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The Geography of Information Acquisition

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Abstract

Using detailed data on company visits by Chinese mutual funds, we provide direct evidence of mutual fund information acquisition activities and the consequent informational advantages mutual funds establish in local firms. Mutual funds are more likely to visit local and nearby firms both in and outside of their portfolios, but the ease of travel between fund and firm locations can substantially alleviate geographic distance constraints. Company visits by mutual funds are strongly associated with both fund trading activities and fund trading performance. Our results show that geographic constraints and costly information acquisition amplify information asymmetry in financial markets.

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I. Introduction

Investors exhibit a strong preference for locally headquartered firms in their portfolio choices. This phenomenon (often referred to as local bias) is prevalent not only for individual investors (Ivković and Weisbenner (2005)) but also for professional investors such as mutual funds (Coval and Moskowitz (1999)). Despite the extensive evidence of local bias in investment decisions, there is no consensus on the causes of such bias. The local preference could arise from investors' familiarity with local firms or from the informational advantages enjoyed by investors in these firms. Pool, Stoffman, and Yonker (2012) find evidence of "familiarity effects" – mutual funds overweigh stocks from fund managers' home states even though the managers do not possess a comparative information advantage in these stocks. Consistent with an information-based explanation, a strand of the literature finds that local portfolios tend to deliver better performance than nonlocal portfolios for mutual funds (Coval and Moskowitz (2001)), hedge funds (Teo (2009)), and other types of institutional investors (Baik, Kang, and Kim (2010)).

The superior local portfolio performance documented in the literature suggests that investors exploit their informational advantage in local investments. However, important questions about why and how investors achieve and maintain such information advantage in local firms remain largely unanswered. For example, although both Coval and Moskowitz (2001) and Baik et al. (2010) conjecture that access to private information of geographically proximate firms and improved monitoring of these firms could be associated with local information advantage and better investment performance, it is unclear how geographic location affects information access and information acquisition by investors. Because few of the information acquisition activities associated with investment decisions are readily observable, answering these questions remains an empirical challenge.

In this article, we study the information acquisition activities of mutual funds in local and nonlocal stocks and provide the first direct evidence of a link between geographic location, information acquisition, and investment decisions. Our analyses are facilitated by a unique setting in China where a specific type of mutual fund information acquisition activity is recorded and disclosed. In 2006, the Shenzhen Stock Exchange (SZSE) in China established a policy that requires firms listed on the exchange to disclose detailed information about company visits, or site visits, by investors and financial analysts. Using detailed data on the disclosed company visits conducted by Chinese mutual funds from 2007 to 2017, we study how geographic location affects mutual fund information acquisition in their investment decisions.

After documenting evidence of local preference and superior performance of local holdings in Chinese mutual fund investments, we investigate whether and how geographic location affects mutual fund information acquisition activities. We find that fund managers are more likely to conduct visits to local and nearby firms (e.g., firms located within 200 km of the fund). The frequency of mutual fund visits for companies that are located in the same city or close to the city of the mutual fund is twice as high as that for their nonlocal counterparts. Mutual funds are more likely to visit local firms both in and outside of their existing portfolios. Furthermore, fund managers are more likely to engage in repeat visits to local than to nonlocal firms. The evidence is robust after we control for firm characteristics and a large set of fixed effects.

Geographic proximity could be related to fund location choice and the economic and cultural ties across the regions, which can affect site visit and investment decisions. To address concerns of endogeneity, we exploit the rapid change in travel mode in China during the sample period to identify the causal effect of geographic distance on information acquisition. We collect information on the establishment of direct high-speed (HS) train service between cities and use a difference-in-differences approach to examine whether the introduction of an HS train connection between the fund city and the firm city affects mutual fund visits. Because the treatment is determined by pairs of fund-firm cities, we can control for all time-invariant and other time-variant factors at the city level and identify a clean treatment effect. Using two alternative difference-in-differences specifications, we find robust evidence that fund managers significantly increase their site visits to cities and firms after the establishment of a direct HS train connection. Further dynamic tests support the causal effects of HS train connection on fund site visits.

We next examine whether mutual fund site visits affect investment decisions. If site visits represent an important form of information gathering by mutual funds, these site visits should lead to changes in mutual fund portfolio positions in these stocks. We find that site visits have a positive and highly significant impact on mutual fund trading activity. This positive relation exists for both buy and sell decisions for stocks the mutual funds currently own and is particularly important for initiating new positions in stocks the mutual funds did not own.

Company visit decisions and investment decisions are likely determined jointly. For example, a fund manager may visit a company for which she is already considering a change in portfolio position. Furthermore, a significant relation between company visits and position changes does not by itself suggest the company visits yield valuable investment information. To further assess the contribution of company visits to mutual fund investment decisions, we first measure trading profit based on mutual fund end-of-period stock holdings and intraperiod cumulative trades and find a significantly positive relation between trading profits and company visits. We then estimate the 1-, 3-, and 6-month post-visit performance of various stock portfolios based on mutual fund trading activities inferred from holding changes. We find significant performance differences between post-visit buy and sell trades in stocks that mutual funds already own and between post-visit buy and nontraded stocks for stocks that mutual funds do not previously own. The results hold for all three evaluation periods and are stronger for initial than for incremental purchase decisions. The performance results confirm that mutual fund company visits affect investment decisions because such visits provide valuable information to mutual funds.

These results provide direct evidence on mutual fund information acquisition activity and its possible link to investor local preference. The investment performance evidence in Coval and Moskowitz (2001), Teo (2009), and Baik et al. (2010) suggest that fund managers enjoy an informational advantage in local holdings. Compared with these studies that infer a local information advantage from investment performance, we study information acquisition activity directly. Our evidence reveals that the local information advantage enjoyed by mutual fund managers is at least partly derived from their more intensive information-gathering efforts for local firms. Such information acquisition efforts directly affect mutual fund portfolio choice, trading decisions, and investment performance. Because of the persistent differences in the information acquisition costs for local and nonlocal stocks, the resulting "local bias" in investment decisions could be a robust phenomenon even in well-developed financial markets.

Our examination of mutual fund information acquisition activity yields several notable findings that cannot be obtained using portfolio holdings alone and these findings shed further light on the causes and consequences of investor local preference. First, mutual funds are more likely to visit local companies regardless of whether these companies are in their portfolios and they are also more likely to conduct repeat visits to local companies. In a theoretical model of "home bias" based on endogenous information acquisition, Van Nieuwerburgh and Veldkamp (2009) argue that investors who enjoy some initial information advantage in a market may further develop this advantage through greater information acquisition effort. Schumacher (2017) documents the effects of initial information advantage and shows that mutual fund managers exhibit home-industry bias in their foreign investments. Our results provide direct evidence on the continuing information acquisition effort in the investment process. To the extent that geographic proximity provides some initial information advantage or differential information endowment to local fund managers, these managers acquire more information in local stocks regardless of ownership and continue to exert greater efforts in acquiring information after they own the stocks.

Second, we find that mutual funds conduct extensive site visits to companies they do not own. On average, they devote about 80% of their visits to these firms and many of these visits are repeat visits. These information acquisition activities may not be immediately reflected in portfolio changes and thus are inevitably overlooked in studies that examine information advantage through fund returns and portfolio holdings. However, these efforts are an integral component of the investment process and could have important implications for investment decisions and performance. For example, such evidence could help explain the superior investment performance of stocks that are newly acquired by mutual funds (Alexander, Cici, and Gibson (2007)) and the poor performance of local stocks that are not owned by mutual funds (Coval and Moskowitz (2001)).

Third, the literature suggests that better local investment performance could also be driven by enhanced monitoring by local investors (Baik et al. (2010)). Company visits may be part of the monitoring activity. However, the intensive visit activity in stocks not held by mutual funds is unlikely to be motivated by monitoring. This evidence, combined with the evidence on post-visit trading performance, suggests that information rather than monitoring reasons possibly largely explains local investment decisions and investment performance.

Our article is related to the literature on direct communication in financial markets. Such direct communication can take the form of conference presentations by management (Bushee, Jung, and Miller (2011)), broker-hosted investor conferences (Green, Jame, Markov, and Subasi (2014a), (2014b)), investor/analyst day hosted by companies (Kirk and Markov (2016)), and private in-house meetings (Bowen, Dutta, Tang, and Zhu (2018)). Solomon and Soltes (2015) find that private meetings with management lead to better informed trading decisions by hedge funds. We show that site visits by mutual funds, a form of information acquisition activity based on direct communication, play an important role in their investment decisions. Our results highlight how geographic location can affect information acquisition and lead to mutual fund local preference in portfolio choice. Financial analysts' private communication with management similarly plays an important role in analyst research (Soltes (2014), Brown, Call, Clement, and Sharp (2015)). Using data on company visits by Chinese financial analysts, Cheng, Du, Wang, and Wang (2016) and Han, Kong, and Liu (2018) find these visits facilitate analysts' information acquisition and improve earnings forecast accuracy. Our evidence suggests geographic constraints in information acquisition could help to explain localized information production in analyst research and the information advantage enjoyed by the geographically proximate financial analysts (Malloy (2005)).

Our article is related to, but distinct from, several recent or concurrent studies on information acquisition of mutual funds. Using U.S. data, Ellis, Madureira, and Underwood (2020) find that the introduction of direct flights between a fund location and a metropolitan statistical area (MSA) leads to an increase in the fund's investment in firms in the MSA. Their findings suggest geographic distance impedes information flow, although they are unable to study communication or information acquisition activities by either the firms or mutual fund managers because they do not observe such activities.[1] Our use of site visits data enables us to overcome this hurdle to identify the activity participants, pinpoint the direction of the information flow, and further examine the effects of information acquisition on trading activities. Liu, Dai, and Kong (2017) find that site visits by Chinese mutual funds predict fund trading and firm earnings surprise, but they do not examine the role of geographic location in information acquisition.

Finally, our article contributes to the growing literature on the effect of transportation on financial markets. Herpfer, Mjøs, and Schmidt (2018) find that a reduction in travel time affects both new and existing borrowing relationships. The introduction of new airline routes is shown to affect venture capitalists' involvement with their portfolio companies (Bernstein, Giroud, and Townsend (2016)), and to broaden the investor base of firms and lower their cost of equity (Da, Gurun, Li, and Warachka (2021)). All these studies suggest that geographic distance affects communication and information gathering. Our article provides direct evidence that distance affects a well-defined, important form of information-gathering activity and that transportation infrastructure development can potentially improve information efficiency in financial markets.

The remainder of the article is organized as follows: Section II provides the institutional background of the mutual fund industry and disclosure of site visits in China. Section III introduces the data. Section IV examines local preference in mutual fund portfolio choice and the relation between location and site visits. Section V studies how ease of travel affects site visits to establish a causal effect of location on information acquisition. Section VI investigates how site visits influence mutual fund investment decisions and performance. Section VII concludes.

[1]Bushee, Gerakos, and Lee (2018) proxy visits by a firm's management to institutional investors using corporate jet flight information between the cities.

II. Institutional Background

In this section, we provide a brief description on company visit regulations in China and mutual fund company visit practices. We provide more detailed background information on the Chinese mutual fund industry and company visit disclosure policy in the Supplementary Material.

Investors and financial intermediaries in China are allowed to visit the listed companies. Per exchange regulation, the companies listed on the SZSE are required to timely record and disclose information about the site visits in their periodic financial report. Such information typically includes the time and location of the visits, the names and affiliations of the visitors, and the topics covered in the meetings. Table A1 provides an example of a typical visit record from an annual financial report.

The requests for site visits are typically initiated by the investors and accommodated by the firms, and the visit dates are negotiated between the two parties. During the visits, investors meet with mid- and high-level corporate executives but do not usually meet with top executives such as CEOs. In addition to face-to-face meetings, investors can take a field tour of the production facilities and observe firms' operations. Nonpublic material information should not be requested or provided during the visits.

Fund managers usually conduct site visits with research analysts of the mutual fund company. It is also common that research analysts visit the firms and later provide summarized information to fund managers.[2] As we explain in the next section, we conduct the empirical analysis on fund visits and investment decisions at the fund family level. Information sharing between research analysts and multiple fund managers and among fund managers is standard practice in Chinese mutual fund families. Different from the U.S. mutual fund industry, which is dominated by large mutual fund families, Chinese mutual fund families are much smaller. A typical mutual fund family in our sample has 5–8 actively managed equity funds and equity balanced funds. The equity research team works for the mutual fund family and a research analyst often provides research support for multiple managers.[3] Fund managers within a mutual fund family not only have joint meetings with the research team to share investment research but also have regular meetings among managers to share opinions and explore investment ideas.

Face-to-face communications and interactions with firm management during site visits allow fund managers to ask pointed questions and help to improve their

[2]The questions that mutual funds ask during a visit are usually related to i) development strategies such as how to explore new markets and how to maintain the competitiveness in the industry; ii) real assets operations such as production capacity and technology development; iii) sales such as the marketing strategies and market shares; iv) financial management such as financing strategies for new projects and accounting information; and v) others including corporate governance and stock market performance.

[3]Depending on the size of the mutual fund family, each analyst on the equity research team covers 1–3 industries. Because of this structure, a research analyst provides research support for all managers who are interested in the industries the analyst covers.

understanding of the strategy, operations, and performance of the firm. Equally important, observations through direct communications, or "seeing is believing," help fund managers to obtain "soft information" that is not available from financial statements or other sources. Several recent studies emphasize direct communication as a form of information acquisition in the financial markets (e.g., Brown et al. (2015)). Cheng et al. (2016), for example, conclude that site visits help analysts improve their forecast accuracy. Fund managers, particularly those who are skilled at incorporating "soft information" in their investment research, can take advantage of site visits and acquire valuable investment-relevant information.

III. Data and Sample Characteristics

We collect the information of company visits from the "Disclosed Corporate Activities" section in the annual reports of companies listed on the SZSE for the period of Jan. 2007 to June 2017. The initial sample contains information on 361,389 site visit events for 1,845 companies. The visitors not only include different types of financial institutions such as brokerage firms, mutual funds, hedge funds, insurance companies, and other types of asset management companies but also include individual investors, news media, and others. About 35% of the visits are by brokerage firms, followed by mutual funds at 25% of the visits.

We identify visits by mutual funds using fund family names that are provided in the disclosure. The names of fund families in our sample are not standardized and may include full names, abbreviations, or even typos. We create a link table between fund families and the known variations of their names and are able to identify 91,493 visits by fund families that have at least one actively managed equity fund. We combine the records of visits by the same fund family to the same company on the same day and are left with a sample of 76,411 visits by fund families to 1,710 companies listed on the SZSE. Our analyses focus on visits by mutual funds at the fund family level.

The mutual fund data come from several sources. Data on mutual fund stockholdings, cumulative stock trades, and fund location are from the China Stock Market and Accounting Research (CSMAR) database. Chinese mutual funds are required to disclose their equity holding information, including number of shares and market value of holdings, at the end of each quarter with different reporting requirements. More specifically, mutual funds need to report only the top-10 stockholdings in the first and third calendar quarters but must disclose their full list of stockholdings as well as cumulative trades during the past 6 months in the second and fourth quarters. Therefore, we focus on the semiannual reports with complete stockholding information in our analysis. The sample period for fund equity holdings is from Dec. 2006 to Dec. 2016.

Information on mutual fund net asset value is from the RESSET database, one of the leading financial data vendors in China. It provides the daily fund unit price and number of units for each fund, as well as the classification of mutual fund investment objectives. For our study, we retain only actively managed equity funds and balanced equity funds with at least 60% asset allocation in stocks and exclude other types of funds such as index funds, balanced funds with low equity allocation, and bond funds. We merge the mutual fund data from CSMAR with the data from RESSET using fund code numbers, which are uniquely assigned by the Chinese Securities and Regulatory Commission. We aggregate fund holdings information at the fund family level every half year. We further obtain accounting information, financial analyst coverage, and stock return information of public companies in the sample from CSMAR.

Firms' geographic locations are important for site visits because visitors must be physically present. Figure 1 plots the headquarters locations for all sample firms and financial hub cities that hold mutual fund families. Although more firms are located in better-developed regions (e.g., the Yangtze River Delta in the east and the Pearl River Delta in the south), overall, sample firms are dispersed across all provinces of China. Large geographical dispersion generates substantial variation in travel-related costs for fund managers. Moreover, since distances are long among the four financial hub cities, travel time between a given firm and different fund families can vary substantially. These facts provide the variation for discovering the effects of information acquisition costs if they are present.

Table 1 presents summary statistics for mutual fund families, their stockholdings, and their site visits during the sample period. The number of fund families in the sample increases from 55 in June 2007 to 75 in Dec. 2016. These fund families hold 122 unique stocks on average in June 2007, of which 47 are listed on the SZSE. The corresponding numbers increase to 338 and 194, respectively, in Dec. 2016. The increases in stockholdings coincide with the growth in the number of listed

FIGURE 1

Geographical Locations of Sample Firms and Mutual Fund Families

Figure 1 plots firm headquarters locations for all SZSE-listed firms in the sample. Red stars denote mutual fund family office locations.

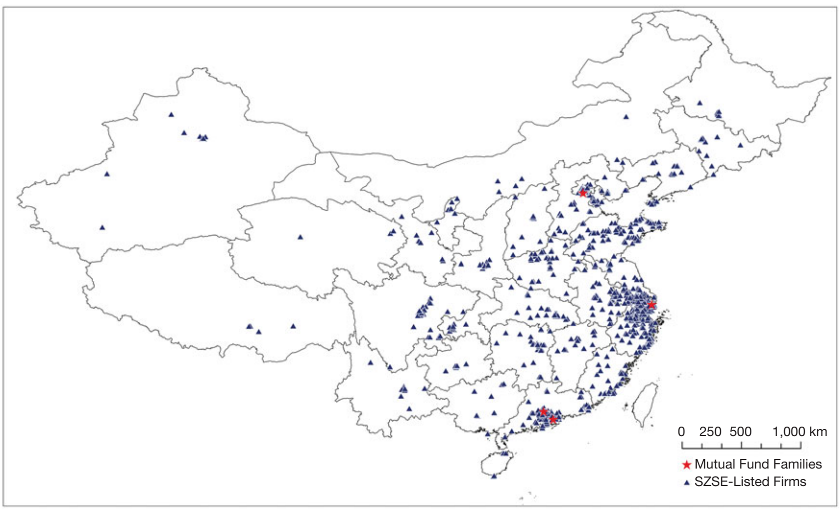

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TABLE 1

Descriptive Statistics

Table 1 presents summary statistics for mutual fund holdings and site visits. The sample includes all actively managed equity funds and equity balanced funds in the fund families from Jan. 2007 to June 2017. The fund-level holdings are aggregated at the fund family level every half year. The statistics in each column are as follows: (1) number of fund families, (2) average number of stocks held by a family, (3) average number of stocks held that are listed on the Shenzhen Stock Exchange (SZSE), (4) number of stocks listed on the SZSE, (5) total number of listed stocks, (6) number of SZSE stocks over the total number of stocks, (7) market value of SZSE stocks over the market value of all listed stocks, (8) average ratio of the number of SZSE stocks held over the total number of stocks held by each fund family, (9) average portfolio weight of SZSE stocks in fund families, (10) average number of visits by fund families over the half year, (11) average number of stocks held per fund, and (12) average number of funds per fund family.

Period Ending	*N*	No. Stocks Held	No. SZSE Stocks Held	No. SZ Stocks	No. All Stocks	SZSE/All Based on Number	SZSE/All Based on Cap	Avg. SZSE/Total Number	Avg. SZSE/ Total Cap	No. Visit	Stocks Per Fund	Funds Per Family
	1	2	3	4	5	6	7	8	9	10	11	12
200,706	55	121.9	47.3	612	1,451	0.422	0.221	0.377	0.328	11.9	67.8	3.1
200,712	56	144.1	58.4	675	1,527	0.442	0.173	0.392	0.306	13.9	78.6	3.4
200,806	57	139.2	59.0	729	1,583	0.461	0.187	0.407	0.322	16.5	75.0	3.5
200,812	58	142.5	55.9	746	1,601	0.466	0.197	0.387	0.329	15.7	66.7	3.8
200,906	58	150.2	56.7	744	1,598	0.466	0.209	0.376	0.319	28.4	66.8	4.1
200,912	59	193.4	86.2	834	1,696	0.492	0.242	0.445	0.349	26.3	78.5	4.4
201,006	60	200.3	98.8	998	1,867	0.535	0.285	0.497	0.397	37.5	72.2	4.7
201,012	60	205.5	105.8	1,155	2,039	0.566	0.322	0.514	0.456	39.5	68.6	5.1
201,106	61	198.3	99.0	1,298	2,205	0.589	0.312	0.494	0.427	39.5	62.3	5.4
201,112	64	215.6	116.0	1,397	2,318	0.603	0.307	0.546	0.468	41.6	64.8	5.6
201,206	67	224.8	122.9	1,485	2,420	0.614	0.321	0.543	0.457	69.2	68.0	5.7
201,212	67	215.3	117.6	1,526	2,470	0.618	0.310	0.541	0.451	85.2	65.2	6.0
201,306	67	204.0	120.9	1,525	2,469	0.618	0.342	0.611	0.576	63.4	59.0	6.2
201,312	67	210.9	124.5	1,524	2,468	0.618	0.366	0.594	0.574	80.9	58.5	6.3
201,406	69	214.0	135.0	1,569	2,519	0.623	0.387	0.644	0.632	86.9	58.1	6.4
201,412	69	256.9	146.7	1,606	2,591	0.620	0.343	0.556	0.501	84.9	63.9	6.8
201,506	70	280.2	180.4	1,715	2,776	0.618	0.405	0.648	0.665	80.1	58.4	7.3
201,512	73	280.3	182.5	1,736	2,809	0.618	0.445	0.665	0.673	66.0	60.6	7.6
201,606	74	323.3	205.5	1,770	2,867	0.617	0.458	0.636	0.666	64.1	73.7	7.7
201,612	75	338.1	193.7	1,857	3,031	0.613	0.439	0.563	0.604	79.5	82.8	7.8
Average	64	212.9	115.6	1,275	2,215	0.561	0.313	0.522	0.475	51.5	67.5	5.5

stocks on both the SZSE and the Shanghai Stock Exchange (SHSE). The number of publicly listed stocks in China more than doubles from 1,451 in 2007 to 3,031 in 2016. The number of stocks listed on the SZSE triples from 612, or 42.2% of all listed stocks, in 2007 to 1,857, or 61.3% of all listed stocks, in 2016. Over the same period, the ratio of the market capitalization of SZSE-listed stocks to the aggregate market capitalization of all listed stocks increases from 22.1% to 43.9%. Compared with the SHSE, there are more small- and medium-sized companies on the SZSE. Notably, many of the large state-owned enterprises (SOEs) in China are listed on the SHSE.

Within mutual fund portfolios, the holding number (portfolio weight) of SZSE stocks increases from 37.7% (32.8%) to 56.3% (60.4%) over the sample period. Because of the large state ownership of publicly listed SOEs, mutual fund holdings of SZSE-listed stocks represent a greater share of mutual fund investment portfolio than the aggregate market weight of SZSE-listed stocks. Overall, SZSE-listed stocks represent about half of the mutual fund portfolio in both the number of stocks and the value of holdings in the portfolio (columns 8 and 9 of Table 1).

We observe a steady increase in site visits by mutual funds over the sample period. The average number of visits conducted by each fund family to companies listed on the SZSE increases from 11.9 in the first half of 2007 to more than 79.5 by the second half of 2016.[4] The increase can be partly explained by the increase in SZSE-listed stocks and the increase in these stocks in mutual fund portfolios. However, the ratio of total visits per fund family to number of SZSE stocks varies from 1.9% to 5.6% and increases significantly over the same period.[5] The trend is indicative of the growing importance of site visits in mutual funds' investment decisions.

The last two columns report statistics for individual funds within fund families. On average, each fund holds about 58–83 stocks, but there is no clear time trend in the number of stocks held. The clear upward trend in total number of stocks held in a family (column 2) is largely driven by the increase in the number of funds, from 3.1 in 2007 to 7.8 in 2016, within a fund family (column 12). Finally, the product of the number of stocks per fund and the number of funds per family is much larger than the total number of stocks held by a fund family (column 2), suggesting that there is substantial overlap in stock holdings across funds within a fund family.

IV. Local Preference and Company Visits

A. Mutual Fund Local Preference and Information Advantage

In this subsection, we examine whether mutual funds in China exhibit a preference for local stocks and whether such local preference is related to the information advantage these mutual funds possess in local firms. We limit the sample to SZSE-listed stocks because site visit information is available only for these companies. For each fund-company pair, we compute the distance between the city of the mutual fund family and the city of the corporate headquarters of the company.[6] We use three definitions for local firms. We first define a company as a local firm for a fund if the company and the fund are in the same city (i.e., the distance between their cities is zero). We then change the definition for a local firm by extending the distance to less than 100 km and then less than 200 km.[7]

Using these definitions, we follow Coval and Moskowitz (2001) and aggregate fund holdings into local and nonlocal holdings for each fund family. We construct two benchmarks for local and nonlocal holdings for each fund family. The first benchmark follows most mutual fund studies that use the ratio of aggregate market value of local stocks to the aggregate market value of all stocks. The second benchmark is based on the holdings of all mutual funds. We calculate the value of

[4]If a fund family visits the same company more than once on different dates during the half year, we count them as separate visits. As we show in the analysis on unique and repeat visits in the next section, repeat visits of the same firm by the same fund within 1 year are not common.

[5]We find a similar pattern with a crude estimate of visits by individual funds. In the first half of 2007, the average number of visits per fund is 3.9 (column 10 divided by column 12), and each fund visits 5.68% of their holdings (column 11 divided by the average number of visits per fund). In the second half of 2016, these numbers become 10.2% and 12.31%, respectively.

[6]We use the headquarter locations of the mutual fund families. Although mutual funds in China may have subsidiaries in other cities, the main function of those subsidiaries is fund sales. Investment managers of funds typically work at fund headquarters.

[7]Although untabulated, all results are qualitatively similar if a threshold of 300 km is used.

TABLE 2

Mutual Fund Local Preference

Table 2 presents results on the local preference of mutual funds. The sample includes all actively managed equity funds and equity balanced funds in the fund families from Jan. 2007 to June 2017. The fund-level holdings are aggregated at the fund family level every half year. Only stocks listed on the Shenzhen Stock Exchange are included in the analysis. Three definitions of local firms are used. A firm is considered local for a fund if the distance between their cities is 0 km, less than 100 km, or less than 200 km. Column 1 reports the average portfolio weight of local stocks across fund families. Column 2 presents the benchmark weight based on the market capitalization of firms. To calculate this benchmark, we divide the total market value of local stocks by the total market value all stocks. Column 3 presents the benchmark weight based on the holdings of all fund families. To calculate this benchmark, we divide the holding value of local stocks across all fund families by the holding value of all stocks across all fund families. Column 4 shows the differences between columns 1 and 2. Column 5 shows the differences between columns 1 and 3. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Fund	Market	Fund Holding Universe	Fund – Market	Fund – Universe
Local	1	2	3	4	5
Distance = 0	0.093	0.071	0.081	0.022*	0.012*
Distance < 100	0.116	0.092	0.102	0.023*	0.014*
Distance < 200	0.190	0.156	0.171	0.032*	0.019*

stock holdings from a local area by all fund families and divide by the value of all their stock holdings. The second benchmark takes into consideration mutual fund preference for various stock characteristics and can further address one shortcoming for using market weight as the benchmark weight in the Chinese stock market. Publicly listed SOEs, for which the state is the controlling shareholder, are an important component of the Chinese stock market. Although state-owned shares can be traded in the secondary market, for political and control considerations, these shares are rarely sold to the public and for practical purposes are not available to mutual funds. As a result, the market weight of these SOEs is much higher than the actual weight available for mutual funds and other investors. The second approach therefore provides a better approximation of the investable proportion of firms for all funds.

We present the results on mutual fund local preference in Table 2. Column 1 reports the average portfolio weight of local stocks across fund families over our sample period for the three definitions of local firms. Columns 2 and 3 present the benchmark weights based on market value and aggregate fund holdings, respectively. For all definitions of local firms, we find robust and consistent patterns of local preference. Chinese mutual funds hold disproportionally more local stocks than nonlocal stocks. On average, mutual funds allocate 9.3% of their assets to firms located in the same city, significantly greater than that of 7.1% (8.1%) for the benchmarks based on market value (fund holdings universe). As we relax the definition of locality and expand the radius, the weight of local stocks in mutual fund portfolio increases, as does the weight of local stocks in the benchmark portfolios. However, we continue to find that mutual funds allocate more investments to local stocks than the benchmarks.

The pattern and magnitude of local bias in Chinese mutual funds documented here are similar to those based on U.S. data. Using a sample of mutual funds from 1975 to 1994, Coval and Moskowitz (2001) find that an average fund manager invests about 7% of assets locally, whereas local stocks constitute only 6.2% of market capitalization. Baik et al. (2010) study a more recent sample from 1995 to

2007 and find that the actual fraction of local holdings by institutional investors is 8.2%, whereas the fraction of market weight in the same area is 6.6%. Our results suggest that local bias in mutual fund investments in China is robust and largely comparable in magnitude with the well-documented evidence in the USA.

Next, we examine whether mutual funds exhibit an informational advantage in their local holdings. As suggested by Coval and Moskowitz (2001), the existence of such an informational advantage can be reflected in superior returns generated by the local holdings in a fund portfolio.[8] Our analysis proceeds as follows: At the end of each half-year period t, we separate a fund family's holdings into a local portfolio and a nonlocal portfolio based on the three definitions of local firms. For each portfolio, we calculate the average monthly raw return in period $t+1$ (the next 6 months) using the stockholding weight at the end of period t.

In addition to raw portfolio returns, we calculate abnormal holding-period returns based on size and book-to-market benchmark portfolios.[9] To construct the benchmark, we first sort all firms into five size portfolios at the beginning of July in year t using the market value of firms at the end of June in the same year. Within each size portfolio, we further sort all firms into five book-to-market portfolios at the beginning of July in year t based on the book value of equity measured at the end of fiscal year $t-1$ and the market value of equity measured at the end of December in year $t-1$. We rebalance the benchmark portfolios every year and calculate the equally weighted benchmark portfolio returns.[10]

We compare the performance of local and nonlocal holdings of the same fund family and report the results in Table 3. Columns 1 and 2 show the time-series average monthly raw returns (in percentage) of local and nonlocal portfolios, and column 3 reports the difference between the two. For all three definitions of local firms, local holdings deliver a higher return than nonlocal holdings. The annualized difference in raw returns ranges from 4.9% to 5.7% and is statistically significant. After controlling for firm size and book-to-market ratio, local portfolios (column 4) continue to deliver significantly higher returns than nonlocal portfolios (column 5). The annualized abnormal returns of local portfolios are between 4.2% and 5.2% and exceed those of nonlocal portfolios by 5.5 to 6.3 percentage points. These results are striking given that we update the holdings information at a low frequency (every half year) and examine portfolio performance based on fund holdings rather than trading activities. The superior performance of local portfolios in our sample of

[8]For brevity, we sometimes refer to mutual fund family portfolios as mutual fund portfolios and holdings by mutual fund families as mutual fund holdings in the article.

[9]We do not further partition the portfolios into momentum portfolios for 2 reasons. First, there is no evidence of a momentum effect in the Chinese stock markets (see, e.g., Lee, Qu, and Shen (2017)). Second, further partition leads to less reliable benchmark portfolio returns in the early sample period because of the small number of stocks. Nonetheless, our results are robust if we follow the method in Daniel, Grinblatt, Titman, and Wermers (1997) that includes the momentum factor in benchmark construction.

[10]An equally weighted benchmark is preferred because of the strong size effect in the Chinese equity market that is due partly to the poor performance of large SOEs (see, e.g., Lee et al. (2017), Hu, Chen, Shao, and Wang (2019)). Results, however, are robust regardless of whether we use value-weighted benchmark portfolio returns or the alternative size and earnings-to-price ratio benchmark in Liu, Stambaugh, and Yuan (2019).

TABLE 3

Local Preference and Information Advantage

Table 3 presents the relation between local preference and future portfolio returns. The sample includes all actively managed equity funds and equity balanced funds in the fund families from Jan. 2007 to June 2017. The fund-level holdings are aggregated at the fund family level every half year. At the end of period t, we split a family's holdings into the local portfolio and the nonlocal portfolio. Three definitions of local firms are used. A firm is considered local for a fund family if the distance between their cities is 0 km, less than 100 km, or less than 200 km. For each portfolio, we calculate raw returns as the average monthly returns in period $t+1$ (the next 6 months) using the stockholding weight at the end of period t and present the results in columns 1–3. We construct the benchmark portfolios based on size and book-to-market (BM) and present the abnormal returns in columns 4–6. Column 3 shows the differences between columns 1 and 2. Column 6 shows the differences between columns 4 and 5. Returns are in percentage points. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Raw Return			Size-BM Adjusted Return		
	Local	Nonlocal	Diff.	Local	Nonlocal	Diff.
	1	2	3	4	5	6
Distance = 0	1.491	1.013	0.478**	0.430	−0.094	0.525*
Distance < 100	1.403	0.997	0.406***	0.348	−0.112	0.460*
Distance < 200	1.440	0.961	0.479**	0.361	−0.148	0.509*

mutual funds suggests that these funds do enjoy substantial informational advantage in their investments of the local stocks. Our results are consistent with the evidence of superior investment performance of local holdings documented in Coval and Moskowitz (2001) and Baik et al. (2010) based on U.S. data.

B. Company Location and Mutual Fund Visits

We hypothesize that local information advantage arises from the more intensive mutual fund information acquisition activity in local firms. Location could affect investor information acquisition activities because geographic proximity to local firms reduces the cost of acquiring local information. More important, as Van Nieuwerburgh and Veldkamp (2009) argue, investors who enjoy some initial information advantage may further expand their advantage through greater information acquisition effort in these firms. To study the relation between fund-firm distance and company visits by mutual funds, we first conduct three univariate tests and present the results in Table 4. For each fund family, we classify stocks into 2×2 groups based on whether they are local stocks to the funds and whether they are held by the funds. In Panel A of Table 4, we calculate the number of visits as a proportion of the total number of SZSE stocks in each group for each fund family in each 6-month period and report the time-series average of the cross-sectional mean proportion across fund families. This measure takes into consideration the number of potential firms in each group that are available for each fund family to visit.

Columns 1–3 in Panel A of Table 4 show the average percentages of local and nonlocal visits by funds for the full sample of stocks. We find that mutual funds do indeed visit a greater fraction of local versus nonlocal companies. On average, mutual funds visit about 7.5% of local companies each half year, more than double their visits to nonlocal companies (3.7%). The differences are highly significant for all three definitions of local firms. As expected, when the definition of locality expands to include more distant firms, the ratio of local visits decreases.

We next split the full sample into two subsamples based on whether stocks are held by the funds at the end of period $t-1$. Columns 4–6 (7–9) in Panel A of Table 4

TABLE 4

Local and Nonlocal Site Visits

Table 4 presents the relation between fund-firm distance and site visits of mutual funds. The sample includes all actively managed equity funds and equity balanced funds in the fund families from Jan. 2007 to June 2017. The fund-level holdings are aggregated at the fund family level every half year. We independently sort stocks into 2 × 2 groups by whether they are local stocks and whether they are initially held by funds. Three definitions of local areas are used. A firm is considered local for a fund family if the distance between their cities is 0 km, less than 100 km, or less than 200 km. In Panel A, we report the average ratio of the number of visits to each group of stocks to the total number of Shenzhen Stock Exchange (SZSE) stocks in that group. In Panel B, we report the average ratio of the number of visits to each group of stocks to the total number of visits by each fund family. In Panel C, we report the average ratio of the number of repeat visits in each group of stocks to the total number of visits, where a visit is defined as a repeat visit if the fund family has visited the same company during the preceding 12-month period. Columns 1–3 show the results for local and nonlocal visits in full sample. Columns 4–6 show the results for local and nonlocal visits for stocks that are initially held. Columns 7–9 show the results for local and nonlocal visits for stocks that are not initially held. Column 3 shows the differences between Columns 1 and 2. Column 6 shows the differences between columns 4 and 5. Column 9 shows the differences between columns 7 and 8. *, **, and *** correspond to significance at the 10%, 5%, and 1% levels, respectively.

	Full Sample			With Initial Position			Without Initial Position		
	Local	Nonlocal	Diff.	Local	Nonlocal	Diff.	Local	Nonlocal	Diff.
	1	2	3	4	5	6	7	8	9
Panel A. (# of Visits)/(# of Stocks)									
Distance = 0	0.075	0.037	0.038*	0.160	0.101	0.059*	0.065	0.030	0.035*
Distance < 100	0.071	0.036	0.035*	0.159	0.100	0.059*	0.062	0.030	0.032*
Distance < 200	0.068	0.035	0.033*	0.158	0.095	0.062*	0.057	0.029	0.029*
Panel B. (# of Visits)/(# of Total Visits)									
Distance = 0	0.133	0.867	−0.734*	0.031	0.193	−0.162*	0.102	0.674	−0.572*
Distance < 100	0.172	0.828	−0.656*	0.038	0.187	−0.149*	0.134	0.641	−0.507*
Distance < 200	0.266	0.734	−0.468*	0.061	0.164	−0.103*	0.205	0.571	−0.366*
Panel C. (# of Repeat Visits)/(# of Total Visits)									
Distance = 0	0.309	0.223	0.086*	0.430	0.301	0.130*	0.271	0.186	0.084*
Distance < 100	0.304	0.219	0.085*	0.416	0.298	0.118*	0.270	0.182	0.088*
Distance < 200	0.303	0.210	0.093*	0.410	0.287	0.124*	0.260	0.175	0.085*

present the results for companies that are held (not held) by funds. Consistent with the full-sample results, for each definition of local companies in both subsamples, mutual funds visit a significantly greater fraction of local than nonlocal companies. For both local and nonlocal companies, mutual funds are more likely to visit companies in their portfolios than those that are not in their portfolios. As shown in columns 4 and 7, the frequency of mutual fund visits to local companies in their portfolios more than doubles the frequency of visits to local companies not in their portfolios (16.0% vs. 6.5% for companies located in the same city). Columns 5 and 8 show that mutual funds are also much more likely to visit nonlocal companies in their portfolios than nonlocal companies not in their portfolios (10.1% vs. 3.0% for companies located in the same city). Positions in a portfolio clearly affect information acquisition – mutual funds are more likely to visit nonlocal companies in their portfolios (column 5) than local companies not in their portfolios (column 7).

The results in Panel A of Table 4 provide evidence on the likelihood of a company receiving visits from a mutual fund given its geographic proximity to the fund. However, because there are typically far more nonlocal stocks than local stocks, the stock-level results do not provide sufficient information on how a mutual fund allocates its site visits between local and nonlocal firms. To compare such efforts, we scale the number of visits to each group of stocks by the total number of visits by each fund family in each period and report the time-series average of the mean ratios in Panel B of Table 4. Columns 1–3 show that, depending on the definition of locality, on average local (nonlocal) companies account for 13.3% (86.7%) to 26.6% (73.4%) of all mutual fund visits. Mutual funds visit far more nonlocal firms than local firms. This split in visit efforts is not totally surprising because there are more nonlocal than local firms for mutual funds. The result does reveal that even with the more intensive information acquisition efforts in local firms (Panel A of Table 4), mutual funds expend considerable effort acquiring information of nonlocal firms.

Columns 4–6 (7–9) in Panel B of Table 4 report results for companies held (not held) by mutual funds. In aggregate, mutual funds allocate slightly more than 20% of their visits to companies they hold (sum of columns 4 and 5) and close to 80% of their visits to companies they do not hold (sum of columns 7 and 8). Depending on the definition of local company, between 57.1% (20.5%) and 67.4% (10.2%) of total visits are made to nonlocal (local) companies that are not held by mutual funds, whereas these numbers are between 16.4% (6.1%) and 19.3% (3.1%) for nonlocal (local) companies that are held by mutual funds. Based on the number of visits, the splits between local and nonlocal stocks in both groups heavily favor nonlocal stocks. Most important, though, these results demonstrate that mutual funds devote more efforts to visiting stocks, not in their portfolios than those in their portfolios.

The results in Panels A and B of Table 4 provide an interesting contrast. At the stock level, mutual funds are more likely to visit stocks they currently hold and stocks that are located nearby. However, based on their overall visits, mutual funds devote a larger percentage of their efforts to nonlocal stocks and to stocks they do not own. Because information acquisition activities are typically not directly observable, studies on information acquisition or information advantage based on mutual fund portfolio holdings are unlikely to capture the information acquisition efforts in stocks that mutual funds do not hold. Consequently, analyses based on portfolio holdings likely substantially underestimate mutual fund information acquisition activities. The results suggest that mutual funds likely engage in considerable information gathering and analysis before initiating a position in a stock. Such information acquisition activity could help explain the highly positive performance of newly initiated stocks (Alexander et al. (2007)).

In Panel C of Table 4, we use mutual fund repeat visits to study the intensity and concentration of the information acquisition effort and to further examine the endogenous information acquisition prediction of Van Nieuwerburgh and Veldkamp (2009). We define a mutual fund visit as a repeat visit if the fund has visited the same company during the preceding 12-month period. We compute the ratio of the number of repeat visits to the total number of visits for each fund family in every half year and calculate the time-series average of the mean ratio across fund families. Columns 1–3 report the average ratio for the full sample. On average, repeat visits represent about 31% (22%) of total fund visits for local (nonlocal) companies. Mutual funds are most likely to have repeat visits in stocks they own (columns 4–6) than in stocks they do not own (columns 7–9). Although fund managers conduct a greater share of repeat local visits than nonlocal visits, perhaps the most surprising results are the high percentage of repeat visits in stocks not held by mutual funds. About 27% (19%) of local (nonlocal) visits in stocks not held by the funds are repeat visits. The results reveal the high concentration of information acquisition effort overall and the greater intensity in information acquisition in local than nonlocal firms. Fund managers expend great efforts accumulating information prior to establishing portfolio positions and further maintain and develop their advantage through continuing information acquisition activities. The evidence in Panel C of Table 4 provides direct support for the prediction in Van Nieuwerburgh and Veldkamp (2009). The requirement of further ongoing information acquisition effort can strengthen the effects of geographic distance on investment decisions.

We now study the relation between fund-firm distance and site visits of mutual funds in a multivariate framework. Because we observe in Table 4 that mutual fund site visit decisions can differ depending on whether they hold stocks in a company, we study the determinants of fund visits for the two subsamples of stocks separately. This approach also allows us to assess whether the size of fund holdings affects company visit decisions. To control for the fund and firm characteristics and other factors that may affect a fund's site visit decision, we estimate the following model:

$$\text{(1)} \quad \log\left(1+\text{VISITS}_{i,j,t}\right) = \beta_1 \text{LOCAL}_{i,j} + \beta_2 \text{HOLDING}_{i,j,t-1} + \text{FIRM\_CHAR}_{j,t-1} + \text{FUND}_{\text{FAMILY}} \times \text{TIME} + \text{FIRM}_{\text{CITY}} \times \text{TIME} + \varepsilon_{i,j,t},$$

where i denotes a fund family, j denotes a company, and t denotes the period. In each period t, a company is included in the regression if it is visited by any fund.

The dependent variable is the logarithm of one plus the number of visits by fund family i for company j in period t.[11] The variable of interest is LOCAL, which is an indicator variable that equals 1 if the distance between the city of a mutual fund and the city of a company is within a specified range, and 0 otherwise. As before, we consider three definitions for local firms. The variable HOLDING is the portfolio weight of the company's stock in the fund family overall holdings at the end of period $t-1$. This variable is omitted when we study the subsample of stocks that are not held by mutual funds. FIRM_CHAR represents an array of firm characteristics variables that include firm size (market value of equity), return on assets, a dummy for SOE, firm age, analyst coverage, assets growth, abnormal returns of the company's stock, standard deviation of stock returns, and share turnover. All these variables are measured at the end of period $t-1$.[12] The company characteristics may affect mutual fund investment decisions as well as visit decisions. We use the log value for the dependent variable and an ordinary least squares (OLS) regression because a large set of fixed effects can be included in the model. The fund family × time fixed effects control for all cross-sectional and time-series variations in mutual fund family characteristics pertaining to company visits, such as fund size, fund performance, style, and so on. Because funds may prefer to visit a city that has greater economic importance and public company agglomeration, or historical and cultural ties between the cities, we include firm city × time fixed effects to control for the effects of companies' location that may influence site visits. The standard errors are clustered at the fund family × firm city level.

[11]The results in our tests are qualitatively similar without the logarithm transformation of the number of visits.

[12]Definitions of these variables are provided in the Appendix, and summary statistics of these variables are available in the Supplementary Material.

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TABLE 5

Location and Site Visits

Table 5 presents the estimates from a series of ordinary least squares regressions. The dependent variable is the logarithm of the number of visits plus one. The sample includes all actively managed equity funds and equity balanced funds in the fund families from Jan. 2007 to June 2017. The fund-level holdings are aggregated at the fund family level every half year. Three definitions of local areas are used. A firm is considered local for a fund family if the distance between their cities is 0 km, less than 100 km, or less than 200 km. Columns 1–3 present the results for stocks that are initially held by funds. Columns 4–6 present the results for stocks that are not initially held by funds. The variable definitions are provided in the Appendix. The *t*-values are reported in parentheses. The standard errors are clustered at the fund family × firm city level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	With Initial Position			Without Initial Position		
	0	<100	<200	0	<100	<200
	1	2	3	4	5	6
LOCAL	0.081*	0.076*	0.064*	0.060*	0.053*	0.043*
	(14.65)	(16.43)	(17.84)	(17.28)	(19.32)	(19.95)
HOLDING	7.512*	7.487*	7.443*			
	(20.33)	(20.29)	(20.25)			
SIZE	0.003	0.003	0.003	0.009*	0.009*	0.009*
	(1.38)	(1.40)	(1.40)	(13.87)	(13.87)	(13.90)
ROA	0.141*	0.141*	0.139*	0.067*	0.067*	0.067*
	(4.85)	(4.83)	(4.78)	(8.24)	(8.23)	(8.25)
SOE	−0.001	−0.001	−0.002	−0.000	−0.000	−0.000
	(−0.40)	(−0.35)	(−0.50)	(−0.08)	(−0.08)	(−0.03)
AGE	−0.016*	−0.016*	−0.016*	−0.006*	−0.006*	−0.006*
	(−7.41)	(−7.43)	(−7.43)	(−11.99)	(−11.98)	(−12.00)
COVERAGE	0.004*	0.004*	0.004*	0.005*	0.005*	0.005*
	(2.67)	(2.68)	(2.77)	(14.66)	(14.65)	(14.61)
TA_GRO	−0.001	−0.001	−0.001	0.000	0.000	0.000
	(−0.48)	(−0.41)	(−0.50)	(0.27)	(0.25)	(0.29)
ABN_RET	0.020*	0.020*	0.020*	0.013*	0.013*	0.013*
	(5.56)	(5.57)	(5.57)	(12.35)	(12.35)	(12.35)
STDEV	0.508**	0.513**	0.515**	0.494*	0.493*	0.493*
	(2.04)	(2.06)	(2.07)	(8.06)	(8.04)	(8.06)
TURNOVER	−0.005*	−0.005*	−0.005*	−0.002*	−0.002*	−0.002*
	(−5.72)	(−5.82)	(−5.78)	(−11.33)	(−11.30)	(−11.32)
Fund family × time	Yes	Yes	Yes	Yes	Yes	Yes
Firm city × time	Yes	Yes	Yes	Yes	Yes	Yes
N	79,482	79,482	79,482	526,137	526,137	526,137
Adj. R^2	0.090	0.091	0.091	0.051	0.051	0.051

Regression results are presented in Table 5. Columns 1–3 present the results for stocks that are held at the end of period $t-1$. In column 1, a company is considered local for a fund family if both are in the same city. We find that the coefficient on the local dummy is positive and highly significant, indicating mutual funds conduct more site visits to local firms after controlling for an array of firm characteristics. For example, for firms held by each fund family, the coefficient of 0.081 represents 0.084 more visits per local firm than nonlocal firm in each period, which is an increase of 83% from the average 0.101 visits per nonlocal firm.[13] The economic magnitude is large given that we control for the effects of fund family, company, and location. The coefficient on HOLDING is positive and significant,

[13]The number of visits per firm from each mutual fund family in each period is small. Therefore, for each mutual fund family, we have $\frac{\text{NUMBER\_OF\_VISITS\_PER\_LOCAL\_FIRM}-\text{NUMBER\_OF\_VISITS\_PER\_NONLOCAL\_FIRM}}{1+\text{NUMBER\_OF\_VISITS\_PER\_NONLOCAL\_FIRM}} \approx$ $\text{NUMBER\_OF\_VISITS\_PER\_LOCAL\_FIRM} - \text{NUMBER\_OF\_VISITS\_PER\_NONLOCAL\_FIRM} = \exp(\beta_1) - 1.$ Column 5 in Panel A of Table 4 shows that the average number of visits to each nonlocal firm held by each fund family is 0.101.

suggesting mutual funds make more visits to firms in which they have larger stakes. In columns 2 and 3 of Table 5, we vary the definition of locality and consider a company local if it is located within 100 and 200 km of the fund city, respectively. The results are quantitatively similar to those in column 1. As expected, the coefficient on LOCAL decreases in magnitude as the local definition expands to cover more distant areas.

Columns 4–6 of Table 5 present the results for stocks that are not held by the mutual funds. The sample size is much larger than in columns 1–3. Again, we find that mutual funds conduct more visits to local versus nonlocal firms for stocks they do not own. HOLDING is omitted in these models because it is 0 for all firms in this sample by design. The findings are robust across the two subsamples.[14]

A few comparisons stand out between the results of these two subsamples. Mutual funds are more likely to visit large companies when the stocks of these firms are not held by the funds. The preference for large firms may reflect general mutual fund preference for liquidity, but it may also reflect concentrated information acquisition efforts in a small number of stocks that allow mutual funds to establish greater information advantage (Van Nieuwerburgh and Veldkamp (2010)). In comparison, when mutual funds own the stocks, portfolio weight rather than firm size affects visit decisions. Mutual funds are also more likely to visit companies with greater analyst coverage, and this holds for stocks that are held and not held by mutual funds. Financial analyst coverage and fund information acquisition may be driven by similar factors. Specifically, greater analyst coverage may indicate stronger demand for information by institutional clients (see, e.g., O'Brien and Bhushan (1990)). For both subsamples, funds are more likely to visit firms with good stock price performance, younger firms, and firms with greater return volatility. The latter two firm characteristics are proxies for information uncertainty and hence value of information acquisition.[15] Overall, the key finding in Table 5 is that mutual funds are more likely to visit local than nonlocal companies, regardless of whether they hold the stocks in their portfolios.

We conduct two robustness checks. First, because our sample focuses on firms listed on the SZSE, mutual funds based in Shenzhen may acquire information differently because of the location of SZSE. We exclude funds located in Shenzhen, about one-fourth of the sample, and repeat the tests in Table 5. The exclusion of Shenzhen-based mutual funds does not affect the findings, and the results are similar to those in Table 5. Second, we consider unique and repeat visits separately. As defined earlier, a repeat (unique) visit is a fund's visit to a firm with (without) prior visits by the same fund to the same firm in the preceding 12 months. Unique visits include first-ever visits to a firm and visits with a substantial time gap. Similar to the full-sample results, we find mutual funds are more likely to conduct both unique and repeat visits to local companies than nonlocal companies. These results

[14]We also obtain results based on the full sample of observations. The results are largely consistent with the subsample results and are especially similar to the results for the subsample of not-held stocks, as this subsample constitutes a large portion of the full sample.

[15]In untabulated results, we also include book-to-market ratio as an additional control variable in various specifications. This variable is insignificant and does not affect the main results. We omitted this variable because of its high correlation with other firm characteristic variables such as return on equity and asset growth.

(available in the Supplementary Material) hold regardless of whether the stocks are in the fund portfolios.

V. Distance, Travel, and Site Visits

If geographic distance affects the information acquisition activities of mutual funds because long distance increases information acquisition costs, we expect that ease of travel between cities will affect site visits. As the ease of travel alleviates the geographic distance constraint by reducing the overall cost (time, effort, etc.) of nonlocal visits, there should be more site visits to firms located in cities that are easier to reach by fund managers. Investigating how travel between fund and firm cities affects fund visits allows us to determine the causality of the results documented in the previous section and to provide further insights on the role of geographic location in information acquisition.

In this section, we formally test this idea by exploiting the phenomenal development of the HS train system in China that significantly changed public transport between cities. We use the staggered introduction of HS train connection that improves the ease of travel between funds and firms as a quasi-natural experiment and develop a difference-in-differences approach to estimate the causal impact of proximity on information acquisition.

For the tests, we manually collect information on the opening of HS train stations in each Chinese city from the National Railway Administration and compute the travel time between the headquarters of each fund family and each firm specifically for the second test.[16] Figure 2 shows the HS train network by the end of 2008 (Graph A) and by the end of 2017 (Graph B). The large circle on the map

FIGURE 2

High-Speed Train Network in China

Figure 2 depicts the high-speed train network in China by the end of 2008 (Graph A) and by the end of 2017 (Graph B). Large circles denote municipalities directly under the Chinese Central Government or a provincial capital, and small circles denote other cities. Lines represent connections between two cities. For figure brevity, the city of Sansha in Hainan Province is omitted.

Graph A. By The End of 2008 *Graph B. By The End of 2017*

[16]See the Appendix for details on the computation of pairwise travel times, which are based on optimized combinations of transport segments (e.g., driving, trains, and flights). We provide institutional details of the HS railway system in China in the Supplementary Material.

denotes a municipality or provincial capital, and the small circle denotes prefecture-level cities. The line connecting two circles represents the HS route between two cities. The number of HS train routes increases quickly during our sample period. At the end of 2008, there were only four HS train routes and they were disconnected from each other.[17] By the end of 2017, the HS train routes constitute a national network that connects all major cities. We use these rapid transport changes as a source of exogenous variation in proximity between fund managers and firms.

Our tests examine the changes in site visits both at the fund family × firm city level and the fund family × firm level. Specifically, in the first test, we define a pair of cities hosting funds and firms as treated if a direct HS train connection is established between the two cities. In the second test, we define a fund family–firm pair as treated if the introduction of an HS train reduces travel time between the two headquarters. Our empirical setting allows us to identify the treatment effect by comparing different fund families' visits to the same cities (firms), before and after travel convenience improves for a subset of these fund families. This identification strategy rules out potential confounding factors such as unobservable time-varying firm fundamentals and pair-specific time-invariant heterogeneities such as the familiarity effects in fund information acquisition and investment decisions (e.g., Pool et al. (2012)).

Panel A of Table 6 presents the number of cities that opened their first HS train station in each year, the number of firms in these cities, and the number of fund family–firm pairs that experience travel time reductions after the connection to the HS rail system.[18] The number of cities with newly opened HS train stations varies over time, starting in 2008, peaking at 34 in 2014, and declining afterward. The number of firms and fund family–firm pairs exposed to these events are the largest in 2010 and 2011. Panel B of Table 6 presents summary statistics for our fund family–firm pair level difference-in-differences sample, which includes only observations of firms that form at least one pair that experiences travel time reductions.[19] Although never-treated pairs generally have longer distances, the two groups have similar travel times before the treatment.

At the fund family–firm city pair level, we estimate the following difference-in-differences model:

$$(2)\quad \log(1+\text{VISITS}_{i,k,t}) = \beta_1 \text{TREATMENT}_{i,k,t-1} + \text{FUND}_{\text{FAMILY}} \times \text{FIRM}_{\text{CITY}} + \text{FUND}_{\text{FAMILY}} \times \text{TIME} + \text{FIRM}_{\text{CITY}} \times \text{TIME} + \varepsilon_{i,k,t}.$$

The dependent variable is the number of visits by fund i to city k in period t. The variable of interest is TREATMENT, which is an indicator variable that equals 1 if a direct HS train connection between the fund city and the firm city is established before period t, and 0 otherwise. As in equation (1), fund family × time and firm city × time fixed effects are included. In addition, we include fund

[17]From the top to bottom, these routes are Shenyang to Qinhuangdao, Beijing to Tianjin, Jinan to Qingdao, and Nanjing to Hefei.

[18]There is no treated pair in 2008 because HS stations opened in 2008 did not affect travel times of fund managers by our definition.

[19]Results are qualitatively and quantitatively similar if we use the full sample in the estimation because pairs formed by other firms do not provide any within-firm variation in the treatment status.

TABLE 6

The Introduction of High-Speed Trains in China

Panel A of Table 6 summarizes the introduction of high-speed trains in China during the sample period. Column 1 shows the number of cities that have their first high-speed train stations opened in each year. Column 2 shows the number of firms listed on the Shenzhen Stock Exchange (SZSE) in these cities when the high-speed train stations are first opened. Column 3 shows the number of fund family–firm pairs that ever experience travel time reductions induced by the introduction of high-speed trains in each event year. Panel B presents summary statistics for the fund family–firm pair level difference-in-differences sample. Never-treated pairs are fund family–firm pairs formed by SZSE-listed firms that form at least one ever treated pair with other fund families.

Panel A. Introduction of High-Speed Trains

Period Ending	City 1	SZSE Firm 2	Ever Treated Pairs 3
2006	0	0	0
2007	0	0	0
2008	9	103	0
2009	18	125	118
2010	18	191	2,646
2011	16	238	2,825
2012	19	38	861
2013	15	96	166
2014	32	96	209
2015	19	45	29
2016	9	45	205

Panel B. Summary Statistics

	Ever Treated Pairs			Never Treated Pairs		
	N	Mean	Std. Dev.	*N*	Mean	Std. Dev.
No. of Visits	56,782	0.04	0.20	193,416	0.03	0.19
Distance (km)	56,782	492.1	202.4	193,416	1,077.9	403.5
Travel time (min)	56,782	335.7	70.9	193,416	362.4	84.1

family × firm city fixed effects, which capture all time-invariant factors for each fund–firm city pair. Because of this extensive set of fixed effects included in the model specification, other control variables are omitted. The identifying assumption is that conditional on the treatment and the fixed effects, the HS train introduction events are uncorrelated with site visits. This assumption is weak and plausible because the HS network is entirely designed by the Chinese government and the construction of each route typically requires 3–5 years before the predetermined introduction event.

Panel A of Table 7 reports the results for samples of nonlocal visits. We exclude cities within a specified distance range from the sample, as visits to these cities are considered local visits. In all columns, the coefficients of TREATMENT are positive and significant, suggesting that mutual funds conduct more visits to cities with HS train connections than to cities without connections. Therefore, after direct HS train connections were introduced between the fund and firm cities, fund managers increased visits to firms. The evidence shows that ease of travel has a causal effect on mutual fund site visit decisions, so it supports our hypothesis that distance and its associated cost affect the information acquisition decisions of mutual funds.

The empirical identification in equation (2) comes from comparing the change in visits between a pair of cities that experience a shock to their transportation mode with the change in visits between a pair of cities that do not experience a shock. One concern with the difference-in-differences approach is that the estimated treatment effect could be due to pretreatment differences in the characteristics of

TABLE 7

Difference-in-Differences Tests for Fund–Firm City Pairs

Table 7 presents estimates for different samples of nonlocal visits from a series of ordinary least squares regressions. The sample includes all actively managed equity funds and equity balanced funds in the fund families from Jan. 2007 to June 2017. The dependent variable is the logarithm of one plus the number of visits to a city by a fund family in each period. In Panel A, TREATMENT is a dummy variable that equals 1 if the fund family city and firm city are directly connected by the high-speed train network, and 0 otherwise. In Panel B, lags and leads of TREATMENT are used. Three definitions of nonlocal areas are used in columns 1–3. A firm is considered nonlocal for a fund if the distance between their cities is more than 0 km, more than 100 km, or more than 200 km. The *t*-values are reported in parentheses. The standard errors are clustered at the fund family × firm city level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	>0	≥100	≥200
	1	2	3
Panel A. Difference-in-Differences Estimates			
TREATMENT	0.078*	0.068*	0.046*
	(7.07)	(5.79)	(3.80)
Time	Yes	Yes	Yes
Fund family × firm city	Yes	Yes	Yes
Fund family × time	Yes	Yes	Yes
Firm city × time	Yes	Yes	Yes
N	139,691	136,620	131,043
Adj. R^2	0.538	0.536	0.515
Panel B. Dynamics of the Treatment Effect			
TREATMENT (−2)	0.013	0.025	0.027
	(0.70)	(1.24)	(1.25)
TREATMENT (−1)	0.019	0.007	−0.007
	(0.91)	(0.30)	(−0.29)
TREATMENT (0)	0.041**	0.034***	0.017
	(2.13)	(1.68)	(0.81)
TREATMENT (+1)	0.069*	0.070*	0.057**
	(3.40)	(3.29)	(2.37)
TREATMENT (+2)	0.092*	0.079*	0.052*
	(6.98)	(5.68)	(3.65)
Fund family × firm city	Yes	Yes	Yes
Fund family × time	Yes	Yes	Yes
Firm city × time	Yes	Yes	Yes
N	139,691	136,620	131,043
Adj. R^2	0.538	0.536	0.515

treated and control groups. To address this concern, we examine the dynamics of mutual fund site visits around the introduction of new HS train connections by adding two leads (before treatment) and two lags (after treatment) of TREATMENT in equation (2). The leads, TREATMENT(−1) and TREATMENT(−2), can control for pretreatment effects, and the lags, TREATMENT(+1) and TREATMENT(+2), can trace the treatment effects in the periods after the initial shock.

The estimates based on this new specification are reported in Panel B of Table 7. The dynamics of site visits around HS train connections strongly support our hypothesis. First, we do not find an anticipatory effect. The lead TREATMENT variables are not significant, indicating that funds do not pay more visits before an HS train connection. Second, funds pay more visits to a city right after an HS train connection and continue to do so in the following periods. The significant effect of the lag TREATMENT variables suggests that the impact of the shock to ease of travel is long-lasting and that the effect of HS train connections strengthens over time.

After showing that the introduction of HS trains has a positive effect on site visits at the city pair level, we proceed to quantify this effect at the fund-firm pair

TABLE 8

Difference-in-Differences Tests for Fund-Firm Pairs

Table 8 presents estimates for nonlocal visits from a series of ordinary least squares regressions. The sample includes all actively managed equity funds and equity balanced funds in the fund families from Jan. 2007 to June 2017. The dependent variable is the logarithm of one plus the number of visits to a firm by a fund family in each period. TREATMENT is a dummy variable that equals 1 if high-speed train that reduces travel time between the office locations of fund family and firm is in service during the period, and 0 otherwise. In columns 2 and 3, TREATMENT is further interacted with dummy variables that capture time-invariant cross-sectional heterogeneities. LARGE is a dummy variable that equals 1 if the introduction of high-speed rail lines reduces travel time by at least 60 minutes in a one-way trip, and SMALL is a dummy variable that equals 1 if the travel time reduction is less than 60 minutes. FAR (NEAR) is a dummy variable that equals 1 if the geographical distance between the two locations in a pair is larger (smaller) than 500 km. Standard errors are two-way clustered at the fund family level and the firm's China Securities Regulatory Commission (CSRC) industry class level. The *t*-values are reported in parentheses. *, **, and *** represent 10%, 5%, and 1% levels of significance, respectively.

	1	2	3
TREATMENT	0.007***		
	(3.62)		
TREATMENT × LARGE		0.008**	
		(2.56)	
TREATMENT × SMALL		0.006	
		(1.49)	
TREATMENT × FAR			0.010**
			(2.43)
TREATMENT × NEAR			0.003
			(1.06)
Fund family × firm	Yes	Yes	Yes
Fund family × time	Yes	Yes	Yes
Firm × time	Yes	Yes	Yes
N	256,434	256,434	256,434
Adj. R^2	0.12	0.12	0.12

level. We set the dependent variable to be the number of visits by fund *i* to firm *j* in period *t* and further tighten the identification by replacing the firm city indicator with a firm indicator. In this specification, TREATMENT is an indicator variable that equals 1 if the HS train connection that reduces travel time between the office locations of fund family *i* and firm *j* is in service at the beginning of period *t*.

We report the estimation results in Table 8. The baseline point estimate in column 1 is positive and statistically significant. This result shows that mutual fund families increase their visits to firms after travel time reductions resulting from the establishment of the HS train connection. Columns 2 and 3 explore cross-sectional differences in this treatment effect. In column 2, we test whether larger reductions in travel times have a stronger effect on site visits. To do so, we interact TREATMENT with two dummy variables, LARGE and SMALL, which equal 1 if the HS train reduces the one-way travel time by more than 1 hour and less than 1 hour, respectively. Consistent with the ease-of-travel channel, the estimates show that the effect is stronger for pairs that experience larger travel time reductions. Next, we divide treated pairs into FAR and NEAR groups, depending on whether the distance between the addresses of the fund family and the firm headquarters is greater than 500 km. Column 3 shows that the effect on site visits is stronger for distant treated pairs.[20]

Overall, the evidence in Tables 7 and 8 shows that the establishment of HS train connections has a significant impact on the information acquisition activities

[20]In the Supplementary Material, we show that the parallel-trend assumption underlying the difference-in-differences estimator for the fund-firm pairs is not violated.

of mutual funds. Giroud (2013) uses the introduction of new airline routes as an exogenous shock to communication between firm headquarters and plants and finds that new airline routes between firm headquarters and plants lead to an increase in plant-level investment and total factor productivity. Similarly, Ellis et al. (2020) find that the introduction of direct flights between a fund and an MSA leads to an increase in the fund's aggregate investment in the firms in the area. Although these studies establish causal effects by exploiting the exogenous shocks, they do not show direct evidence of information acquisition or information flow. Our article exploits the shocks to ease of travel between fund and firm locations and establishes the effect on directly observable mutual fund information acquisition activities.

VI. Site Visits, Investment Decisions, and Performance

In Section III, we present evidence that Chinese mutual funds exhibit strong local preference in their portfolio holdings and that these mutual funds seem to benefit from such local preference, as their local holdings outperform nonlocal holdings. In Sections IV and V, we show that geographic proximity affects mutual fund site visits. In this section, we study how site visits affect mutual fund investment decisions and performance. The analysis offers direct support for the assumption that site visits are a form of information acquisition activity by mutual funds and can provide evidence for the missing link between local preference and local holding performance.

A. Site Visits, Mutual Fund Trading, and Profit

We first examine whether company visits are associated with mutual fund investment decisions in the visited stocks. As shown in the previous sections, mutual funds devote substantial effort visiting firms inside and outside of their portfolios. If such site visits represent important information gathering by mutual funds, through which the funds can reduce the noise of their information signals or acquire new information, these site visits should lead to changes in mutual fund portfolio positions in the visited stocks. To formally test this conjecture, we first estimate the following model:

$$\text{(3)} \quad |\text{HOLDING\_CHG}|_{i,j,t} = \beta_1 \text{LOCAL}_{i,j} + \beta_2 \times \log\left(1 + \text{VISIT}_{i,j,t}\right) + \text{FIRM\_CHAR}_{j,t-1} + \text{FUND}_{\text{FAMILY}} \times \text{TIME} + \text{FIRM}_{\text{CITY}} \times \text{TIME} + \varepsilon_{i,j,t},$$

where the notations follow the previous models. The dependent variable is the absolute value of the holding change of a mutual fund i on the stock of company j in period t. In particular,

$$\text{(4)} \quad |\text{HOLDING}_{\text{CHG}}| = \frac{|\text{SHR}_{\text{end}} - \text{SHR}_{\text{beg}}| \times \text{PRC}_{\text{beg}}}{\text{TNA}_{\text{beg}}},$$

where SHR_{beg} is the number of shares of firm j held by fund i at the beginning of the period, SHR_{end} is the number of shares of firm j held by fund i at the end of the period, PRC_{beg} is the share price of stock i at the beginning of the period, and

TNA_{beg} is the total net asset value of the mutual fund at the beginning of the period. A company is included in the estimation if it is held by the mutual fund at either the beginning or the end of the period.

In the regression equation (3), we use site visits to firms to explain fund holding changes in the same period, which allows us to study the impact of mutual fund visits on mutual fund investment decisions. Ideally, we should use site visits from the previous period to explain subsequent changes in fund holdings. However, given the low frequency of the holding data (every half year), we can only observe fund holding changes over a half-year period. It is reasonable to assume that if there is a relation between site visits and holding changes, mutual funds are likely to make investment decisions after rather than before site visits. Consequently, for the full sample, we examine the relation between site visits and investment decisions in the same period.[21]

Columns 1–3 in Panel A of Table 9 present results for stocks that are held by mutual funds at the end of the previous period, so the holding change during the period can represent either buying or selling. Columns 4–6 present the results for stocks that are not held by mutual funds, so the holding change can only be buying. In all columns, the number of visits has a positive and significant impact on the holding changes of mutual funds. When we further separate the previously held stocks into buy and sell groups and reestimate equation (3), we find that visits are positively and significantly associated with subsequent buying and selling activities.[22]

Note that mutual funds are more likely to visit local firms, for both stocks they own and stocks they do not own. The highly significant effect of site visits on fund holding changes could suggest that mutual funds are likely to trade local stocks more frequently because they are also more likely to acquire and update information about these stocks.[23] This result provides an important insight into mutual fund portfolio holding decisions. The local bias documented in Table 2 is not driven by distance per se. Rather, geographic proximity lowers the cost of information acquisition which at least partly drives mutual fund investment decisions in local stocks.

We next study whether site visits affect the trading profit of mutual funds. For each 6-month period, Chinese mutual funds disclose their stock buy and sell values (separately, in RMB), which provide rich information on short-term trading activities. These values are cumulative cash flows generated from all material stock trades: Whenever a fund's purchase volume of a stock exceeds 2% of period-beginning fund TNA, the fund discloses the cumulative amount of money spent on buying this stock.[24] The disclosure requirement for the cumulative amount of

[21]We separately examine the relation between early visits (visits in the first 2 months of the 6-month period) and holding changes in the same 6-month period and the relation between late visits (visits in the last 2 months of the 6-month period) and holding changes in the next half-year period. Results from these subsamples confirm the full sample findings and are reported in the Supplementary Material.

[22]Results are available in the Supplementary Material.

[23]In a different specification, we add an interaction term between LOCAL and VISITS in equation (3). The interaction term is not significantly related to fund trading decisions.

[24]If a fund has fewer than 20 stocks that satisfy this criterion during a period, then the fund discloses the cumulative amount of money spent in buying each of the top-20 stocks in terms of purchase volume.

TABLE 9
Company Visits and Fund Trading

Table 9 presents the estimates from a series of ordinary least squares regressions. In Panel A, the dependent variable is the absolute value of holding change of mutual funds. In Panel B, the dependent variable is the trading profit. The sample includes all actively managed equity funds and equity balanced funds in the fund families from Jan. 2007 to June 2017. The fund-level holdings are aggregated at the fund family level every half year. Three definitions of local areas are used. A firm is considered local for a fund family if the distance between their cities is 0 km, less than 100 km, or less than 200 km. Columns 1–3 present the results for stocks that are initially held by fund families. Columns 4–6 present the results for stocks that are not initially held by fund families. The variable definitions are provided in the Appendix. The *t*-values are reported in parentheses. The standard errors are clustered at the fund family × firm city level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	With Initial Position			Without Initial Position		
	0	<100	<200	0	<100	<200
	1	2	3	4	5	6
Panel A. Trading						
LOCAL	−0.010***	−0.005	0.000	−0.000	−0.001	−0.001
	(−1.82)	(−1.03)	(0.06)	(−0.39)	(−1.08)	(−1.37)
VISITS	0.089*	0.089*	0.088*	0.042*	0.042*	0.042*
	(16.90)	(16.87)	(16.90)	(25.93)	(25.95)	(25.95)
SIZE	0.071*	0.071*	0.071*	0.014*	0.014*	0.014*
	(23.91)	(23.91)	(23.90)	(26.47)	(26.47)	(26.47)
ROA	0.110*	0.110*	0.110*	0.036*	0.036*	0.036*
	(2.93)	(2.93)	(2.92)	(6.34)	(6.34)	(6.34)
SOE	−0.015*	−0.015*	−0.015*	−0.000	−0.000	−0.000
	(−3.74)	(−3.74)	(−3.74)	(−0.38)	(−0.38)	(−0.38)
AGE	0.006*	0.006*	0.006*	−0.001*	−0.001*	−0.001*
	(2.58)	(2.59)	(2.58)	(−2.91)	(−2.90)	(−2.90)
COVERAGE	0.009*	0.009*	0.009*	0.003*	0.003*	0.003*
	(4.97)	(4.98)	(4.99)	(16.52)	(16.52)	(16.52)
TA_GRO	−0.002	−0.002	−0.002	−0.000	−0.000	−0.000
	(−0.86)	(−0.85)	(−0.85)	(−1.11)	(−1.11)	(−1.11)
ABN_RET	0.046*	0.046*	0.046*	0.007*	0.007*	0.007*
	(8.89)	(8.89)	(8.88)	(7.16)	(7.16)	(7.16)
STDEV	2.235*	2.237*	2.241*	0.166*	0.166*	0.166*
	(7.99)	(8.01)	(8.02)	(4.07)	(4.07)	(4.06)
TURNOVER	−0.005*	−0.005*	−0.005*	−0.001*	−0.001*	−0.001*
	(−6.38)	(−6.37)	(−6.38)	(−4.64)	(−4.64)	(−4.64)
Fund family × time	Yes	Yes	Yes	Yes	Yes	Yes
Firm city × time	Yes	Yes	Yes	Yes	Yes	Yes
N	73,618	73,618	73,618	487,901	487,901	487,901
Adj. R^2	0.321	0.321	0.321	0.069	0.069	0.069
Panel B. Profit						
LOCAL	−1.136***	−0.706	−0.585	0.222**	0.197**	0.124***
	(−1.74)	(−1.18)	(−1.18)	(2.20)	(2.37)	(1.92)
VISITS	4.151*	4.131*	4.136*	4.012*	4.010*	4.014*
	(4.90)	(4.87)	(4.89)	(22.26)	(22.24)	(22.28)
SIZE	−1.606*	−1.605*	−1.605*	0.879*	0.879*	0.879*
	(−4.48)	(−4.48)	(−4.48)	(15.86)	(15.86)	(15.86)
ROA	34.378*	34.368*	34.380*	3.973*	3.973*	3.972*
	(6.69)	(6.69)	(6.69)	(7.00)	(7.00)	(6.99)
SOE	0.431	0.430	0.434	−0.063	−0.063	−0.063
	(0.79)	(0.79)	(0.79)	(−1.10)	(−1.10)	(−1.10)
AGE	−0.564***	−0.564***	−0.564***	−0.005	−0.005	−0.005
	(−1.90)	(−1.90)	(−1.90)	(−0.18)	(−0.18)	(−0.18)
COVERAGE	0.088	0.090	0.088	0.266*	0.266*	0.266*
	(0.37)	(0.38)	(0.37)	(11.76)	(11.76)	(11.76)
TA_GRO	0.104	0.104	0.106	−0.109**	−0.109**	−0.109**
	(0.25)	(0.25)	(0.25)	(−2.43)	(−2.43)	(−2.43)
ABN_RET	−3.399*	−3.400*	−3.400*	0.104	0.104	0.104
	(−3.73)	(−3.73)	(−3.73)	(1.06)	(1.06)	(1.06)
STDEV	−216.430*	−216.287*	−216.310*	21.340*	21.336*	21.335*
	(−5.06)	(−5.05)	(−5.05)	(4.96)	(4.96)	(4.96)
TURNOVER	−0.175	−0.174	−0.175	−0.059*	−0.059*	−0.059*
	(−1.35)	(−1.35)	(−1.35)	(−5.10)	(−5.09)	(−5.09)
Fund family × time	Yes	Yes	Yes	Yes	Yes	Yes
Firm city × time	Yes	Yes	Yes	Yes	Yes	Yes
N	73,510	73,510	73,510	484,587	484,587	484,587
Adj. R^2	0.201	0.201	0.201	0.064	0.064	0.064

money received from stock sales is the same. Similar to Irvine, Lipson, and Puckett (2006), we combine mutual fund end-of-period stock holdings and intraperiod cumulative stock trades data to construct a pair-level trading profits measure:

$$(5)\quad \text{PROFIT}_{i,j,t-1\to t} = \text{HOLDING}_{i,j,t} + \text{SELL}_{i,j,t-1\to t} - \text{BUY}_{i,j,t-1\to t} - \text{HOLDING}_{i,j,t-1},$$

where BUY (or SELL) is the cumulative absolute RMB values that fund family i pays for purchasing (or receives from selling) firm j's stock between the ends of period $t-1$ and period t. To adjust for cash dividends, we add back dividend payments based on the average number of shares held by a fund family at the beginning and end of a period.[25]

We use this measure of trading profit as the dependent variable and reestimate equation (3) and report the results in Panel B of Table 9. In all columns, the number of visits is positively and significantly related to the trading profit, indicating that mutual funds capture investment profits by trading on information acquired during these site visits.

B. Site Visits and Stock Portfolio Performance

In this subsection, we further examine whether and how site visits affect the trading performance of mutual fund portfolios by studying the post-visit cumulative abnormal returns. Again, because of the low frequency of observed fund holding changes, our calculation relies on the trading activities of visiting mutual funds during the concurrent period. This approach reflects the returns that mutual funds could earn through their trades shortly after the visits.[26] The computation is as follows: At the end of each month j within reporting period t, we group all stocks visited by funds in month j into five portfolios based on whether the stock is held by the fund at the beginning of period t and how the fund trades the stock in period t. We divide the visited stocks that are not held into portfolios of visit-buy and visit-no-act, and stocks that are held into portfolios of visit-buy, visit-sell, and visit-no-act. We examine both equally weighted and trade-value-weighted portfolio returns in month $j+1$, from months $j+1$ to $j+3$, and from months $j+1$ to $j+6$. The trade value in the value-weighted return result is the dollar value of fund holding changes in period t, as defined in equation (4). The returns are adjusted by equally weighted size and book-to-market benchmark returns. The results are robust when value-weighted benchmark portfolios are used. For brevity, we report results based on one definition of locality, where a firm is considered local for a fund if the distance between their cities is less than or equal to 100 km. Results are similar when alternative definitions of locality are used.

Panel A of Table 10 presents post-visit 1-month performance. For stocks that are not held at the beginning of period t, the equally (trade-value) weighted

[25]The exact number of shares held on the date when the firm pays out dividends is not observable. However, ignoring dividends, or adjusting for dividends in different ways, has no material influence on our results.

[26]An alternative approach is to examine stock returns over the next period after observing visit and trading activities in the previous (half-year) period. Because this incurs a substantial lag in computed trading returns, we find that the tests lack statistical power in untabulated results.

TABLE 10
Visits, Trading, and Stock Performance

Table 10 presents the performance of stock portfolios based on mutual fund trading activities and site visits. The sample includes all actively managed equity funds and equity balanced funds in the fund families from Jan. 2007 to June 2017. The fund-level holdings are aggregated at the fund family level every half year. At the end of each month *j* within period *t*, we sort all stocks visited by fund families in month *j* into five portfolios based on whether the stock is held by the fund family at the beginning of period *t* and how the fund family trades the firm's stock in period *t*. We examine both the equally weighted (EW) and trade value-weighted (VW) portfolio performance in month $j+1$ in Panel A, from months $j+1$ to $j+3$ in Panel B, and from months $j+1$ to $j+6$ in Panel C, using the size and book-to-market adjusted cumulative abnormal returns. Returns are in percentage points. In each panel, we present the results based on the full sample, the sample of local and nonlocal stocks, and the sample of initially held and not held stocks. A firm is considered local for a fund family if the distance between their cities is less than 100 km. The *t*-values are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Without Initial Position			With Initial Position				
	Buy	No Act	1–2	Buy	Sell	No Act	4–5	1–4
	1	2	3	4	5	6	7	8
Panel A. One-Month Post-Visit Adjusted Return								
EW								
Full sample	1.131*	−0.052	1.183*	0.598	−0.235	−0.225	0.833***	0.533
	(4.01)	(−0.15)	(2.68)	(1.55)	(−0.92)	(−0.19)	(1.80)	(1.12)
Local	1.315**	1.371	−0.056	0.618	−0.690	−1.983	1.308	0.697
	(2.17)	(0.75)	(−0.03)	(0.92)	(−1.25)	(−1.21)	(1.50)	(0.77)
Nonlocal	1.035*	−0.336	1.371*	0.644***	−0.255	−0.073	0.899***	0.391
	(3.53)	(−1.49)	(3.71)	(1.67)	(−0.94)	(−0.06)	(1.91)	(0.81)
VW								
Full sample	1.146*			0.649	−0.306		0.955***	0.497
	(4.06)			(1.64)	(−1.08)		(1.96)	(1.02)
Local	1.270**			0.659	−0.799		1.458***	0.610
	(2.07)			(0.96)	(−1.50)		(1.68)	(0.66)
Nonlocal	1.053*			0.715***	−0.341		1.057**	0.338
	(3.62)			(1.81)	(−1.16)		(2.14)	(0.69)
Panel B. Three-Month Post-Visit Adjusted Return								
EW								
Full sample	3.195*	0.138	3.058*	1.897*	−1.208***	−2.573	3.104*	1.299
	(4.96)	(0.21)	(3.36)	(2.75)	(−1.88)	(−1.55)	(3.30)	(1.38)
Local	3.665*	1.838	1.827	3.317*	−1.424	−2.848	4.471*	0.348
	(3.67)	(0.66)	(0.62)	(3.08)	(−1.42)	(−0.76)	(3.22)	(0.24)
Nonlocal	2.881*	−0.318	3.199*	1.653**	−1.323**	−2.575	2.976*	1.228
	(4.27)	(−0.66)	(3.86)	(2.40)	(−1.98)	(−1.47)	(3.10)	(1.27)
VW								
Full sample	3.343*			1.987*	−1.410**		3.397*	1.356
	(5.22)			(2.87)	(−2.00)		(3.43)	(1.44)
Local	3.675*			3.283*	−1.203		4.490*	0.392
	(3.74)			(3.01)	(−1.14)		(2.96)	(0.27)
Nonlocal	3.047*			1.827*	−1.512**		3.339*	1.220
	(4.63)			(2.63)	(−2.09)		(3.33)	(1.28)
Panel C. Six-Month Post-Visit Adjusted Return								
EW								
Full sample	4.883*	−0.425	5.308*	3.922*	−1.298	−1.749	5.221*	0.960
	(4.07)	(−0.59)	(3.79)	(3.52)	(−1.08)	(−0.93)	(3.19)	(0.59)
Local	4.509*	0.421	4.088***	7.112*	−0.111	2.655	7.224*	−2.603
	(2.90)	(0.22)	(1.67)	(3.62)	(−0.08)	(0.54)	(2.99)	(−1.04)
Nonlocal	4.715*	−0.906	5.621*	2.908*	−1.758	−1.251	4.666*	1.807
	(3.71)	(−1.29)	(3.87)	(2.69)	(−1.45)	(−0.58)	(2.87)	(1.08)
VW								
Full sample	4.925*			4.128*	−1.410		5.537*	0.797
	(4.06)			(3.68)	(−1.06)		(3.19)	(0.48)
Local	4.434*			7.444*	0.001		7.443*	−3.010
	(2.86)			(3.78)	(0.00)		(3.01)	(−1.20)
Nonlocal	4.767*			3.103*	−1.888		4.991*	1.665
	(3.72)			(2.86)	(−1.41)		(2.90)	(0.99)

abnormal returns for visit-buy stocks are 1.13% (1.15%) and statistically significant, and both local and nonlocal stocks have positive and significant abnormal returns. Column 2 presents abnormal returns for visit-no-act stocks that are not owned before visits, and the returns do not differ significantly from their benchmark portfolio returns. Column 3 reports the differences between columns 1 and 2. The visit-buy stocks outperform the visit-no-act stocks in the full sample, and the outperformance is concentrated in the nonlocal stocks where the difference in the 1-month return is 1.37%. For the large number of stocks that mutual funds do not hold, site visit decisions are unlikely to be exogenous and the information acquisition decisions and investment decisions could be determined jointly. By comparing stocks that mutual funds visit but take different actions after the visits, we can evaluate the effect of these visits on investment performance through different investment decisions.

The results suggest that site visits could provide important information to mutual funds. For firms that funds visit but do not buy, their stocks underperform the visit-buy stocks during the 1-month period after the visiting month. This effect is more prominent for nonlocal stocks for two possible reasons. First, site visits are costly, especially for nonlocal stocks. The visits and buy decisions of nonlocal, not previously held stocks could be triggered by much stronger information signals both before and during the visits. Second, mutual funds may be able to acquire substantial information about local stocks through channels other than site visits (e.g., Gurun and Butler (2012)). Interestingly, local stocks that mutual funds visit but do not buy substantially outperform their nonlocal counterparts, suggesting possible differences in pre-visit information of the two groups of stocks.

Columns 4–6 of Table 10 present post-visit abnormal returns for stocks owned by the funds. The results are similar to those in columns 1–3, but the statistical significance is weaker. Here, we can directly compare the trading performance between post-visit mutual fund purchases and mutual fund sales and report both equally weighted and value-weighted results. Visit-buy stocks tend to have positive abnormal future returns, and column 7 shows that visit-buy stocks outperform visit-sell stocks. The results hold for both equally weighted and trade value-weighted portfolios. There is little difference in the returns of visit-sell and visit-no-act stocks. Column 8 provides a comparison of post-visit purchases of stocks owned and not owned by the mutual funds. The results show that initial purchase of local and nonlocal stocks outperforms accumulation purchase of those stocks, although the differences are not statistically significant.

In Panels B and C of Table 10, we conduct the same tests as in Panel A and examine the post-visit 3- and 6-month cumulative abnormal returns. All findings in Panel A continue to hold in Panel B with a similar economic magnitude and a stronger statistical significance. For example, columns 4–6 present abnormal returns for stocks that are initially owned by mutual funds. The visit-buy stocks have positive and significant abnormal future returns and outperform the visit-sell stocks significantly. Panel C of Table 10 further shows that the overall return patterns for the 1- and 3-month periods hold for the 6-month period, but the economic magnitude is nevertheless weaker for the second 3-month period. Overall, the superior performance of visit-buy stocks does not disappear quickly and persists for at least 6 months after portfolio formation. However, the outperformance levels off during the second half of the 6-month period.

One robust finding in all panels of Table 10 is that for firms not held by mutual funds, visit-buy local stocks consistently deliver positive abnormal returns, whereas visit-no-act local stocks deliver insignificant returns. The return differences increase as we extend the post-visit period and are statistically significant in Panel C of Table 10. This evidence suggests that the superior performance of local holdings is at least partially driven by the information acquisition about local stocks by mutual funds.

We perform two additional robustness tests. First, we create subsamples of visits in the first 2 months of each period (with trading information in the same half-year period) and visits in the last 2 months in each period (with trading information in the next half-year period). We compute 3-month post-visit abnormal returns as in Panel B of Table 10 using the two subsamples separately. Second, we split the sample into unique and repeat visits and again compute 3-month post-visit abnormal returns for each subsample. We continue to find that the visit-buy stocks deliver positive and significant abnormal returns, and this result is stronger if these stocks are not initially owned. The visit-buy stocks outperform both the visit-sell and visit-no-act stocks. These subsample tests corroborate the findings in Table 10 and are reported in the Supplementary Material.

One interesting question is the economic significance of the benefits and costs related to site visits. On the benefits, Table 10 shows that if a fund manager visits and buys a firm's stock, the average abnormal return is about 3% over the 3 months after the visit. Panel B of Table 9 shows that each mutual fund family on average generates around 4 million more RMB in a firm over the 6-month period. Thus, the results suggest that trading profits differ between trades with and without site visits and the increase in trading profits is economically significant. On the costs, Table 8 shows that mutual fund families significantly increase their visits to firms after a reduction in travel time. Everything else equal, increased travel cost lowers the net benefit from these site visits. Perhaps more important, given the time constraints fund managers face, they may allocate less time to visiting firms that require higher travel costs.

Overall, the results in this section provide support for the argument that mutual funds conduct costly site visits because they acquire valuable investment-relevant information during these visits. Mutual fund site visits affect mutual fund investment decisions and these information acquisition activities contribute to mutual fund investment performance. It is worth pointing out that we should not entirely attribute the trading performance in Table 10 to site visits alone. Information acquisition decisions and investment decisions are determined jointly, and fund managers do use a large set of information signals in their investment decisions. Nevertheless, because site visits are costly in terms of effort, time, and other resources, it is reasonable to assume that fund managers conduct site visits in order to benefit from such costly endeavors.

VII. Conclusion

Using a unique data set of Chinese mutual fund site visits to companies, we provide the first direct evidence of mutual fund information acquisition activities and the relation between information acquisition and investment decisions. Mutual funds are more likely to visit geographically proximate firms. These visits provide valuable information to fund managers and affect fund trading decisions. We establish the causal effects of geographical proximity on information acquisition by exploring shocks to ease of travel between cities.

Our findings suggest that the local preference in mutual fund portfolio decisions and the superior performance of local holdings are at least partially driven by more intensive information acquisition about local stocks by mutual funds. Geographic proximity could provide mutual fund managers some initial information advantage. The initial advantage, combined with the lower costs of information acquisition about local firms, leads to greater information acquisition efforts in these firms. The results provide direct support for the endogenous information acquisition explanation of local bias.

We also uncover evidence of substantial information acquisition activities by mutual funds in stocks they do not own. Based on company visits, mutual funds on average devote 80% of their efforts to stocks outside of their portfolios. These actions are typically hidden from researchers and cannot be inferred directly from analyses of mutual fund portfolio holdings. Such information-gathering efforts can have important implications for the joint information acquisition and investment decision process. For example, the evidence helps explain the superior performance of newly initiated stock positions in mutual fund portfolios (Alexander et al. (2007)) and the poor performance of local stocks that local mutual funds do not own (Coval and Moskowitz (2001)).

Appendix. Travel Time Measure

We develop an algorithm to compute the travel time between the addresses of each fund family and each firm headquarters. We define travel time as the estimated number of minutes of travel, based on optimized combinations of transport segments (e.g., driving, trains, and flights). Specifically, we generate three itineraries for each pairing of a trip's origin and destination, and each itinerary represents one feasible travel plan. The first is a car-based travel plan, and DrivingTime is the time duration for a one-way trip using only a car. The second is a train-based travel plan, and the third is a flight-based travel plan. For the second and third plans, we force the navigation planner to prioritize the corresponding means of transport whenever they are available. After computing the three estimates for each origin–destination pair, we assign the shortest time among them as the value of TravelTime.

To compute travel time estimates for a large number of origins and destinations, we use Web API services from two commercial mapping and navigation service providers in China: AMap and BaiduMap. Neither of these two strictly dominates the other when we perform this task, so we combine them for better estimation performance. In general, AMap does a better job of converting a string of address to accurate latitude and longitude coordinates, and it is superior in computing ground public transport time. The advantage of BaiduMap is that it includes air transport as a travel option. Given these facts, we use BaiduMap only for generating data for the flight segment (i.e., airport names and flight times), and we use AMap to perform the rest of the computation.

For the train-based plan, we force the API to prioritize trains. If there is at least one plan available, travel time is computed as the total time spent during these four trip segments:

- Driving time from the origin to the departure railway station.
- Time spent on the train.
- Driving time from the arrival railway station to the destination.
- The unobservable time spent in railway stations, which is assumed to be 60 minutes.

For the flight-based plan, we force the API to prioritize air transport. If there is at least one plan available, the travel time equals the sum of the following:

- Driving time from the origin to the departure airport.
- The time length of the flight.
- Driving time from the arrival airport to the destination.
- The unobservable time spent in airports, including takeoff, landing, and potential delays, which is assumed to be 120 minutes in total. The only exception is that for flights between Beijing and Shanghai, we assume this time to be 60 minutes because the introduction of Beijing–Shanghai Air Express service in 2007 greatly expedited the boarding process.

Within each of these three travel plans, whenever there are multiple feasible options for each segment, we choose the combination that gives the shortest total travel time. These estimates are computed around 10:00 AM (Beijing time) on a representative business day in year 2018 to better reflect travel conditions faced by financial professionals. Because the amount of computation is large, we simultaneously execute 100 programs to ensure they are finished within 10 minutes, so the time estimates do not suffer from systematic incomparability in intraday traffic conditions.

A potential concern is that these estimates might not reflect historical traffic conditions. It is difficult to calculate historical travel time because the navigation applications only provide travel plans based on currently available transportation, which gives rise to a data limitation. However, there has been limited change in car or air transport during the sample period. Since most sample firms are located in reasonably accessible areas, the effect of changes in transports other than HS trains should not materially bias our results. Moreover, if there are omitted overall improvements in other transportation, our travel time estimation would lead to conservative estimates for HS train-induced travel time shocks and treatment effects.

TABLE A1

An Example of Site Visit Information

Table A1 is extracted from pages 64–65 of the 2007 annual report of Shenzhen Agricultural Products Co. Ltd. Two columns in the original table, "Location" and "Ways of Communication," are omitted because we select only locations with site visits and ways of communication with face-to-face meetings.

Time	Visitors	Discussion Content and Materials Provided
Jan. 5, 2007	Taixin Fund Management	The company's development strategy and the core business model
Mar. 9, 2007	Bank of Communications Schroder Fund Management	The company's development strategy and basic information
Mar. 16, 2007	Northern International Trust, Everbright Securities, Pingan Securities	The basic information of the wholesale market, the business model, the recent development of the industry, and the company's strategy
Mar. 27, 2007	Oriental Securities Asset Management	The basic information of core business, the development of the industry, and the company's strategy
Apr. 11, 2007	Pacific Asset Management	The basic information of the company, the core business model, and the company's development strategy
Apr. 24, 2007	CITICS Securities	The basic information of the company, the development strategy, and the core business model
June 6, 2007	China International Capital Corporation	The basic information of the company, the core business model, and the development strategy
Aug. 28, 2007	Deutsche Bank AG (Hong Kong)	The basic information of Chinese agriculture products, the future trend, the basic information of the company, the company's position in the industry, the wholesale market, and the business model
Oct. 15, 2007	Guotai Securities	The basic information of the company, the development strategy, and the private equity issuance
Oct. 31, 2007	Everbright Securities, Citic-Prudential Fund Management	The basic information of the company, the wholesale market business model, the development of electronic payment, the private equity issuance, and the business development in Shenzhen
Nov. 28, 2007	Harvest Fund Management, Fullgoal Fund Management	The wholesale market, the development of electronic payment, the private equity issuance, the development of Pinghu project, the business development in Shenzhen, and the market expansion

Variable Definitions

The sample period is from Jan. 2007 to June 2017. The site visits are from the Shenzhen Stock Exchange. The mutual fund holdings and stock prices are from the China Stock Market and Accounting Research. The total net asset values of mutual funds are from the RESSET database. We keep actively managed equity funds and equity balanced funds. Fund-level information is aggregated at the fund family level every half year.

TREATMENT: We use alternative definitions for treatment. In Table 7, it is an indicator variable that equals 1 if a direct HS train connection between the fund city and the firm city is established before period t, and 0 otherwise. In Table 8, it is an indicator variable that equals 1 if the HS train connection that reduces travel time between the office locations of fund family and firm is in service before period t, and 0 otherwise.

Fund Family–Firm Level

VISITS: Number of visits of the fund family to a firm in each period.

LOCAL: Equals 1 if the distance between the city of a mutual fund and the city of a firm is within a range, and 0 otherwise.

HOLDING: Portfolio weight of a firm's stock in the mutual fund holdings.

|HOLDING_CHG: Absolute value of holding change of a fund family on a firm's stock. $|\text{HOLDING\_CHG}| = \frac{|\text{SHR}_{\text{beg}} - \text{SHR}_{\text{end}}| \times \text{PRC}_{\text{beg}}}{\text{TNA}_{\text{beg}}}$, where SHR_{beg} is the number of shares held at the beginning of period, SHR_{end} is the number of shares held at the end of period, PRC_{beg} is the share price of the stock at the beginning of the period, and TNA_{beg} is the total net asset value of the mutual fund at the beginning of the period.

$\text{PROFIT}_{i,j,t-1\rightarrow t} = \text{HOLDING}_{i,j,t} + \text{SELL}_{i,j,t-1\rightarrow t} - \text{BUY}_{i,j,t-1\rightarrow t} - \text{HOLDING}_{i,j,t-1}$, where BUY (or SELL) is the cumulative absolute RMB values that fund family i pays for purchasing (or receives from selling) firm j's stock between the ends of period $t-1$ and period t.

Firm Level

SIZE: log(market value of firm equity).

ROA: Earnings before interest and taxes (EBIT) scaled by total assets.

SOE: Equals 1 if the firm is state owned, and 0 otherwise.

AGE: log[(Fiscal year-ending date − initial listed date)/365].

COVERAGE: log(1 + Report Num), where Report Num is the total number of financial analyst reports for the firm in a period.

TA_GRO: (Total assets − lagged total assets)/lagged total assets.

ABN_RET: Half-year cumulative stock return minus half-year cumulative market index return.

STDEV: Standard deviation of daily stock return in half year.

TURNOVER: Total trading volume in half year over the number of shares outstanding at the end of half year.

Supplementary Material

Supplementary Material for this article is available at https://doi.org/10.1017/S002210902200045X.

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