however, firms are not required to disclose details about site visits and rarely provide voluntary disclosures about investor

participation in them. This dearth of data hinders researchers' ability to examine the economic impact of site visits. In this study, we take advantage of the mandatory disclosure requirements on corporate site visits implemented in China.

Effective August 2006, the CSRC and the SZSE enacted the Fair Information Disclosure Guidelines. Article 41 of the Guidelines states that "listed companies should accommodate requests from investors, analysts, and fund managers to visit company headquarters and project sites to the greatest extent."[9] After a site visit, the visited firm is required to provide a summary to both the CSRC and SZSE. Summaries of site visits were not made available to the general public until 2009, when the CSRC and SZSE implemented a new disclosure rule mandating that all listed firms publicly disclose the summary information about each site visit in annual reports. In July 2012, this disclosure rule was amended to further require firms to file separate site-visit reports within two business days following the site visits. The rule is strictly enforced—CSRC and SZSE publicly denounce firms that fail to disclose site-visit information promptly.[10]

2.2. Typical Features of Site Visits

Site visits allow visitors (typically institutional investors and financial analysts) to access onsite production facilities and interact with onsite employees and executives. A typical site visit includes a pre-tour session with managers, a tour of the firm's facilities, and a post-tour Q&A session. The pre-tour session often provides an opportunity for managers to discuss details of corporate investments (e.g., specific types of newly acquired assets, the cost and schedule of maintenance, a particular product line capacity, or termination or introduction of products). Managers can also

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[9] In addition, the SZSE emphasizes that "listed companies should arrange the site visits properly, so that visitors may better understand the companies' business and operational situations."

[10] Firms generally follow the Fair Information Disclosure Guidelines strictly and rarely reject site-visit requests. In unusual cases, such as when executives are out sick or travelling, firms would reschedule the visits rather than reject the requests. Furthermore, most firms respond to site-visit requests promptly; in many cases, visitors are allowed to visit corporate sites the next day or within the next few days after they submit the requests. See Appendix A for more details.

discuss financial performance or take the opportunity to rebut rumors circulating in the marketplace. After the pre-tour session, visitors follow a guided tour of the plant/factory or headquarters, depending on what the visitors have requested. During the tour, investors can observe the firm's production facilities, manufacturing activities, and employee engagement in daily operations. Most firms also arrange a post-tour Q&A session to resolve questions raised during the tour.

Both physical tours and post-tour Q&A sessions give visitors the opportunity to perform the monitoring function and allow them to directly express concerns about inefficient investments to management. During the tour, visitors can pose questions to the tour guide (normally the general secretary of the board or a mid-level manager) and/or onsite employees based on their observations. Onsite employees may provide information that is incremental to the more diplomatic answers often given by managers. During the post-tour Q&A session, visitors can pose questions to top executives, managers handling investor relationships, and/or mid-level managers. Importantly, small group interactions with executives enable visitors to gauge the quality of management by observing how they answer questions; visitors can also voice their concerns and opinions directly on behalf of shareholders' interests.

For major questions that are not immediately addressed during site visits, firms follow standardized procedures to provide responses. Unaddressed questions may be submitted to the next scheduled board meeting for discussion; management then provides either public or private responses to visitors. If any questions remain unaddressed or the responses are unsatisfactory, visitors can re-raise these issues at the next shareholder meeting. Subsequent to site visits, the CEOs of visited firms sometimes meet with the visitors' asset management teams to clarify certain issues.

In summary, site visits not only provide engaged interactions with a firm's employees and top executives, but also allow visitors to observe the firm's productive resources. By granting

visitors access to timely and rich investment-related information, site visits potentially facilitate visitors' monitoring of management and generate disciplinary benefits for corporate investment decisions.

2.3. Hypothesis Development

According to the net present value (NPV) rule, managers should fully exploit investment opportunities by undertaking all positive NPV projects and avoid negative NPV projects. In reality, information asymmetry between managers and market participants heightens managers' self-serving incentives and hampers effective external monitoring (e.g., Myers and Majluf 1984, Jensen 1986, Stein 2003, Bertrand and Mullainathan 2003, Baker, Stein, and Wurgler 2003), thus leading to suboptimal investment decisions. Specifically, the empire-building incentive induces managers to continue investments even when all positive NPV projects have already been exploited (Jensen 1986, 1993). Jensen (1986), for example, suggests that managers have incentives to grow their firms beyond the optimal size. Blanchard, Lopez-de-Silanes, and Shleifer (1994) examine how managers behave when they receive a cash windfall that does not change the investment opportunity set. In perfect financial markets, managers should return the money to capital suppliers, but Blanchard, Lopez-de-Silanes, and Shleifer (1994) find that managers instead tend to invest in projects with a high failure rate. Alternatively, the quiet-life hypothesis suggests that managers sometimes forgo positive NPV projects to lessen their workload (Bertrand and Mullainathan 2003). Information asymmetry also increases financing frictions arising from adverse selection, resulting in even more severe underinvestment problems.[11]

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[11] Underinvestment may also arise from agency conflicts between debtholders and equity-holders (Myers 1977). Myers (1977) considers a firm that has to issue risky debt to finance investments and shows that managers who act in shareholders' interest may reject value-increasing investment opportunities if the expected payoffs from the investment are less than the sum of the required investment and the promised payment to debtholders.

Site visits could help improve corporate investment efficiency through two channels. First, as elaborated in the previous section, physical inspections and face-to-face interactions with insiders allow visitors to glean timely and useful investment-related information that is not accessible elsewhere (i.e., the "information" channel). Information gathered from site visits can also help visitors verify and process information obtained from alternative sources such as annual reports, press releases, media reports, and other corporate disclosures. As site visits enhance visitors' understanding of a firm's overall investment decisions, they also make it more likely that inefficient investments will be uncovered, which would damage the managers' reputations and could even negatively impact their long-term careers. This curbs managers' self-serving incentives and improves the firm's investment efficiency.

Second, site visits allow visitors to perform their monitoring role more effectively, which can directly discipline managers and curtail inefficient investments (i.e., the "monitoring" channel). As many visitors represent significant stakeholders of the firm (e.g., large shareholders and relationship analysts), they have incentives and power to monitor the management team. During site visits, visitors can raise potential "red flags" based on what they observe during physical inspections (such as idle production facilities and overstocked inventories) and urge managers to remediate the issues promptly in face-to-face meetings. Accordingly, their concerns and opinions can have a direct impact on managers' investment decisions. Visitors may also relay their concerns to other market participants and corporate stakeholders, further disciplining managers to curtail inefficient investments.

We note that although these two channels are distinctive, they interact with each other to generate disciplinary benefits. On the one hand, the information channel can enhance the effectiveness of monitoring by making visitors more knowledgeable about the firm's investment decisions. On the other hand, not all site visitors have the incentives and power to monitor management, and they may

choose to "walk away" rather than exert costly monitoring efforts. Thus, the information channel, by itself, may not discipline managers in a way that improves investment efficiency if visitors lack the incentives or power to voice their concerns. In summary, corporate site visits can facilitate visitors' acquisition of more investment-related information and enhance their monitoring activities, thus curbing managers' self-serving incentives and improving investment efficiency.

The above reasoning leads to the following hypothesis, stated in the alternative form.

Hypothesis: *The site visit intensity is positively associated with investment efficiency in the subsequent period.*

3. Sample and Research Design

3.1. Sample Selection

We collect information about site visits from annual reports filed by SZSE-listed firms between 2009 and 2018, including the business affiliation of visitors, event dates, and the addresses of visited locations.[12] We obtain financial data from the China Stock Market & Accounting Research (CSMAR) database. After dropping observations with missing values of regression variables, the final sample for the main analysis consists of 13,247 firm-year observations representing 1,867 unique firms. The sample size varies slightly in some analyses either because of missing observations for additional variables or because of the specific tests conducted.

3.2. Empirical Model

We follow the extant literature (e.g., Stein 2003, Lang, Ofek, and Stulz 1996, Bushman, Smith, and Zhang 2007, Hung, Wong, and Zhang 2008, Chen, Hope, Li, and Wang 2011,

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[12] Since 2012, firms have been required to file separate site-visit reports. We also collect data from these reports to complement the information collected from annual reports. We stop the sample period in 2018 to avoid the significant impact of the COVID-19 pandemic and associated travel restrictions on Chinese companies' site visits and investments.

Badertscher, Shroff, and White 2013) and use the sensitivity of investment expenditure to investment opportunities as our measure of investment efficiency. Specifically, we estimate the following baseline regression model:

$$Investment_{t+1} = \beta_0 + \beta_1 TobinQ_t + \beta_2 VisitFreq_t + \beta_3 TobinQ_t \times VisitFreq_t$$

$$+ \beta_4 Control_t + Firm \& Year \ fixed \ effects + \varepsilon_t \qquad (1)$$

where the dependent variable *Investment$_{t+1}$* is one-year-ahead investment expenditure defined as cash payments for fixed assets, intangible assets, and other long-term assets from the cash flow statement minus cash receipts from selling these assets, scaled by lagged total assets.[13] *TobinQ$_t$* captures investment opportunities and is measured as the book value of liabilities plus the market value of equity, scaled by lagged total assets. *VisitFreq$_t$* is the intensity of site visits defined as the natural logarithm of 1 plus the total number of site visitors (Cheng et al. 2016, 2019). The main variable of interest is the interaction between *TobinQ$_t$* and *VisitFreq$_t$*. Our hypothesis predicts that the sensitivity of investment expenditure to investment opportunities improves as the intensity of site visits increases, so we expect the coefficient on *TobinQ$_t$×VisitFreq$_t$* to be greater than zero.

Control$_t$ represents a vector of variables that proxy alternative monitoring mechanisms and firm characteristics that may influence a firm's investment level or site visit intensity. Prior studies find that various corporate governance mechanisms can help monitor and discipline management and may influence investment efficiency (e.g., Chen et al. 2011, Zhang and Su 2015, Lin, Schmid, Xuan 2018, Choi, Hann, Subasi, and Zheng 2020). Thus, we control for alternative monitoring mechanisms including big four accounting firms (*Big4$_t$*); cross listing status (*CrossList$_t$*); institutional holdings (*Institutional_Holding$_t$*); qualified foreign institutional holdings

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[13] The definition of *Investment* follows Chen, Sun, Tang, and Wu (2011) and is conceptually equivalent to capital expenditure (COMPUSTAT Item CAPX) often used in U.S.-based studies.

(*Foreign_Holding$_t$*); media coverage (*Media_Coverage_Rank$_t$*); central state-controlled enterprise (*Central_SOE$_t$*); local state-controlled enterprise (*Local_SOE$_t$*); and supervisory board (*Supervisors$_t$*).[14] Because prior studies (e.g., Yu 2008, Chung and Jo 1996) suggest that financial analysts monitor and discipline managers, we also control for analyst characteristics such as analyst coverage (*Analyst_Coverge_Rank$_t$*) and analyst forecast accuracy (*Accuracy_Rank$_t$*). We also include the interactions between *TobinQ$_t$* and these monitoring proxies to control for their impact on the sensitivity of investment expenditure to investment opportunities.

Following Chen et al. (2011), we control for the determinants of a firm's investment level. Specifically, we include cash flow from operations (*CFO$_t$*), leverage (*Leverage$_t$*), cash proceeds from seasoned equity offerings (*SEO$_t$*), firm size (*LogAsset$_t$*), and firm age (*Age$_t$*). We also control for firm characteristics that may affect the intensity of site visits. Firms with more volatile stock returns may host more site visits, so we include return volatility (*Stock_Return_Volatility$_t$*). Because Cheng et al. (2016) find that analyst forecast accuracy increases more when analysts conduct site visits to firms with more tangible assets (*Tangibility$_t$*) and firms in a more concentrated industry (*HHI$_t$*), we control for *Tangibility$_t$* and *HHI$_t$*. Biddle, Hilary, and Verdi (2009) and Chen et al. (2011) both find that financial reporting quality affects investment efficiency, so we include accruals quality (*Accruals_Quality$_t$*) in the model. Appendix B provides detailed variable definitions.

Corporate governance proxies are known to be highly correlated with each other. Hence, to mitigate the influence of multicollinearity, we also estimate the model by replacing the ten

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[14] The Qualified Foreign Institutional Investor is a program that allows specific licensed international investors to participate in mainland China's stock exchanges. Chinese public firms are also required to adopt a two-tier board structure, a board of directors and a supervisory board. According to the Chinese Corporate Law, the supervisory board is a monitoring mechanism and oversees the board of directors (e.g., Dahya, Karbhari, Xiao, and Yang 2003, Firth, Fung, and Rui 2007). A supervisory board should have at least three members (supervisors), including at least one elected by employees of the firm and at least one representing the minority shareholders. The directors, general managers, and financial officers of the firm cannot be supervisors.

monitoring variables with *M-index$_t$*, which is the first principal component from the principal component analysis of these variables. To mitigate the influence of outliers, we winsorize all continuous variables at the top and bottom percentiles. To control for the effects of unobservable firm and year characteristics on investment expenditures, we include firm and year fixed effects in all models. Standard errors are robust to heteroskedasticity and clustered at the firm level.

3.3. Descriptive Statistics

Table 1 provides descriptive statistics. As shown in Panel A, the mean and median of *Investment* are 0.058 and 0.038, respectively. The mean and median of *TobinQ$_t$* are 2.207 and 1.743, respectively. These summary statistics are comparable to those reported in prior studies on Chinese public firms (e.g., Chen et al. 2011). In addition, the mean of *VisitFreq$_t$* is 1.893, suggesting that our sample firms on average have about 5.64 visitors per year. Untabulated statistics show that, among firms with site visits, the average number of visitors is 20.3 per year, in line with the 26.7 visitors per year reported in Jiang and Yuan (2018).

Turning to the control variables, the percentages of central and local state-controlled enterprises in our sample are 1.7% and 26.5%, respectively. The average firm size is about 3 billion (in RMB) and the average firm age is 6 years, consistent with those reported in Chen et al. (2011). The average value of accruals quality is -0.042, in line with those reported in the literature (e.g., Wang 2006).

Panel B presents Pearson (Spearman) correlations of the dependent and independent variables above (below) the diagonal. We observe that one-year-ahead investment expenditure (*Investment$_{t+1}$*) is positively and significantly correlated with investment opportunities (*TobinQ$_t$*) and site visits (*VisitFreq$_t$*).

4. Empirical Results

4.1. The Association between Site Visits and Investment Efficiency

Table 2 reports the estimation results of the baseline model in Equation (1). As discussed earlier, we estimate two variations of Equation (1). The first model includes the site visit intensity as well as ten proxies for alternative monitoring mechanisms, their interactions with Tobin's Q, and firm-level characteristics. In the second model, we include M-$index_t$ and its interaction with $TobinQ_t$ to replace the ten proxies for alternative monitoring mechanisms and their interactions with Tobin's Q.

Columns (1) and (2) present the results of estimating models 1 and 2, respectively. The coefficient on $TobinQ_t$ is significantly positive in both columns, indicating a positive relation between investment expenditures and growth opportunities in general. The coefficient on the interaction between $TobinQ_t$ and $VisitFreq_t$, is positive and statistically significant in both columns, indicating that investment expenditures are significantly more sensitive to growth opportunities when site visit intensity increases. This finding supports the hypothesis that an increase in site visit intensity is associated with more efficient corporate investments. The effect of site visits on investment efficiency is also economically significant. For instance, in column (2), the coefficients on $TobinQ_t$ and $TobinQ_t \times VisitFreq_t$ are 0.003 and 0.001, respectively. Thus, one standard deviation increase in site visit intensity (1.648) is associated with an improvement in the sensitivity of investments to investment opportunities by 54.9% ((0.001x1.648)/0.003).

The coefficients on control variables are generally consistent with prior evidence (e.g., Chen et al. 2011, Zhang and Su 2015, Cheng et al. 2016, Lin et al. 2018, Choi et al. 2020). In particular, the coefficient on the interaction between $TobinQ_t$ and media coverage is positive and significant, suggesting that media monitoring significantly curbs investment inefficiency. The coefficient on the interaction between $TobinQ_t$ and central state-controlled enterprise is positive and significant,

whereas the coefficient on the interaction between *TobinQ$_t$* and local state-controlled enterprise is insignificant, in line with the finding in Chen et al. (2011) that the investments of local SOEs are less sensitive to investment opportunities than those of central SOEs. Other corporate governance variables such as analyst coverage and forecast accuracy are positively associated with investment, while supervisory board is negatively correlated with investment. Among firm characteristics, we find that cash flow from operations, cash proceeds from seasoned equity offerings, and accruals quality are positively associated with investment, whereas leverage, firm size, firm age, and tangibility are negatively associated with investment. The coefficients on *M-index$_t$* and its interaction with *TobinQ$_t$* in column (2) are both positive and significant, suggesting that the principal component properly captures the effect of alternative monitoring mechanisms.

4.2. Identification Tests

We perform three identification tests to mitigate concerns about correlated omitted variables and functional form misspecification. First, to assess the sensitivity of our main results to potential unobservable confounds and coefficient stability, we conduct the analysis suggested in Altonji, Elder, and Taber (2005) and Oster (2019). This analysis draws on a proportional selection relationship to incorporate both coefficient movements (between uncontrolled and controlled regressions) and *R*-squared movements to identify omitted variable bias. Oster (2019) recommends the use of an estimate of *R$_{max}$*, the *R*-squared from a hypothetical regression of a dependent variable on the treatment variable, observed controls, and unobserved controls, which should equal 1.3×*R*-squared for the ordinary least squares (OLS) regression model that includes observable control variables. She also proposes a coefficient of proportionality, δ, which uses information from movements in the coefficient of interest and explanatory power (*R*-squared) of linear regression models with and without controls. For example,

a δ of 2.00 indicates that for unobservable factors to overturn the result, they would need to be twice as important as observables. A δ greater than 1 suggests coefficient stability or robust results.

Panel A of Table 3 reports the results. Model 1 (Model 2) refers to the regression model in column (1) (column (2)) of Table 2. While δ is greater than 1.00 in both models, Model 2 is the more powerful model with a higher δ of 3.034, suggesting that unobservable factors would need to be 3.034 times as important as the observable controls to render our results. We thus present only the results of Model 2 in subsequent tests for parsimony.

Second, we adopt the entropy balancing approach to mitigate the estimation biases, such as functional form misspecification, that arise from systematic differences in observable characteristics between the site-visits and non-site-visits samples. Following Hainmueller (2012) and Hainmueller and Xu (2013), we create a counterfactual control group in which we assign a weight (between 0 and 1) to each control observation, such that the variables we include as matching dimensions are balanced between site visits and non-site visits. Untabulated results show that entropy balancing removes the significant differences in means and variances between the site-visits and non-site-visits samples. We re-estimate the baseline regression models using the entropy balanced sample and present the results in Panel B of Table 3. The coefficients on $TobinQ_t \times VisitFreq_t$ remain positive and significant. These results suggest that our findings are not driven by the imbalanced covariate distributions between firms with and without site visits.

Finally, we identify firms that started or stopped hosting site visits to further mitigate the omitted variable concern. $Initiation\_Visit_t$ is an indicator variable that equals 1 for the year of site visit initiation and all subsequent years before a cessation, and 0 otherwise. To qualify as a site visit initiation, the firm must have at least 2 consecutive years without site visits followed by 2 or more consecutive years with site visits. We impose the condition of two or more consecutive years

with site visits once site visits are initiated to avoid on and off cases that might be considered random and do not affect managerial behavior. *Cessation_Visit_t* is an indicator variable that equals 1 for the year in which site visits ceased and all subsequent years before site visits resume, and 0 otherwise. To qualify as a site visit cessation, the firm must have at least 2 consecutive years with site visits followed by 2 or more consecutive years without site visits. Again, we impose the condition of two or more consecutive years without site visits once site visits are terminated to avoid on and off cases. As site visits are not sticky over time, firms may initiate site visits for a few years, cease for a few years, and resume.[15] A firm could thus have multiple initiations or cessations, as long as the interval is 2 or more consecutive years.

In Panel C (D) of Table 3, we examine the association between initiations (cessations) of site visits and a firm's investment efficiency. We find that investments are more responsive to Tobin's Q after firms initiate site visits, consistent with our main finding that site visits are positively associated with visited firms' investment efficiency. However, cessations of site visits do not significantly change the sensitivity of investments to Tobin's Q. The insignificant result on cessations of site visits may be attributed to firms expecting to have visitors in the near future and thus maintaining a consistent level of investment efficiency.[16] We also examine whether the effect of cessation differs between firms with more and less frequent visits before cessation. We define visit frequency based on the number of visitors over two years prior to cessation. Untabulated results suggest that investments are less responsive to Tobin's Q after cessation of site visits for firms with more frequent visits before cessation, but cessation does not change the sensitivity of

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[15] The first-order autocorrelation of *VisitFreq* is 0.075 (median).
[16] Site visits resume in about 10% of the cessation sample. If site visits resume, more than half of them occur immediately following the two-year period of cessation.

investments to Tobin's Q for firms with less frequent visits before cessation, although the difference between the two groups of firms is not statistically significant.

4.3. Cross-sectional Analyses

We conduct three sets of cross-sectional analyses, one based on visit-specific characteristics and the other two based on visited-firm-specific characteristics. Table 4 reports the results of cross-sectional analyses based on visit-specific characteristics. In Panel A, we examine whether a visit takes place in the plant/factory or the headquarters of the visited firm.[17] *PlantFreq$_t$* is the natural logarithm of 1 plus the total number of visitors from site visits to the plant/factory of the visited firm in year *t*; *HeadquartersFreq$_t$* is the natural logarithm of 1 plus the total number of visitors from site visits to the headquarters of the visited firm in year *t*. The coefficient on the interaction between *TobinQ$_t$* and *PlantFreq$_t$* is positive and significant, whereas the coefficient on the interaction between *TobinQ$_t$* and *HeadquartersFreq$_t$* is insignificant, suggesting that the positive association between site visits and investment efficiency is largely driven by plant/factory visits.[18] To the extent that plant/factory visits allow visitors to physically inspect productive facilities and glean more investment-related information, these results highlight the information channel through which site visits help improve investment efficiency.

In Panel B of Table 4, we examine whether visitors' monitoring incentive affects firms' investment efficiency. *HighIncentiveFreq$_t$* is the natural logarithm of 1 plus the total number of visitors from site visits that include at least one visitor from an institution that holds the visited firm's equity in year *t* (hereafter, high-incentive site visits). *LowIncentiveFreq$_t$* is the natural

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[17] One site visit only has one location, so there is no overlap between plant/factory visits and headquarters visits.

[18] In our sample, the mean value of *HeadquartersFreq*, before log transformation, is 17.95, and the mean value of *PlantFreq*, before log transformation, is 2.49. Thus, we have more visitors to corporate headquarters than to plants/factories, mitigating a concern that the difference in visit frequency between headquarters visits and plant/factory visits drives the results.

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logarithm of 1 plus the total number of visitors from site visits that do not include visitors from institutions that hold the visited firm's equity in year t (hereafter, low-incentive site visits). In our sample, the ratio of high-incentive site visits to low-incentive site visits is 38:62. Visitors holding equity ownership in the visited firm have a stronger incentive to limit managers' self-serving behavior because their personal wealth is directly linked to the visited firm's performance. The positive and significant coefficient on the interaction between $TobinQ_t$ and $HighIncentiveFreq_t$ and the insignificant coefficient on the interaction between $TobinQ_t$ and $LowIncentiveFreq_t$ suggest that visitors' monitoring incentives are important for site visits to facilitate more efficient investments.

Table 5 and Table 6 report the cross-sectional results based on visited-firm-specific characteristics. As in Table 4, we separately examine the characteristics that relate to the information channel versus the monitoring channel. Table 5 focuses on visited-firm-specific characteristics that relate to the general information environments. The disciplinary benefits of site visits would be particularly important for firms with poor information environments as site visits allow visitors to obtain investment-related information. Hence, we split the sample based on two measures of visited firms' information environments: information asymmetry and return volatility. Panel A reports the results based on the median value of information asymmetry ($Info\_Asymmetry$), measured as the adverse selection component of bid-ask spread over the year before the site visit frequency is measured (Lin, Sanger, and Booth 1995). As shown, the coefficient on $TobinQ_t{\times}VisitFreq_t$ is positive and weakly significant in both the high-information-asymmetry subsample and the low-information-asymmetry subsample, and the difference between the two subsamples is insignificant.

In Panel B, we split the sample based on the median value of stock return volatility over the year before the site visit frequency is measured ($Return\_Volatility$). Firms with higher return

volatility have a higher level of information uncertainty (e.g., Jiang, Lee, and Zhang 2005, Zhang 2006). We find that the coefficient on $TobinQ_t \times VisitFreq_t$ is positive and significant only in the subsample with high return volatility. The difference in this coefficient between the high and low subsamples is marginally significant. Taken together, these results provide some evidence that the information channel plays a role in facilitating the disciplinary benefits of site visits.[19]

Table 6 presents the results based on visited-firm-specific characteristics that relate to the monitoring channel. We expect that site visitors' monitoring incentives are stronger among firms with greater agency problems and weaker among firms with alternative monitoring mechanisms. In addition, monitoring should be more effective among firms with higher asset tangibility. We thus split the sample based on the level of agency problem, the degree of asset tangibility, and the strength of alternative monitoring mechanisms. Panel A reports the results based on the level of agency problem (*Agency_Problem*), proxied by related-party accounts receivables at the end of year *t* scaled by lagged total assets. The most distinctive type of agency problem in China is related parties' tunneling of corporate resources using inter-corporate loans (typically reported as "other receivables") (e.g., Jiang, Lee, and Yue 2010, Firth, Lin, Wong, and Zhao 2019). Higher related-party accounts receivables indicate a more severe agency problem. As shown, the coefficient on $TobinQ_t \times VisitFreq_t$ is positive and significant only in the subsample for which *Agency_Problem* is greater than the sample median. The difference in this coefficient between the two subsamples is statistically significant ($p = 0.080$), suggesting that the positive association between site visits and investment efficiency is more pronounced among firms with more severe agency problems.

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[19] We also split the sample into three subsamples and compare the top and bottom tercile groups based on information asymmetry and return volatility. Untabulated results are similar to those reported in Table 5.

Panel B reports the results based on the degree of asset tangibility (*Tangibility*). Site visits are more effective when visited firms have more tangible assets, since their visibility makes visitors more likely to detect investment inefficiencies (e.g., idle product lines or overstocked inventories). Problems with intangible assets, on the other hand, are more difficult for visitors to spot due to greater uncertainty in judging potential returns from intangible asset investments (Cheng et al. 2016, 2019). As shown, the coefficient on $TobinQ_t \times VisitFreq_t$ is significantly positive only for firms with above-median tangible asset ratios. The difference in this coefficient between the two subsamples is statistically significant ($p = 0.000$).

Panel C reports the results based on the strength of alternative monitoring mechanisms. In Equation (1), we control for the effects of alternative monitoring mechanisms on investment efficiency. However, if a firm already has alternative monitoring mechanisms in place, the association between site visits and investment efficiency may be weaker. To test this possibility, we construct a count variable, *Alt_Monitoring*, to measure the overall strength of alternative monitoring mechanisms. Specifically, we consider each alternative monitoring mechanism as relatively strong if the firm has a Big 4 auditor, cross-listing status, top-quintile institutional holdings, top-quintile qualified foreign institutional holdings, top-quintile media coverage, top-quintile supervisory board size, top-quintile analyst coverage, top-quintile analyst forecast accuracy, and is a non-state-owned enterprise, respectively. We then split the sample based on the median value of *Alt_Monitoring*. We find that the coefficient on $TobinQ_t \times VisitFreq_t$ is significantly positive in both subsamples. The difference in this coefficient between the two subsamples is insignificant. Taken together, these results support the notion that the monitoring channel facilitates the disciplinary benefits of site visits. Moreover, due to the unique features of site visits, the disciplinary benefits of site visits may not be diluted or magnified with other monitoring mechanisms.

4.4. Alternative Explanations

In this section, we examine alternative explanations that might confound the interpretation of our results. Cheng et al. (2016, 2019) show that financial analysts and institutional investors obtain information relevant to forecasting and trading activities from site visits. It is possible that information relevant to forecasting and trading overlap with investment-related information, and that such information acquisition can explain the positive association between site visits and investment efficiency. However, we conjecture that information acquisition alone would not be sufficient to produce disciplinary benefits if site visitors lack monitoring incentives or the power to influence management.[20]

To assess our conjecture, we first categorize site visits based on changes in information asymmetry around site visits. If our results are driven by the information benefits documented in Cheng et al. (2016, 2019), then the positive association between site visits and investment efficiency would be more pronounced for visits followed by decreases in information asymmetry than otherwise. We measure information asymmetry using the adverse selection component of monthly bid-ask spread following Lin et al. (1995). $IadecFreq_t$ ($Non\text{-}IadecFreq_t$) is defined as the natural logarithm of 1 plus the total number of visitors from visits in year t around which information asymmetry decreases (increases or does not change).

Panel A of Table 7 reports the results. The coefficient on the interaction between $TobinQ_t$ and $IadecFreq_t$ is insignificant, whereas the coefficient on the interaction between $TobinQ_t$ and $Non\text{-}IadecFreq_t$ is positive and significant, suggesting that visits that do not reduce information asymmetry, as opposed to those that reduce information asymmetry, drive our results. Thus, our

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[20] In addition, information that is useful for financial analysts in updating their forecasts might be different from the investment-related information that is essential for the disciplinary benefits of site visits.

main finding—the positive association between site visits and investment efficiency—cannot be easily inferred from prior studies that demonstrate information benefits for site visits.[21]

We next examine whether other corporate access events (through which market participants can acquire information) also provide disciplinary benefits similar to site visits. We contrast conference calls with site visits because untabulated statistics show that analyst forecast accuracy improves after both conference calls and site visits and that the improvements are comparable between the two types of corporate access events.[22] However, conference calls lack physical inspections and close interactions with lower-level managers and employees, which we believe are essential for the disciplinary benefits of site visits to materialize. If these unique characteristics of site visits are important, investment efficiency after conference calls is unlikely to improve as much as it does after site visits. We thus estimate the regression by including conference call intensity and its interaction with Tobin's Q to compare conference calls and site visits in relation to investment efficiency. $ConfFreq_t$ is measured as the natural logarithm of 1 plus the total number of conference calls in year t.

Panel B of Table 7 reports the results. We find that, unlike site visits, conference calls are not significantly associated with investment efficiency. As conference calls occur more regularly than site visits, the insignificant relation between conference calls and investment efficiency could be driven by the stickiness of conference calls. To mitigate this concern, we also examine the

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[21] In untabulated analyses, we alternatively classify visits based on changes in analyst forecast accuracy. We find that the positive association between site visits and investment efficiency is evident for visits that do not improve analyst forecast accuracy but insignificant for visits that improve analyst forecast accuracy around site visits. Relatedly, we find that this positive association is driven by plant/factory visits (rather than headquarters visits), but the changes in analyst forecast accuracy are statistically indifferent between plant/factory visits and headquarters visits.

[22] The mean value of $\Delta Forecast\_Accuracy$ is 0.274 after conference calls and the corresponding mean value of $\Delta Forecast\_Accuracy$ is 0.244 after site visits. The mean value of $Forecast\_Improvement$ in Table 1 is 0.003, which is different from the mean value of $\Delta Forecast\_Accuracy$ here because $Forecast\_Improvement$ is set to zero for firm years without site visits.

initiations and cessations of conference calls. Untabulated results show that initiations and cessations of conference calls are insignificantly associated with investment efficiency, while initiations of site visits are positively and significantly associated with investment efficiency. The contrasting results between site visits and conference calls further support the notion that the unique features of site visits (such as physical inspections and interactions with the management team) facilitate the disciplinary benefits of site visits.

4.5. Additional Analyses

4.5.1. Instrumental Variables Estimation

Requests for site visits may be an endogenous choice. Changes in local economic conditions may affect site visitors' interest in visiting the firm as well as the firm's investment decisions, leading to a spurious relation between site visits and investment efficiency. Although Section 4.2 outlines several identification tests, we employ the instrumental variables approach to further mitigate endogeneity concerns.

Our instrumental variable is based on exogenously introduced flights in the Metropolitan Statistical Area (MSA) of the visited firm. We carefully construct this instrumental variable so that it is unrelated to changes in local economic conditions that affect firms' investment decisions. Specifically, we obtain data on newly created flights from the Civil Aviation Administration of China, which maintains information about all incoming flights to a given MSA in a given year from other MSAs in China. Since they make travel more convenient and less costly, new flights could lead to an increase in site visits. Our approach is similar to those in Giroud (2013) and Giroud and Mueller (2015). Unlike those studies, which focus on new flights created between headquarters and plants/factories, we identify new flights introduced to the site visit locations from any point of departure within China. To alleviate the concern that new flights may be introduced due to local

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economic growth (which may correlate with local firms' investment decisions), we limit new flights to those introduced due to airline-specific factors. We search news articles on individual new flights and limit our sample to those that were introduced due to airline mergers, airline CEO turnover, and/or airline policy changes. Hence, the final sample of new flights is most likely to be exogenous to local firms' investment decisions.[23] The indicator variable *New Flight* identifies a new flight that was introduced in the MSA where the visited firm is located in a given year due to airline-specific factors.

Because our variable of interest is the interaction between $TobinQ_t$ and $VisitFreq_t$, we employ the control function approach from Wooldridge (2015) to allow more flexibility in restrictive assumptions and parameter choices.[24] We also include abnormal investments in year t-1 (Ab_Invest_{t-1}), measured by abnormal capital expenditure estimated using Equation (5) of Roychowdhury (2006). This abnormal investment measure captures the degree of investment inefficiency in year t-1. If institutional investors and financial analysts are more likely to request site visits when the prevailing investment inefficiency is high, site visits should be positively associated with abnormal investment expenditure. Panel A of Table 8 reports the first-stage results. As predicted, we observe a significantly positive coefficient on *New Flight*, with an F-statistic of 10.620, which is greater than the critical value of 10 for a weak instrument (Stock and Yogo 2005). This suggests that our analyses are not subject to the weak instrumental variable problem. Tests of the relevance and exclusion criteria confirm the validity of this instrumental variable. In particular, the F-statistic for a joint zero-

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[23] In untabulated analyses, we regress new flights on provincial GDP growth along with province and year fixed effects and confirm that our instrumental variable is not significantly correlated with changes in local economic conditions. Despite this evidence, we acknowledge that new flights may not be perfectly exogenous to a firm's investment decisions and suggest that the readers interpret the results with caution.

[24] We thank Professor Wooldridge for his suggestions and for discussing with us the setting where the control function approach adds value. Our results are robust to the traditional IV approach, but the coefficient magnitude in the second stage is much greater than the coefficient magnitude in Table 2, potentially subject to the criticism of Jiang (2017).

exclusion test is significant at the 1% level, indicating a reasonable instrument. The coefficient on *Ab_Invest$_{t-1}$* is also significantly positive, suggesting that institutional investors and financial analysts request more site visits when the prevailing investment inefficiency is high.[25]

Following Wooldridge (2015), we include the residuals estimated from the first-stage determinant model (*Residual_Stage1*) and its interaction with *TobinQ$_t$* in the second stage to control for potential endogeneity. The second-stage results are reported in Panel B of Table 8. We find significantly positive coefficients on the interaction between *TobinQ$_t$* and the instrumented *VisitFreq$_t$* in both columns.[26] These results reinforce the OLS results reported in Table 2 and mitigate the concern that changes in local economic conditions drive both site visits and investment efficiency.

4.5.2. Alternative Model of Investment Efficiency

We also test the robustness of our results using an alternative model of investment efficiency. Specifically, we follow Biddle et al. (2009) and examine the relation between site visits and subsequent investment conditional on whether the firm is more likely to overinvest. This conditional model allows us to identify the association of site visits with underinvestment and overinvestment separately. Untabulated results show that site visits mitigate both underinvestment and overinvestment, supporting the notion that an increase in site visits is associated with an improvement in investment efficiency.[27]

5. Conclusion

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[25] In untabulated analyses, we also find that investment inefficiency in year *t*-1, proxied by *Ab_Invest$_{t-1}$*, leads to a higher likelihood of plant/factory visits in year *t* but it is insignificantly associated with headquarters visits.
[26] Our second-stage results are robust to including *Ab_Invest* as an additional control variable.
[27] The results are available upon requests.

Site visits represent a unique form of corporate access that allows visitors to physically inspect productive resources and meet with onsite employees and executives face-to-face. We posit that, by granting visitors access to investment-related private information and allowing visitors to directly monitor management, site visits help improve corporate investment efficiency. Leveraging data available from mandatory disclosures of site visits in China, we find evidence consistent with our hypothesis. The positive association between site visits and investment efficiency is particularly evident when visitors are able to glean more investment-related information and when they have stronger incentives and greater power to monitor managers. Moreover, this positive association is more pronounced among firms with more severe agency problems and higher asset tangibility.

In supplemental analyses, we find that site visits help improve investment efficiency even when they do not significantly reduce information asymmetry. In addition, conference calls improve analyst forecast accuracy as much as site visits but do not improve investment efficiency. Hence, our findings cannot be easily inferred from prior studies documenting the information benefits of site visits, and other corporate access events may not yield similar disciplinary benefits. Although claiming a strong causal relation in our setting is difficult, we perform three identification tests (coefficient stability, entropy balancing, and initiations and cessations of site visits) to mitigate concerns about correlated omitted variables and functional form misspecification. The analysis based on new flights as an instrumental variable, which is empirically uncorrelated with changes in local economic conditions, also helps mitigate the concern that changes in local economic conditions drive both site visits and firms' investment decisions.

Our findings have policy implications regarding the promotion of various corporate access activities. Investment efficiency is vital for a firm's success and for the sustainable growth of the economy. The evidence that corporate site visits facilitate more efficient investment decisions might

encourage regulators to consider policy guidance that promotes such activities. Nevertheless, we acknowledge that our findings may not be generalizable to other countries such as the U.S. Compared with U.S. firms, Chinese firms generally operate in a weaker monitoring environment due to underdeveloped corporate governance mechanisms. In particular, many forms of corporate access that are common in the U.S. (e.g., investor conferences and analyst/investor days) are not widely available for Chinese firms. Accordingly, although site visits provide a unique and valuable opportunity for market participants to perform the monitoring function, whether site visits can significantly influence investment efficiency for firms operating in developed economies awaits future research.

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We conducted five individual interviews with three fund managers, one sell-side analyst, and one senior executive to obtain a comprehensive understanding of institutional details of site visits in China. We had open-ended discussions with each of the interviewees about the usefulness of site visits and how firms treat requests for site visits and handle visitors' questions during them. We present a non-exhaustive list of questions asked during the interviews below, followed by an interviewee-approved summary of the interview notes (translated from Chinese).

List of questions asked during the interviews:

For fund managers and analysts:
1. Why do you spend time visiting corporate sites? Can you obtain investment-related or production-related information there? Could you provide examples?
2. If you do not participate in site visits, can you obtain the same information through other venues like financial reports, conference calls, or investor days?
3. Can visitors talk to employees? Does such conversation take place in front of the managers (so employees may feel reluctant to reveal negative information)?
4. Do you think firms may hide information, i.e., selectively disclose, during site visits?
5. Do you initiate the visits, or do the firms invite you?
6. Do firms have to accommodate your visit requests, or can firms deny visitors' requests? How long does it normally take for them to schedule your visit? Can you request the visit to take place in factories or headquarters?

For executives:
7. Do you initiate site visits, or do investors initiate them?
8. Do you have to accommodate visit requests? How long does it normally take for you to schedule site visits? On average, how long is the period from a requesting date to a visiting date?
9. Do you choose the site visit location (such as plant or headquarters) or visitors choose the visiting location?
10. Do you allow visitors to talk with employees freely?
11. How do you value visitors' opinions or questions during site visits?
12. In your opinion, how are site visits different from conference calls or investor days?
13. What are the downsides or costs of site visits to the firm?

Interviewee 1: Fund manager, Ph.D.
has held the position since 2015, phone interview conducted on April 2, 2018

Remarks on institutional details of site visits:
Site visits are routine in my job as a fund manager. I work for a big investment fund, and we have enough resources to go anywhere we want to visit. A site visit normally lasts one day, but it can

also last more than one day. When I request a site visit, I normally can pay the visit the next day or within three days.

I select firms to visit based on several considerations. I choose firms with high information uncertainty. I also choose firms based on industries I specialized in, and I like to see a variety of firms in those industries, including both large and small firms in those industries. The visited firms can be ones we already invest in or are potentially interested in investing.

Occasionally, firms invite us to visit right before some major events (e.g., M&A and SEO), but most site visits are initiated by us. Whether visitors choose headquarters or plants/factories is more of personal preference or depends on their expertise. Some visitors do not know much about general production processes and are not interested in visiting production lines. These fellows prefer to visit headquarters to directly interact with executives. Plant/factory visits provide more information about the production and allow us to meet middle-level managers or sometimes senior executives. In headquarters visits, the opportunity to meet with C-suite executives is almost guaranteed.

Remarks on acquiring investment-related information during site visits:
Before I pay the visit, my team and I will prepare well by reviewing financial statements. I, personally, strongly believe that the more you prepare before you go, the more you can get out of site visits.

A site visit is different from a conference call because we can observe a lot of things. Visiting factories is definitely helpful. Issues related to production, investment, and inventory overstock concern us the most. We can also identify other useful information. For example, what cars are managers driving? How skillful are the factory employees when they run the production facility? All this information can help us assess the quality of the firms, including the efficiency of the management team, the financial health of the firm, and production efficiency. Overall, I look for information that I cannot find through financial reports or phone calls.

I can ask questions during the tour, and get some immediate answers during the tour. If any questions are not answered during the tour, I can bring them up again in the following Q&A session. In the pre-tour session, management will go over some routine financial information from the quarterly report. This is more of a formality and is useless to us. However, managers may talk about new products they plan to introduce. This will really help us focus on checking related information during the subsequent tour.

During site visits, I can not only acquire new information but also confirm the accuracy of the information I know. For example, if I heard a firm has sales growth, I want to see what type of sales growth, which product drives sales growth. When a firm has more concentrated product lines, it is easy for me to check. If multiple production lines are spread out in different locations, or the firms have many segments, I may need to visit multiple locations/segments to make a sound judgment.

Selective disclosure is expected. If I feel that the firm is hiding something, I will request to see more during a tour. They normally do not deny my request. If I feel it is very suspicious, we will also look for alternative information sources such as visiting their customers, suppliers, and retail stores.

Remarks on the process that firms respond to visitors' opinions:
If I see something wrong onsite, I will first try to work with the firm management to solve the problem. We will also have an in-house discussion with our asset management team to evaluate how serious the issue is. If managers do not respond, and we believe the issue is serious, we will sell the firm's stock. In most cases, management listens to us carefully and responds to our questions seriously. The CEO of the visited firm may pay a visit back to our asset management team to explain what was going on and present the plan to solve the problem raised in the site visit. If they don't react to our questions, it is normally the case that they cannot solve the problem we raised. SOEs respond to our questions slowly; they need to report to the government and wait for guidance or approval from government officials. Non-SOEs are on average quicker since they make decisions themselves. In summary, depending on how serious the issues and how responsive the managers, we make a decision whether to keep the holding or sell it.

Interviewee 2: Fund manager, Ph.D.
has held the position since 2013, phone interview conducted on April 5, 2018

Remarks on acquiring investment-related information during site visits:
During site visits, I can obtain information in several ways. First, physical inspection is really helpful in assessing the firms' production efficiency. I like to compare a firm's current production and investment conditions with historical data to see if everything is on the right track. Second, we obtain information from interacting with senior executives. Third, I also obtain information from communicating with middle-level managers or facility workers. Sometimes, discrepancies in these two types of interactions, that is, senior managers versus employees, can give us interesting and unique information about the firm. It is interesting that sometimes we can discover more negative news through facility workers.

Conference calls give much less information compared to site visits. For example, during a site visit, I can find the exact size of an expanded plant. When talking to managers face to face, I trust their words more than just talking over the phone.

If we prepare well before our visits, it is not difficult for us to figure out a firm's overproduction or overinvestment onsite. Overproduction can be observed not just through checking equipment running records or maintenance records. It can be detected through many other things. For example, when I visit a plant, I like to compare their water utility growth to infer their production or investment expansion, which gives insights beyond observing the equipment.

Firms do engage in selective disclosure onsite, and we can tell. So when we question employees and mid-level managers during a tour, we tend to randomly select people to ask.

Remarks on the process that firms respond to visitors' opinions:
When I find something is wrong, I will inquire about management. If I cannot get a satisfactory answer, we will file an official request to the management team or just sell the stock.

We normally know managers' future investment plans. If we think the firm is in the shape of overproduction, we will communicate with them and suggest that they should not pursue their plans.

Interviewee 3: Fund manager, M.S.
has held the position since 2011, phone interview conducted on April 6, 2018

Remarks on institutional details of site visits:
When I request site visits, they are approved within days and firms are quite accommodating. I can request to go to either the plant or headquarters; firms normally approve both. When I go to site visits, it is not just about acquiring information, that I don't know, but also verifying news I already know. I feel that the latter is also important, as I may obtain some details of the news I heard of before.

Remarks on the process that firms respond to visitors' opinions:
Our strategy is that, if we find something important onsite, we will communicate with large shareholders, since they are more powerful in influencing management. Large shareholders can vote against any investment plans during shareholder meetings. We can take action as well. If managers do not make corresponding changes, we will consider selling the stakes in the firm.

Interviewee 4: Sell-side analyst, M.S.
has held the position since 2015, phone interview conducted on April 1, 2018

Remarks on institutional details of site visits:
When I request a site visit, it can be approved within one day (longest waiting time for me is around 20 days). Firms only reject us when executives are sick or on leave, but you can request again, and it will normally be approved shortly. So I think that firms typically delay our visiting requests due to the busy schedules of executives, and less likely due to the incentive to hide information. On rare occasions, firms initiate site visits before they launch a new product or raise capital.

We are free to choose to visit either the plant or headquarters, depending on the scheduled date. I don't think firms can lure us to choose one over the other in order to hide information.

Remarks on acquiring investment-related information during site visits:
Conference calls are regularly scheduled for some corporate events, such as quarterly earnings. However, site visits can happen whenever we are interested. So, we can visit firms whenever we want, rather than waiting for scheduled events. Site visits are a routine job for analysts, and when we go onsite, we can see the efficiency of production and management. For example, I remember there was a synthetic leather manufacturer in the city of Qidong. The manufacturer tried to

aggressively expand the production to lower fixed costs as there was a strong market demand for synthetic leather. However, the market demand changed so fast that the firm immediately fell into the situation of overproduction. Management tends to be overconfident and is slow to correct mistakes in subsequent periods. We need to check on the sites in a timely fashion to see what is going on inside the firms.

An onsite tour is critical in site visits. There is more informational benefit to visiting a long-distance plant, although the traveling cost is high. We read financial statements before site visits to gain a basic understanding of the firms' financial profitability and industry outlook. During site visits, we can talk to any random employees and pose questions. I think selective disclosure has recently become more difficult and riskier for firms. CSRC exerts great effort to prevent selective disclosure and takes complaints from visitors seriously.

Remarks on the process that firms respond to visitors' opinions:
We need industry knowledge to figure out whether a firm is doing right or wrong things, particularly in the auto industry, one of the industries that I specialized in. For example, when I visited a car manufacturer, I found the equipment utilization to be very low. However, I understand it was not due to overinvestment at that time, because the market demand for cars was temporarily hampered for a reason. Managers typically put less weight on sell-side analysts' opinions, but we normally pass information to influential stakeholders, like large shareholders. SOEs are more bureaucratic, and hence less efficient in addressing the questions we raise.

Interviewee 5: Senior executive, M.S.
has held the position since 2008, phone interview conducted on April 2, 2018

Remarks on institutional details of site visits:
When visitors request onsite visits, it is possible to host them next day or even on the same day. can visit us anytime as long as they don't require a meeting with top executives. When they need to meet our CEO, CFO, and/or chairmen, we may need time to schedule because we need to find a date when top executives are available. But we will try our best to respond promptly.

We prefer visitors to visit both the headquarters and the plant. But each site visit is scheduled in only one location. If visitors want to visit both the headquarters and the plant, they need to request two visits separately. We rarely initiate site visits, but we typically invite people to come when we have expected SEOs or before shareholder meetings.

Remarks on acquiring investment-related information during site visits:
Visitors can visit our plant and see our manufacturing, equipment, production, and automation conditions. Conference calls provide more limited information than site visits. There are some questions that we cannot answer immediately on conference calls due to time limitations. Site visits differ because they last longer, typically one or two days, and the visitor can find the information somewhere during a tour or post-Q&A. In addition, we might be able to find the answers for visitors before they depart or follow up after site visits.

During the pre-tour session with visitors, we discuss both good news and bad news. We need to disclose bad news because site visits provide an opportunity for us to explain to visitors what was going on and minimize panic. We would rather take advantage of this opportunity instead of avoiding negative news. Plus, if investors find out negative news online by themselves without our explanation, the negative impact could be magnified. Of course, we like to disclose good news. Naturally, we all like to draw people's attention to good news, so we also want to spread good news during site visits.

Visitors can talk to employees anytime. If the visitors have questions during the tour, the board secretary can remotely pass the message to the facility operators and get the answers. Or, the board secretary can note the questions and get back to visitors later on. I don't think our firm needs to disclose selectively during site visits.

Remarks on the process that firms respond to visitors' opinions:
Visitors raise questions to us in a very straightforward way, and many suggest that we make changes based on their observations onsite. Most firms have a procedure to handle visitor questions. Typically, the tour guide first sorts the unaddressed questions raised during the tour into different functional divisions (e.g., purchasing department, logistics department, etc.), and then lets each division's managers provide responses. For questions that division managers do not have authority to answer or questions that cannot be sorted into a particular division, these questions are submitted to the next scheduled board meeting following site visits for the CEO and board members to discuss. Afterward, we respond to visitors either publicly or privately to ease their concerns and make corresponding changes if we can. If we can't make changes, visitors may raise the questions again in annual shareholder meetings. To be fair, not all visitors raise insightful suggestions, but we try to respond in a responsible and timely way.

We treat visitors equally regardless of whether they are large or small shareholders. Personally, I rather treasure small shareholders' opinions because the majority of shareholders are small shareholders. Large shareholders have their own interests, which may be different from the majority of shareholders.

APPENDIX B
Variable Definitions

Dependent variables	
Investment$_{t+1}$	= investment expenditure in year $t+1$ defined as cash payments for fixed assets, intangible assets, and other long-term assets from the cash flow statement minus cash receipts from selling these assets, scaled by lagged total assets.
Independent variables	
TobinQ$_t$	= sum of market value of tradable shares, book value of non-tradable shares and liabilities, divided by the book value of total assets.
VisitFreq$_t$	= natural logarithm of 1 plus the total number of site visitors in year t (i.e., the headcount of investors and analysts who participated in site-visit events in year t).
Control variables in the baseline models	
Big4$_t$	= an indicator variable that equals 1 if the firm is audited by one of the Big 4 accounting firms in year t, and 0 otherwise.
CrossList$_t$	= an indicator variable that equals 1 if the firm is cross-listed on a non-China mainland stock exchange in year t, and 0 otherwise.
Institutional_Holding$_t$	= proportion of shares held by institutional investors at the end of year t.
Foreign_Holding$_t$	= an indicator variable that equals 1 if the firm has qualified foreign institutional investors in year t, and 0 otherwise. The Qualified Foreign Institutional Investor is a program that allows specific licensed international investors to participate in mainland China's stock exchanges.
Media_Coverage_Rank$_t$	= decile rank of media coverage within the same year and CSRC industry, where the media coverage is the natural logarithm of 1 plus the total number of media covering the firm in year t.
Central_SOE$_t$	= an indicator that equals 1 if the firm's controlling shareholder is a central government in year t, and 0 otherwise.
Local_SOE$_t$	= an indicator that equals 1 if the firm's controlling shareholder is a local government agency or local government-controlled enterprise at the provincial, municipal, or county level in year t, and 0 otherwise.
Supervisors$_t$	= natural logarithm of 1 plus the total number of supervisors on the supervisory board in year t.
Analyst_Coverage_Rank$_t$	= decile rank of analyst coverage within the same year and CSRC industry, where analyst coverage is the natural logarithm of 1 plus the number of analysts who issued at least one earnings forecast for the firm in year t but did not visit the firm.
Accuracy_Rank$_t$	= decile rank of the forecast accuracy which is the absolute value of the difference between the median of analysts' estimates and

	actual earnings per share for year t scaled by the stock price at the beginning of year t and multiplied by -100.
M-index$_t$	= the first principal component of the ten monitoring variables (*Big4*, *CrossList*, *Institutional_Holding*, *Foreign_Holding*, *Media_Coverage_Rank*, *Central_SOE*, *Local_SOE*, *Supervisors*, *Analyst_Coverage_Rank*, and *Accuracy_Rank*).
CFO$_t$	= cash flow from operations scaled by average total assets at the beginning and end of year t.
Leverage$_t$	= total debt at the end of year t scaled by lagged total assets.
SEO$_t$	= cash proceeds from seasoned equity offerings in year t scaled by lagged total assets.
LogAsset$_t$	= natural logarithm of total assets at the end of year t.
Age$_t$	= natural logarithm of 1 plus the number of years that the firm has been listed on a stock exchange until year t.
Stock_Return_Volatility$_t$	= standard deviation of daily stock returns in year t.
Tangibility$_t$	= decile rank of the ratio of tangible assets to the sum of tangible and intangible assets at the end of year t.
HHI$_t$	= Herfindahl sales index which is the sum of the squares of sales of firms within a CSRC industry during year t.
Accruals_Quality$_t$	= absolute value of abnormal accruals multiplied by -1 at the end of year t, following the Dechow and Dichev (2002) model, as modified by Ball and Shivakumar (2005).

TABLE 1

Descriptive Statistics

Panel A: Summary statistics of variables in the baseline models

Variable	N	Mean	SD	Q10	Median	Q90
$Investment_{t+1}$	13,247	0.058	0.065	0.003	0.038	0.137
$TobinQ_t$	13,247	2.207	1.416	1.120	1.743	3.775
$VisitFreq_t$	13,247	1.893	1.648	0.000	1.946	4.094
$Big4_t$	13,247	0.029	0.169	0.000	0.000	0.000
$CrossList_t$	13,247	0.009	0.095	0.000	0.000	0.000
$Institutional\_Holding_t$	13,247	0.034	0.010	0.019	0.038	0.043
$Foreign\_Holding_t$	13,247	0.072	0.258	0.000	0.000	0.000
$Media\_Coverage\_Rank_t$	13,247	0.541	0.293	0.100	0.500	0.900
$Central\_SOE_t$	13,247	0.017	0.129	0.000	0.000	0.000
$Local\_SOE_t$	13,247	0.265	0.442	0.000	0.000	1.000
$Supervisors_t$	13,247	1.581	0.249	1.386	1.386	1.946
$Analyst\_Coverage\_Rank_t$	13,247	0.519	0.316	0.100	0.500	0.900
$Accuracy\_Rank_t$	13,247	0.424	0.343	0.000	0.400	0.900
$M\text{-}index_t$	13,247	0.013	1.371	-1.613	-0.089	1.714
CFO_t	13,247	0.047	0.092	-0.053	0.045	0.150
$Leverage_t$	13,247	0.403	0.210	0.132	0.388	0.693
SEO_t	13,247	0.083	0.313	0.000	0.000	0.200
$LogAsset_t$	13,247	21.832	1.108	20.530	21.714	23.311
Age_t	13,247	1.980	0.772	0.693	1.946	2.996
$Stock\_Return\_Volatility_t$	13,247	0.030	0.009	0.020	0.028	0.044
$Tangibility_t$	13,247	4.833	2.603	1.000	5.000	9.000
HHI_t	13,247	0.044	0.057	0.012	0.017	0.118
$Accruals\_Quality_t$	13,247	-0.042	0.059	-0.098	-0.030	-0.003

Panel B: Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1.Investment$_{t+1}$		0.039***	0.143***	0.011	0.004	0.033***	0.022**	0.080***	0.004	-0.062***	-0.035***	0.205***
2.TobinQ$_t$	0.025***		0.049***	-0.099***	-0.086***	-0.076***	0.008	-0.061***	0.027***	-0.165***	-0.072***	-0.008
3.VisitFreq$_t$	0.094***	-0.013		0.056***	0.017**	0.031***	0.103***	0.187***	-0.017**	-0.079***	-0.050***	0.453***
4.Big4$_t$	0.009	-0.066***	0.056***		0.172***	0.133***	0.055***	0.128***	0.040***	0.078***	0.079***	0.112***
5.CrossList$_t$	-0.012	-0.049***	0.017*	0.172***		0.088***	0.026***	0.106***	-0.013	0.074***	0.036***	0.051***
6.Institutional_Holding$_t$	0.024***	0.029***	0.025***	0.104***	0.070***		0.103***	0.184***	0.107***	0.355***	0.163***	0.097***
7.Foreign_Holding$_t$	0.016*	0.005	0.104***	0.055***	0.026***	0.092***		0.110***	0.016*	0.070***	0.015*	0.156***
8.Media_Coverage_Rank$_t$	0.072***	-0.028***	0.188***	0.128***	0.106***	0.182***	0.110***		0.010	0.146***	0.113***	0.304***
9.Central_SOE$_t$	0.006	0.021**	-0.017**	0.040***	-0.013	0.090***	0.016*	0.009		-0.079***	0.090***	-0.003
10.Local_SOE$_t$	-0.057***	-0.099***	-0.081***	0.078***	0.074***	0.349***	0.070***	0.146***	-0.079***		0.275***	-0.059***
11.Supervisors$_t$	-0.031***	-0.041***	-0.054***	0.086***	0.031***	0.169***	0.015*	0.121***	0.100***	0.292***		-0.041***
12.Analyst_Coverage_Rank$_t$	0.149***	-0.058***	0.458***	0.110***	0.049***	0.077***	0.154***	0.300***	-0.003	-0.061***	-0.038***	
13.Accuracy_Rank$_t$	0.198***	0.086***	0.359***	0.042***	-0.006	0.068***	0.078***	0.125***	-0.003	-0.065***	-0.055***	0.420***
14.M-index$_t$	0.095***	-0.052***	0.271***	0.402***	0.288***	0.582***	0.344***	0.621***	0.084***	0.478***	0.376***	0.522***
15.CFO$_t$	0.165***	0.093***	0.107***	0.069***	0.010	0.075***	0.082***	0.088***	0.003	0.034***	0.030***	0.140***
16.Leverage$_t$	-0.092***	-0.211***	-0.064***	0.090***	0.084***	0.232***	0.013	0.179***	0.034***	0.279***	0.153***	-0.075***
17.SEO$_t$	0.130***	0.174***	-0.000	-0.028***	-0.022**	-0.002	-0.026***	0.010	-0.001	-0.059***	0.004	-0.033***
18.LogAsset$_t$	-0.071***	-0.413***	0.228***	0.242***	0.160***	0.306***	0.130***	0.407***	0.013	0.289***	0.171***	0.368***
19.Age$_t$	-0.231***	0.024***	-0.114***	0.113***	0.063***	0.302***	0.057***	0.177***	0.036***	0.439***	0.227***	-0.147***
20.Stock_Return_Volatility$_t$	0.009	0.361***	0.019**	-0.071***	-0.034***	-0.073***	-0.045***	-0.015*	-0.003	-0.101***	-0.031***	-0.090***
21.Tangibility$_t$	0.027***	-0.058***	-0.067***	0.029***	-0.006	0.097***	0.014	0.002	0.029***	0.123***	0.080***	-0.050***
22.HHI$_t$	-0.033***	-0.039***	-0.062***	0.002	-0.024***	0.134***	-0.001	-0.011	-0.021**	0.134***	0.025***	-0.037***
23.Accruals_Quality	0.053***	-0.054***	0.007	-0.010	0.013	-0.003	-0.007	-0.041***	0.010	0.020**	-0.013	-0.037***

	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
1.Investment$_{t+1}$	0.258***	0.137***	0.214***	-0.147***	0.116***	-0.081***	-0.282***	-0.014	0.003	-0.088***	0.037***
2.TobinQ$_t$	0.148***	-0.076***	0.128***	-0.310***	0.114***	-0.483***	-0.098***	0.397***	-0.090***	-0.112***	-0.086***
3.VisitFreq$_t$	0.377***	0.270***	0.119***	-0.053***	0.072***	0.220***	-0.123***	0.010	-0.062***	-0.050***	-0.030***
4.Big4$_t$	0.045***	0.266***	0.071***	0.093***	-0.032***	0.189***	0.118***	-0.079***	0.028***	0.018**	-0.020**
5.CrossList$_t$	-0.004	0.154***	0.014	0.084***	-0.023***	0.107***	0.065***	-0.037***	-0.003	-0.035***	0.011
6.Institutional_Holding$_t$	0.092***	0.586***	0.112***	0.205***	-0.017*	0.320***	0.258***	-0.098***	0.110***	0.141***	0.006
7.Foreign_Holding$_t$	0.081***	0.307***	0.083***	0.015*	-0.030***	0.119***	0.058***	-0.042***	0.015*	-0.000	-0.017**
8.Media_Coverage_Rank$_t$	0.134***	0.633***	0.091***	0.183***	0.038***	0.391***	0.186***	-0.020**	0.003	0.005	-0.062***
9.Central_SOE$_t$	-0.003	0.089***	-0.005	0.034***	-0.005	0.013	0.036***	0.006	0.029***	-0.014	0.002
10.Local_SOE$_t$	-0.065***	0.476***	0.036***	0.274***	-0.058***	0.272***	0.452***	-0.101***	0.114***	0.154***	0.015*
11.Supervisors$_t$	-0.056***	0.351***	0.017**	0.143***	-0.005	0.148***	0.224***	-0.027***	0.071***	0.032***	-0.002
12.Analyst_Coverage_Rank$_t$	0.450***	0.529***	0.156***	-0.059***	0.049***	0.360***	-0.154***	-0.091***	-0.044***	-0.026***	-0.085***
13.Accuracy_Rank$_t$		0.407***	0.215***	-0.148***	0.113***	0.091***	-0.216***	0.017**	-0.051***	-0.011	-0.001
14.M-index$_t$	0.375***		0.189***	0.213***	0.027***	0.512***	0.263***	-0.104***	0.062***	0.087***	-0.053***
15.CFO$_t$	0.193***	0.176***		-0.157***	0.006	0.041***	0.001	-0.011	0.061***	-0.042***	-0.008
16.Leverage$_t$	-0.163***	0.216***	-0.166***		0.049***	0.484***	0.407***	-0.053***	0.128***	0.131***	-0.028***
17.SEO$_t$	0.058***	-0.024***	0.036***	-0.019**		0.024***	-0.045***	0.198***	-0.024***	-0.031***	-0.035***
18.LogAsset$_t$	0.074***	0.555***	0.036***	0.479***	-0.067***		0.452***	-0.230***	0.066***	0.038***	-0.057***
19.Age$_t$	-0.209***	0.273***	0.016*	0.414***	-0.029***	0.439***		-0.159***	0.070***	0.092***	-0.028***
20.Stock_Return_Volatility$_t$	0.028***	-0.108***	0.005	-0.045***	0.236***	-0.196***	-0.148***		-0.042***	-0.057***	-0.046***
21.Tangibility$_t$	-0.058***	0.062***	0.034***	0.136***	-0.030***	0.084***	0.079***	-0.048***		0.014	-0.002
22.HHI$_t$	-0.026***	0.057***	-0.025***	0.152***	-0.017*	0.107***	0.172***	-0.017**	0.035***		0.003
23.Accruals_Quality$_t$	0.042***	-0.015*	-0.016*	-0.052***	-0.055***	-0.035***	-0.082***	-0.031***	-0.001	-0.016*	

Notes: This table presents the descriptive statistics of variables in the baseline models. Panel A shows the summary statistics and Panel B shows the correlations. Pearson (Spearman) correlations are above (below) the diagonal. See Appendix B for detailed variable definitions. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

TABLE 2
Site Visits and Investment Efficiency

Dependent variable =	(1) $Investment_{t+1}$	(2) $Investment_{t+1}$
$TobinQ_t$	0.005**	0.003***
	(2.14)	(3.64)
$VisitFreq_t$	0.001	0.001**
	(1.61)	(2.43)
$TobinQ_t \times VisitFreq_t$	0.001**	0.001**
	(2.01)	(2.49)
$Big4_t$	-0.001	
	(-0.16)	
$TobinQ_t \times Big4_t$	0.000	
	(0.09)	
$CrossList_t$	-0.009	
	(-0.46)	
$TobinQ_t \times CrossList_t$	0.000	
	(0.05)	
$Institutional\_Holding_t$	0.224	
	(1.46)	
$TobinQ_t \times Institutional\_Holding_t$	-0.086	
	(-1.32)	
$Foreign\_Holding_t$	0.001	
	(0.29)	
$TobinQ_t \times Foreign\_Holding_t$	-0.002	
	(-1.49)	
$Media\_Coverage\_Rank_t$	0.004	
	(1.22)	
$TobinQ_t \times Media\_Coverage\_Rank_t$	0.006***	
	(2.92)	
$Central\_SOE_t$	-0.013	
	(-1.16)	
$TobinQ_t \times Central\_SOE_t$	0.009**	
	(2.02)	
$Local\_SOE_t$	-0.010	
	(-1.48)	
$TobinQ_t \times Local\_SOE_t$	-0.002	
	(-1.39)	
$Supervisors_t$	-0.005*	
	(-1.82)	
$TobinQ_t \times Supervisors_t$	0.003	
	(1.18)	
$Analyst\_Coverage\_Rank_t$	0.016***	
	(4.22)	
$TobinQ_t \times Analyst\_Coverage\_Rank_t$	0.002	
	(1.04)	
$Accuracy\_Rank_t$	0.012***	

	(6.31)	
$TobinQ_t \times Accuracy\_Rank_t$	0.000	
	(0.04)	
$M\text{-}index_t$		0.005***
		(5.11)
$TobinQ_t \times M\text{-}index_t$		0.001**
		(1.96)
CFO_t	0.028***	0.031***
	(3.95)	(4.24)
$Leverage_t$	-0.032***	-0.036***
	(-4.44)	(-5.07)
SEO_t	0.023***	0.024***
	(7.89)	(8.16)
$LogAsset_t$	-0.012***	-0.010***
	(-5.33)	(-4.54)
Age_t	-0.030***	-0.033***
	(-9.89)	(-10.64)
$Stock\_Return\_Volatility_t$	-0.154	-0.175*
	(-1.50)	(-1.71)
$Tangibility_t$	-0.004***	-0.004***
	(-8.27)	(-8.24)
HHI_t	0.030	0.031
	(1.26)	(1.31)
$Accruals\_Quality_t$	0.026***	0.025***
	(2.88)	(2.80)
Firm FE	Yes	Yes
Year FE	Yes	Yes
Observations	13,247	13,247
Adj.R^2	0.42	0.42

Notes: This table examines the relation between site visits and subsequent investment efficiency. See Appendix B for detailed variable definitions. *t*-statistics are reported in brackets and standard errors are robust to heteroskedasticity and clustered at the firm level. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

TABLE 3
Identification Tests

Panel A: Unobservable selection and coefficient stability

	R^2 without controls	R^2 with controls	γ	R_{max}	δ
Model 1	0.001	0.506	1.3	0.658	1.547
Model 2	0.001	0.501	1.3	0.651	3.034

Panel B: Entropy balancing

Dependent variable =	$Investment_{t+1}$
$TobinQ_t$	0.002***
	(2.80)
$VisitFreq_t$	0.001
	(1.63)
$TobinQ_t \times VisitFreq_t$	0.001***
	(2.77)
Controls	Yes
Firm FE	Yes
Year FE	Yes
Observations	13,247
Adj.R^2	0.49

Panel C: Initiation of visits

	(1)	(2)
Dependent variable =	$Investment_{t+1}$	$Investment_{t+1}$
$TobinQ_t$	0.001*	0.002**
	(1.92)	(2.35)
$Initiation\_Visit_t$	-0.012***	-0.008**
	(-3.23)	(-2.21)
$TobinQ_t \times Initiation\_Visit_t$	0.004***	0.004***
	(2.99)	(3.07)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	No	Yes
Observations	13,247	13,247
Adj.R^2	0.41	0.42

Panel D: Cessation of visits

Dependent variable =	(1) Investment$_{t+1}$	(2) Investment$_{t+1}$
TobinQ$_t$	0.003***	0.003***
	(3.29)	(3.54)
Cessation_Visit$_t$	0.005	0.004
	(1.44)	(1.02)
TobinQ$_t$×Cessation_Visit$_t$	-0.002	-0.002
	(-1.38)	(-1.23)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	No	Yes
Observations	13,247	13,247
Adj.R^2	0.41	0.42

Notes: This table presents the results of identification tests to verify the relation between site visits and subsequent investment efficiency. Model 1 (Model 2) in Panel A refers to the regression model in column (1) (column (2)) of Table 2 with ten alternative monitoring proxies separately (with M-index). In Panels B-D, we estimate the model with M-index as in column (2) of Table 2 for parsimony. In Panel A, we assess bias from correlated omitted variables (Altonji et al. 2005, Oster 2019). *Rmax* is the *R*-squared from a hypothetical regression of a dependent variable on the treatment variable, observed controls, and unobserved controls, which should equal 1.3×the *R*-squared for the OLS regression model that includes observable control variables. δ, a coefficient of proportionality, is calculated using information from movement in the coefficient of interest and explanatory power (*R*-squared) of linear regression models with and without controls. A δ greater than 1 suggests coefficient stability (i.e., robust result). In Panel B, we conduct entropy balancing by creating a counterfactual control group in which we assign a weight (between 0 and 1) to each control observation, such that the variables we include as matching dimensions are balanced between site visits and non-site visits (Hainmueller 2012, Hainmueller and Xu 2013). After removing the significant differences in means and variances between the site visits and non-site visits samples, we re-estimate the baseline regression models using the entropy balanced sample. In Panel C, we examine the impact of initiations of site visits on a firm's investment efficiency. *Initiation_Visit$_t$* is an indicator variable that equals 1 for the year of site visit initiation and all subsequent years before a stop, and 0 otherwise. To qualify as a site visit initiation, the firm must have at least 2 consecutive years without site visits followed by 2 or more consecutive years with site visits. In Panel D, we examine the impact of cessation of site visits on a firm's investment efficiency. *Cessation_Visit$_t$* is an indicator variable that equals 1 for the year of site visit cessation and all subsequent years before site visit starts (again), and 0 otherwise. To qualify as a site visit cessation, the firm must have at least 2 consecutive years with site visits followed by 2 or more consecutive years without site visits. *t*-statistics are reported in brackets and standard errors are robust to heteroskedasticity and clustered at the firm level. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

TABLE 4

Cross-sectional Analyses based on Visit-specific Characteristics

Panel A: Plant/factory versus headquarters visits

Dependent variable =	$Investment_{t+1}$
$TobinQ_t$	0.002*
	(1.74)
$PlantFreq_t$	-0.004***
	(-2.74)
$TobinQ_t \times PlantFreq_t$	0.002***
	(2.68)
$HeadquartersFreq_t$	0.001
	(1.08)
$TobinQ_t \times HeadquartersFreq_t$	0.000
	(1.14)
Controls	Yes
Firm FE	Yes
Year FE	Yes
Observations	13,247
Adj.R^2	0.42

Panel B: Visitors' monitoring Incentive

Dependent variable =	$Investment_{t+1}$
$TobinQ_t$	0.002**
	(2.09)
$HighIncentiveFreq_t$	0.001
	(1.10)
$TobinQ_t \times HighIncentiveFreq_t$	0.001**
	(2.32)
$LowIncentiveFreq_t$	0.001**
	(2.47)
$TobinQ_t \times LowIncentiveFreq_t$	0.000
	(0.80)
Controls	Yes
Firm FE	Yes
Year FE	Yes
Observations	13,247
Adj.R^2	0.42

Notes: This table presents cross-sectional analyses based on visit-specific characteristics. In Panel A, $PlantFreq_t$ is the natural logarithm of 1 plus the total number of visitors from site visits to the plant/factory of the visited firm in year t. $HeadquartersFreq_t$ is the natural logarithm of 1 plus the total number of visitors from site visits to the headquarters of the visited firm in year t. In Panel B, $HighIncentiveFreq_t$ is the natural logarithm of 1 plus the total number of visitors from site visits with at least one visitor from an institution that holds the visited firm's shares in year t. $LowIncentiveFreq_t$ is the natural logarithm of 1 plus the total number of visitors from site visits with no visitors from institutions that hold the visited firm's shares in year t. t-statistics are reported in brackets and standard errors are robust to heteroskedasticity and clustered at the firm level. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

TABLE 5
Cross-sectional Analyses based on Visited-firm-specific Characteristics: Information

Panel A: Information asymmetry

	(1)	(2)
	High Info_Asymmetry	*Low Info_Asymmetry*
Dependent variable =	*Investment$_{t+1}$*	*Investment$_{t+1}$*
TobinQ$_t$	0.003**	0.003**
	(2.40)	(2.55)
VisitFreq$_t$	0.002**	0.001
	(2.16)	(0.95)
TobinQ$_t$×VisitFreq$_t$	0.001*	0.001*
	(1.70)	(1.70)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
Observations	6,568	6,264
Adj.R^2	0.41	0.41
Difference between coefficients	(2)-(1)	*p-value*
TobinQ$_t$×VisitFreq$_t$	-0.000	0.440

Panel B: Return volatility

	(1)	(2)
	High Return_Volatility	*Low Return_Volatility*
Dependent variable =	*Investment$_{t+1}$*	*Investment$_{t+1}$*
TobinQ$_t$	0.002**	0.004***
	(2.19)	(2.88)
VisitFreq$_t$	0.001	0.001**
	(1.63)	(2.20)
TobinQ$_t$× VisitFreq$_t$	0.001**	0.000
	(2.06)	(0.91)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
Observations	6,446	6,383
Adj.R^2	0.43	0.40
Difference between coefficients	(2)-(1)	*p-value*
TobinQ$_t$×VisitFreq$_t$	-0.000	0.100

Notes: This table presents cross-sectional analyses based on visited-firm-specific characteristics related to the information mechanisms. In Panel A, the sample is split by the median value of the adverse selection component of bid-ask spread (*Info_Asymmetry*). In Panel B, the sample is split by the median value of stock return volatility over the year before the site visit frequency is measured (*Return_Volatility*). *t*-statistics are reported in brackets and standard errors are robust to heteroskedasticity and clustered at the firm level. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

TABLE 6
Cross-sectional Analyses based on Visited-firm-specific Characteristics: Monitoring

Panel A: Agency problem

	(1)	(2)
	High Agency_Problem	*Low Agency_Problem*
Dependent variable =	*Investment$_{t+1}$*	*Investment$_{t+1}$*
TobinQ$_t$	0.004***	0.002*
	(3.27)	(1.84)
VisitFreq$_t$	0.001	0.001**
	(1.05)	(2.08)
TobinQ$_t$×VisitFreq$_t$	0.001**	0.000
	(2.00)	(1.11)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
Observations	6,318	6,494
Adj.R^2	0.39	0.46
Difference between coefficients	(2)-(1)	*p-value*
TobinQ$_t$×VisitFreq$_t$	-0.001	0.080

Panel B: Asset tangibility

	(1)	(2)
	High Tangibility	*Low Tangibility*
Dependent variable =	*Investment$_{t+1}$*	*Investment$_{t+1}$*
TobinQ$_t$	0.004***	0.002**
	(2.94)	(2.25)
VisitFreq$_t$	0.001**	0.000
	(1.99)	(0.66)
TobinQ$_t$× VisitFreq$_t$	0.002***	0.000
	(2.95)	(0.98)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
Observations	6,431	6,464
Adj.R^2	0.44	0.43
Difference between coefficients	(2)-(1)	*p-value*
TobinQ$_t$×VisitFreq$_t$	-0.001	0.000

Panel C: Alternative monitoring mechanisms

Dependent variable =	(1) Strong Alt_Monitoring Investment$_{t+1}$	(2) Weak Alt_Monitoring Investment$_{t+1}$
TobinQ$_t$	0.005***	0.003**
	(3.98)	(2.30)
VisitFreq$_t$	0.001	0.002***
	(1.44)	(2.77)
TobinQ$_t$ × VisitFreq$_t$	0.001*	0.001**
	(1.73)	(2.37)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
Observations	6,172	6,610
Adj.R^2	0.47	0.37
Difference between coefficients	(2)-(1)	p-value
TobinQ$_t$×VisitFreq$_t$	0.000	0.120

Notes: This table presents cross-sectional analyses based on visited-firm-specific characteristics related to the monitoring mechanisms. In Panel A, the sample is split by the median of *Agency_Problem* where *Agency_Problem* is proxied by related-party accounts receivables at the end of year *t* scaled by lagged total assets. In Panel B, the sample is split by the median of *Tangibility*. In Panel C, the sample is split by the median of *Alt_Monitoring* where *Alt_Monitoring* is the count of the presence of strong alternative monitoring mechanisms. We consider each alternative monitoring mechanism as relatively strong if the firm has a Big 4 auditor, cross-listing status, top-quintile institutional holding, top-quintile qualified foreign institutional holding, top-quintile media coverage, is a non-state-owned enterprise, has a top-quintile supervisory board size, top-quintile analyst coverage, and top-quintile analyst forecast accuracy, respectively. *t*-statistics are reported in brackets and standard errors are robust to heteroskedasticity and clustered at the firm level. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

TABLE 7
Alternative Explanations

Panel A: Site visits and changes in information asymmetry

Dependent variable =	$Investment_{t+1}$
$TobinQ_t$	0.003***
	(3.18)
$IAdecFreq_t$	0.000
	(0.37)
$TobinQ_t \times IAdecFreq_t$	-0.000
	(-0.49)
$Non\text{-}IAdecFreq_t$	0.000
	(0.31)
$TobinQ_t \times Non\text{-}IAdecFreq_t$	0.002*
	(1.68)
Controls	Yes
Firm FE	Yes
Year FE	Yes
Observations	13,247
Adj.R^2	0.42

Panel B: Site visits versus conference calls

	(1)	(2)
Dependent variable =	$Investment_{t+1}$	$Investment_{t+1}$
$TobinQ_t$	0.003***	0.003***
	(3.30)	(3.59)
$VisitFreq_t$		0.001**
		(2.42)
$TobinQ_t \times VisitFreq_t$		0.001**
		(2.43)
$ConfFreq_t$	0.001	0.000
	(0.22)	(0.10)
$TobinQ_t \times ConfFreq_t$	0.001	0.000
	(0.45)	(0.04)
Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
Observations	13,247	13,247
Adj.R^2	0.42	0.42

Notes: This table presents the analyses that examine whether our results can be inferred from prior studies. We classify each visit as either a visit that decreases information asymmetry around the visit or a visit that does not decrease information asymmetry. Information asymmetry is proxied by the monthly adverse selection component of bid-ask spread calculated following Lin et al. (1995). In Panel A, $IAdecFreq_t$ is the natural logarithm of 1 plus the total number of visitors from visits in year t around which information

asymmetry decreases. *Non-IAdecFreq$_t$* is the natural logarithm of 1 plus the total number of visitors from visits in year *t* around which information asymmetry increases or does not change. In Panel B, we compare the effects of site visits and conference calls on investment efficiency. *ConfFreq$_t$* is the natural logarithm of 1 plus the total number of conference calls in year *t*. *t*-statistics are reported in brackets and standard errors are robust to heteroskedasticity and clustered at the firm level. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

TABLE 8
Instrumental Variables Analysis

Panel A: First-stage results – determinant model

Dependent variable =	$VisitFreq_t$
$TobinQ_t$	0.080***
	(3.19)
New_Flight_t	0.652***
	(8.48)
$TobinQ_t*New\_Flight_t$	0.022
	(0.86)
Ab_Invest_{t-1}	0.995***
	(3.84)
$M\text{-}index_t$	0.211***
	(9.70)
$TobinQ_t \times M\text{-}index_t$	0.042***
	(4.02)
CFO_t	0.651***
	(3.34)
$Leverage_t$	-0.884***
	(-7.36)
SEO_t	-0.117**
	(-2.47)
$LogAsset_t$	0.493***
	(15.14)
Age_t	-0.492***
	(-11.41)
$Stock\_Return\_Volatility_t$	14.385***
	(4.93)
$Tangibility_t$	-0.031***
	(-3.96)
HHI_t	-1.332**
	(-2.24)
$Accruals\_Quality$	0.443*
	(1.84)
Industry FE	Yes
Year FE	Yes
Observations	11,837
Adj.R^2	0.25

Panel B: Second-stage results

	(1)	(2)
Dependent variable =	$Investment_{t+1}$	$Investment_{t+1}$
$IV(VisitFreq_t)$	0.001**	0.001**
	(2.46)	(2.37)
$TobinQ_t$	0.003***	0.003***

	(3.63)	(3.63)
$TobinQ_t \times IV_t(VisitFreq_t)$	0.001**	0.001**
	(1.96)	(2.11)
$M\text{-}index_t$	0.006***	0.006***
	(4.66)	(4.53)
$TobinQ_t \times M\text{-}index_t$	0.001**	0.001*
	(2.00)	(1.85)
CFO_t	0.036***	0.036***
	(4.55)	(4.55)
$Leverage_t$	-0.037***	-0.037***
	(-4.54)	(-4.55)
SEO_t	0.024***	0.024***
	(7.47)	(7.46)
$LogAsset_t$	-0.007**	-0.007**
	(-2.37)	(-2.32)
Age_t	-0.035***	-0.035***
	(-7.00)	(-6.99)
$Stock\_Return\_Volatility_t$	-0.114	-0.112
	(-0.90)	(-0.89)
$Tangibility_t$	-0.003***	-0.003***
	(-6.67)	(-6.66)
HHI_t	0.036	0.036
	(1.49)	(1.49)
$Accruals\_Quality$	0.028***	0.028***
	(2.66)	(2.63)
$Residual\_Stage1$	-0.003	-0.003
	(-0.82)	(-0.73)
$TobinQ_t \times Residual\_Stage1$		-0.000
		(-0.46)
Firm FE	Yes	Yes
Year FE	Yes	Yes
Observations	11,837	11,837
Adj.R^2	0.40	0.40

Notes: This table presents the results of the instrumental variables analysis. The instrumental variable is *New_Flight* which is an indicator variable that equals 1 when there is at least one new flight created in year *t* in the MSA of the visited firm, and 0 otherwise. *Ab_Invest$_{t-1}$* which is abnormal investment expenditure calculated using Equation (5) in Roychowdhury (2006). See Appendix B for other variable definitions. We employ the control function approach by including *Residual_Stage1*, the residuals estimated from the first-stage determinant model to control for the potential endogeneity (Wooldridge 2015). *t*-statistics are reported in brackets and standard errors are robust to heteroskedasticity and clustered at the firm level. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.