The Geography of Fund Management Company's Shareholders: Local Preference in Investment Portfolios

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Abstract

Using detailed data on the geographical information of shareholders in Chinese mutual fund companies, we provide new evidence of mutual fund local information advantage and the relation between geographical proximity and investment decisions. Mutual funds are more likely to hold and overweight local stocks that share the same location as the shareholders of the fund management company and these local stocks in the fund holding portfolios perform better. We also find that local investment bias contributes significantly to mutual fund performance. Our results show that local information from fund shareholders can substantially help mutual funds alleviate geographic distance constraints and improve stock selection ability.

JEL Classification:
Keywords: Mutual fund, shareholder geography, fund holding, fund performance

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1. Introduction

A large amount of research on the asset management field underscores that mutual funds achieve superior performance as a result of their information advantage (e.g., Cohen et al., 2008; Duan et al., 2018; Hwang, 2019). However, identifying the specific channels through which mutual funds secure their information advantage and superior performance is quite difficult. A strand of the literature examines the informational advantage of institutional investors from geographical analysis and attributes the superior investment performance to the nearby information acquisition from local companies. Coval and Moskowitz (2001) uncover evidence of the fund preference for investing close to home and find that mutual fund managers are able to gain abnormal returns when they invest in local stocks because of asymmetric information. Baik et al., (2012) document the informational role of geographically proximate institutions and find the trading of local institutional investors could predict future stock returns. The results of Bernile et al., (2015) also show that local institutional investor performance increases with the degree of local overweighting and local economic exposure.

Recent research studies have started to reveal evidence of geographical information advantage on mutual fund investment from special corporate visits. Chen et al. (2021) use the unique data of Chinese mutual fund corporate site visits to observe the information acquisition activities in local companies and provide direct evidence that visits to nearby firms could help mutual funds improve their trading performance. Cicero et al., (2023) use special data about New York City taxis to identify information transmission channel between mutual funds and local firms, their results show that mutual funds tend to allocate more holding weight to local stocks they visit via taxi and these taxi visits are associated with superior investment performance. Most geographical researches focus their analysis on the mutual fund companies' location and few studies have directly examined whether the geographic places of fund companies' shareholders could benefit mutual funds' stock investment.

The existing literature on fund governance highlights the great impact of mutual fund shareholders on decision-making, especially the financial institutions like commercial banks and investment banks (Hao & Yan, 2012; Golez & Marin, 2015; Ferreira et al., 2018). According to Gong et al., (2016) and Yu et al., (2015), the shareholder of mutual fund company (FMC) in China play a very important role in fund performance. Therefore, we conduct this study to test the geographical information effect of FMCs' shareholders and try to provide new evidence of a link between shareholder geographic

location, local information acquisition, and fund investment decisions.

In this article, we take advantage of the FMC's special organization structure in China to examine the shareholders' geographic impacts. Mutual funds in China are organized in a contractual form, mutual fund investors are just "fund-unit holders" while the shareholders of FMCs are the owners of the fund company. Thereby, shareholders in FMCs have great powers in selecting the directors and supervisors on board as well as hiring portfolio managers. By analyzing this unique group of shareholders, we aim to answer the following questions: (i) Are geographic locations of FMCs' shareholders the important element to impact the fund portfolio decisions? (ii) Does the holding preference for stocks that located in shareholders' places have an information advantage effect? (iii) If yes, does the local investment bias affect fund performance? The answers to these questions are important reference points for investors' decisions and policy formation.

To answer these questions, we present several empirical evidence. First, we show that mutual funds tend to hold and overweight the local stocks that share the same geography as FMCs' shareholders. Specifically, after controlling for fund and stock characteristics, we find that the probability of local stocks held by each fund is 0.01% greater than non-local stocks at the city level, the abnormal holding weight allocated to Local stocks is also 0.03% higher than non-local stocks. Qualitatively similar results are found when we identify the fund-stock pairs at the province level.

We further explore the information advantage effect of fund investment preference for local stocks and find that local stocks perform much better in the fund holding portfolios. Furthermore, the performance effect of local stocks is stronger when the stocks have greater information asymmetry and when funds increase the holding weights of the stocks. Lastly, we examine the local investment preference effect on fund performance and empirically prove that the investment bias for local stocks can improve fund performance in alternative measures. In line with this concept, our results endorse the advantage of fund shareholders' geographical proximity in enhancing investment performance.

The paper is organized as follows. We present institutional details of Chinese mutual fund company in Section 2, the information on data, variable construction and methodology in Section 3, and the empirical results in Section 4. We also make some further analysis in Section 5. Section 6 concludes the paper.

2. Institutional background

China's mutual funds are operated under a two-tier governance structure, which is quite different from US mutual funds. The mutual funds in the US are typical corporate style, where the management structure is organized as a corporation, and the fund investors are the shareholders. However, the mutual funds in China are organized in a

contractual form, similar to the contractual mutual funds in Europe and Japan, where mutual fund investors are just “fund-unit holders” (Gong et al., 2016; Yu et al., 2015). In such contractual mutual funds, shareholders of FMCs are the owners of the fund company and are responsible for selecting the directors and supervisors on board as well as hiring portfolio managers. Thus, they effectively make management decisions at the company level and share the company profit generated mainly by the management fees, charged at a fixed percentage of the fund’s total assets under management, according to their ownership. Historically, the principal shareholders of FMCs are financial institutions, such as banks, insurance companies and securities companies. To promote the "alignment of manager and stakeholder interests", more and more different types of shareholders have been encouraged and supported by regulatory policies to establish or invest in fund management companies since 2013. Figure 1 plots the geographical locations for all shareholders of mutual fund companies and headquarters locations of all mutual fund companies by 2021. FMCs are mainly located in better-developed regions (e.g., Beijing City, Shanghai City and Guangdong Province) while shareholders of FMCs are dispersed across almost all provinces of China. The large geographical dispersion of FMCs’ shareholders provides the mutual funds with the plausible channel to get local useful information from their owners although the working offices are located in financial hub regions.

[Insert Figure 1 here]

According to Gong et al., (2016) and Yu et al., (2015), the ownership structure of FMCs is an important determinant of fund performance due to its critical role in decision-making, such as hiring portfolio managers and setting their compensation rates. When FMCs are invested by banks, securities companies, and other companies, their fund management is inevitably under the influence of their shareholding owners. On the other hand, shareholders of FMCs have the motivation to help funds to improve the fund performance and attract more capital flows from investors because the management fee, charged as a percentage of fund size, is the main revenue for FMCs. Thus, maximizing fund investors’ return might be in the best interest of FMC’s shareholders even if some institutional shareholders of FMC might distort the performance-maximizing incentive by financial tunneling (Hao & Yan, 2012; Golez & Marin, 2015; Ferreira et al., 2018). Therefore, mutual funds under the influence of shareholders from different geographical locations might have an investment preference for firms located in shareholders’ locations. At the same time, the shareholders of FMC might help mutual funds to get unique information advantages about local firms and decrease the costs of information acquisition.

3. Data and methodology

3.1 Data and sample

We obtain our sample of mutual funds from the China Stock Market & Accounting Research (CSMAR) Mutual Fund database. The CSMAR mutual fund database provides information on fund returns, total net assets, fees, investment objectives, and other fund characteristics. We include all Chinese domestic equity funds that exist in the CSMAR database from 2010-2021. The database also reports many important information at the FMC level, such as management company name, headquarters location, ownership structure, and family funds. We gather all the names of FMCs' shareholders based on the FMC ownership structure database and manually collect the location information of every shareholder in each FMC by searching the detailed shareholders' names on the National Enterprise Credit Information Publicity System (NECIPS). We exclude the natural person shareholders and foreign shareholders in our sample and focus our geographical analysis on the shareholders that exist in the FMC ownership structure in company forms. We also obtain market information from various databases. The mutual fund holdings are drawn from the CSMAR mutual fund database, which records the semiannual reports of stock holdings in fund portfolios. The stock market information and company characteristics are from the WIND Stock Database. Lastly, multifactor returns are from the CSMAR Chinese Factor Database.

3.2 Variable construction

3.2.1 Local investment preference at fund-stock level

We define "Local investment preference" as the fund's holding preference for stocks whose firm headquarters are located in the same geographic area as the locations of the fund management company's shareholders. We construct two variables to measure the fund local investment preference. *Flag_city* measures the fund local preference at the city level, which is a dummy variable that equals 1 if the stock shares the same city location as the shareholders of the fund management company (where at least one of the fund management company's shareholders is located in the same area), while *Flag_province* is the similar variable at the province level. For example, if the shareholders of a FMC are located in Shanghai and Beijing two cities, the funds under the management of this FMC should have local investment preference for stocks whose firm headquarters are located in the Shanghai and Beijing.

What's more, we also use *Percentage_city* and *Percentage_Province* these two variables to represent the fund local investment preference. *Percentage_city* is the total ownership percentage of local shareholders in a fund management company when the stock held by the fund shares the same city location as the shareholders of the FMC, which captures the degree of influence and control exerted by shareholders. For example, if the stock held by the fund share the same location of Shanghai city with the

shareholders of the FMC, the variable *Percentage_city* equals to the total ownership of shareholders from Shanghai in the FMC. *Percentage_Province* is the similar variable at the province level.

3.2.2 Funds' holding decision at fund-stock level

We use three approaches to measure the fund holding decision for fund-stock pairs. First, we use a dummy variable $Holding_{i,j,t}$ to measure the likelihood of a fund to hold stocks, considering a comprehensive sample of stocks as potential investment targets for each fund every half year. $Holding_{i,j,t}$ equals 1 if fund *j* holds stock *i* at half year *t*, and 0 otherwise. Second, we use the portfolio (non-zero) weight of stock *i* held by fund *j* at half year *t* $weight_{i,j,t}$ to measure the normal holding decision, which is calculated from using actual semi-annual fund stock holding data. Third, in the spirit of mutual fund active share measurement (Cremers & Petajisto, 2009), we use the abnormal weight of the stock *i* in the fund *j*'s portfolio compared to the market portfolio $Abnormalweight_{i,j,t}$ to represent the holding preference for specific stocks, which is calculated by the following equation:

$$Abnormalweight_{i,j,t} = weight_{i,j,t} - weight_{i,M,t} \qquad (1)$$

Where $weight_{i,j,t}$ is the portfolio (non-zero) weight of stock *i* held by fund *j* at half year *t* and $weight_{i,M,t}$ is the portfolio weight of stock *i* in the market portfolio *M* at half year *t* (using market capitalization).

3.2.3 Local investment bias at fund level

Following the prior studies (eg., Cicero et al., 2023), we define the fund local investment bias as the holding bias of funds for stocks whose firm headquarters are located in the same geographic area as the locations of the fund management company's shareholders. We use the variable $LocalBias_{j,t}$ as value weighted abnormal local stock holding to represent the funds' overall local investment bias, calculated by the following equation:

$$LocalBias_{j,t} = \sum_{c=1}^{N} ow_{c,j,t} \times (weight_{c,j,t} - weight_{c,M,t}) \qquad (2)$$

Where $weight_{c,j,t}$ is the total weight of stocks located in location *c* held by fund *j* at half year *t* and $weight_{c,M,t}$ is the total weight of stocks located in location *c* in the market portfolio *M* at half year *t* (using market capitalization). $Ow_{c,j,t}$ is the total ownership of shareholders located in location *c* in the FMC that fund *j* belongs to. We calculate the $LocalBias_{j,t}$ for different location levels, $BiasPropCity_{j,t}$ is calculated at city level while $BiasPropProvin_{j,t}$ is calculated at province level.

3.3 Primary regression model

To test the relationship between the fund local investment preference and stock holding decision, we run the following regression:

$$HoldingDecision_{i,j,t+1} = \beta_0 + \beta_1 \cdot Localpreference_{i,j,t} + \phi \cdot Controls_t + \varepsilon_t \quad (3)$$

Where *i*, *j* and *t* index stock, fund and half year, respectively. The dependent variable is the fund *j*'s holding decision for stock *i* for fund-stock pairs at half year *t+1*, $HoldingDecision_{i,j,t+1}$. We use three approaches to measure the dependent variable, $Holding_{i,j,t+1}$, $weight_{i,j,t}$ and $Abnormalweight_{i,j,t}$. The independent variable $Localpreference_{i,j,t}$ is fund local investment preference for stocks. We use two approaches to measure the independent variable, $Flag\_city_{i,j,t}$ and $Flag\_province_{i,j,t}$. $Controls_t$ is the vector for control variables, which are commonly used stock and fund characteristics, including stock performance (*StockReturn*), measured as semi-annual return for the stock; total assets of firm (*StockSize*), stock age (*StockAge*), measured as the natural logarithm of the number of years the firm has been listed; leverage of firm (*StockLev*); return on assets of firm (*StockRoa*); book-to-market of firm (*StockBtm*); top 10 shareholders' holding ratio of firm (*StockHolder10*); institutional investor ratio of firm (*StockInsholder*); stock turnover ratio (*StockTurnover*), measured as average daily turnover ratio for the past six months; fund performance (*FundReturn*), measured as semi-annual raw return for the fund; total net assets of fund (*FundSize*); fund age (*FundAge*), measured as the natural logarithm of the number of years the fund has been established; fund flow (*FundFlow*), measured as the estimated net flow; fund return volatility (*FundStdret*), measured as the standard deviation of fund daily returns for the past six months. In all regression, we include fund family, fund style, firm, and time fixed effects, and cluster standard errors at the fund family and time level.

We run the following regression to test whether the fund local investment preference for stocks provides a plausible channel for mutual funds to get information advantage:

$$Stockperf_{i,j,t+1} = \beta_0 + \beta_1 \cdot Localpreference_{i,j,t} + \phi \cdot Controls_t + \varepsilon_t \quad (4)$$

Where *i*, *j* and *t* index stock, fund and half year, respectively. The dependent variable is the buy-and-hold return of stock *i* held by fund *j* at half year *t+1*, $Stockperf_{i,j,t+1}$. The independent variable $Localpreference_{i,j,t}$ is fund local investment preference for stocks. We use two approaches to measure the independent variable, $Flag\_city_{i,j,t}$ and $Flag\_province_{i,j,t}$. $Controls_t$ are the same in equation (3). In all regression, we include fund family, fund style, firm, and time fixed effects, and cluster standard errors at the fund family and time level.

To test whether the fund local investment bias provide fund useful information, we run the following regression:

$$Fundperf_{i,t+1} = \beta_0 + \beta_1 \cdot Localbias_{j,t} + \phi \cdot Controls_{j,t} + \varepsilon_{j,t} \quad (5)$$

Where *j* and *t* index fund and half year, respectively. The dependent variable is fund *j*'s performance at half year *t+1*, $Fundperf_{i,j,t+1}$. We use four approaches to measure the fund performance: *Raw return*, *One-factor Alpha, Three-factor Alpha* and *Five-factor Alpha*. *Raw return* is a semi-annual fund return adjusted by the dividend and the expense. *One-factor Alpha* is the CAPM one-factor risk-adjusted return, *Three-factor Alpha* and *Five-factor Alpha* are the Fama-French three-factor and five-factor risk-adjusted return. All risk-adjusted alphas are calculated from daily return data over every half-year period. The independent variable $Localbias_{j,t}$ is fund local investment bias for stocks. We use two approaches to measure the independent variable for different location levels, $BiasPropCity_{j,t}$ is calculated at city level while $BiasPropProvin_{j,t}$ is calculated at province level. $Controls_{j,t}$ are fund characteristics mentioned in equation (3). In all regression, we include fund family, fund style, and time fixed effects, and cluster standard errors at the fund family and time level.

4. Empirical results

4.1 Univariate analysis

We begin our empirical analysis by investigating the fund stock holding decision associated with the local investment preference. For each fund at every half year, we classify a comprehensive sample of stocks into Local and Non-Local two groups. For Local group, stocks share the same location as the shareholders of the fund management company (where at least one of the fund management company's shareholders is located in the same area), for Non-Local group, stocks are not located in any company shareholders' place. We compare the fund stock holding decision between Local and Non-Local groups by three measurements. First, we calculate the average probability for each fund to hold the local (or non-local) stocks, considering the comprehensive sample of stocks as potential investment targets for every fund, which is the dummy variable $Holding_{i,j,t}$ mentioned in 3.2.2. Second, we calculate the average proportion of the fund's portfolio that is allocated to local (or non-local) stocks, which is the portfolio weight variable $weight_{i,j,t}$ mentioned in 3.2.2. Third, we calculate the abnormal weight of the stock in the fund portfolio compared to the market portfolio, which is the abnormal weight variable $Abnormalweight_{i,j,t}$ mentioned in 3.2.2.

Table 1 presents the univariate analysis results of fund stock holding decisions between Local and Non-Local groups. Columns 1 and Columns 2 report the average value of fund holding decision variables for Local stocks and Non-Local stocks while

Columns 3 report the mean difference between these two groups. Panel A identifies the fund-stock pair location at the city level, while Panel B identifies the fund-stock pair location at the province level. For all definitions of fund stock holding decisions, we find robust and consistent patterns of local investment preference, which means mutual funds tend to hold more Local stocks than Non-Local stocks based on the geography of FMCs' shareholders. On average, the probability of Local stocks (2.21%) held by each fund is 0.29% greater than Non-Local stocks (1.91%) at the city level, the holding weight and the abnormal holding weight allocated to Local stocks (1.56% and 1.45%) are also 0.04% higher and 0.02% higher than Non-Local stocks (1.52% and 1.43%) at the city level. The results of Panel B are at the province level and consistent with the findings at the city level.

[Insert Table 1 here]

4.2 Local investment preference and fund stock holding decision

To further confirm the findings in Table 2, we test the relationship between local investment preference and fund stock holding decision using equation (3). Table 3 reports the empirical results using different indices of local investment preference and fund stock holding decisions. In Columns 1 and 2, we examine how local preference influences the likelihood of funds holding local stocks, considering a comprehensive sample of stocks as potential investment targets for each fund at every half year. The coefficients of $Flag\_city_{i,j,t}$ and $Flag\_province_{i,j,t}$ are significant and positive with the dependent variable $Holding_{i,j,t+1}$, implying that the stocks share the same location as the shareholders of the fund management company are more likely to be held by mutual funds. In Columns 3 and 4, we examine how local preference influences the holding decision of funds for local stocks. The coefficients of $Flag\_city_{i,j,t}$ and $Flag\_province_{i,j,t}$ are significant and positive with the dependent variable $Abnormalweight_{i,j,t}$, indicating that mutual funds tend to allocate more portfolio weight on the stocks which share the same location as the shareholders of FMCs (We find similar results when we regress the local investment preference variables on the $weight_{i,j,t}$, which are reported in the table).

[Insert Table 2 here]

Presumably, when funds need to allocate their capital to potential stocks, they inevitably will take the regional factors of FMCs' shareholders into consideration; thus, local investment preference eventually leads to the fund's actual holding decision on Local stocks. When examining the stock characteristics, we find that larger firms with better previous stock and financial performance are more likely to be held by mutual

funds. In addition, stocks that have high institutional ownership, low book-to-market ratio and low trading turnover also attract more fund holding allocation.

4.3 Local investment preference and stock future performance

4.3.1 Baseline regression

The primary objective of our analysis is to examine whether the local investment preference helps mutual funds to get information advantage. Therefore, we test the relationship between local investment preference and stock future performance using equation (4). To investigate the real information effect of local investment preference, we regress the buy-and-hold stock return on the local investment preference variables based on the fund-stock actual holding pairs, which means the analysis focuses on the fund holding stocks rather than the comprehensive sample of stocks as potential investment targets for funds.

We present the results of the regression in Table 3. In Columns 1 and 2, we regress the buy-and-hold stock return on the $Flag\_city_{i,j,t}$ and $Flag\_province_{i,j,t}$ alongside other firm and fund characteristics. The coefficients of $Flag\_city_{i,j,t}$ and $Flag\_province_{i,j,t}$ are significant and positive with the dependent variable $Stockperf_{i,j,t+1}$, suggesting that the stocks share the same location as the shareholders of the fund management company perform much better in the fund holding portfolios. In Columns 3 and 4, we use $Percentage\_city_{i,j,t}$ and $Percentage\_Province_{i,j,t}$ these two variables to replace the $Flag\_city_{i,j,t}$ and $Flag\_province_{i,j,t}$ for robustness tests. The coefficients of $Percentage\_city_{i,j,t}$ and $Percentage\_Province_{i,j,t}$ are significant and positive with stock future performance, meaning that FMC shareholders with higher ownership could help funds find better stocks since the $Percentage\_city_{i,j,t}$ and $Percentage\_Province_{i,j,t}$ captures the degree of influence and control exerted by FMCs' shareholders. What's more, our results of control variables suggest that stocks held by mutual funds have a reversal return effect and younger, smaller-cap stocks with higher book-to-market ratio and low trading turnover perform better.

[Insert Table 3 here]

4.3.2 Information effects

We have shown that stocks held by mutual funds with local investment preferences have better performance. Thus the positive relationship between stock future performance and fund local investment preference suggests that mutual funds may benefit from local investment in the stocks from shareholders' location. Next, we examine whether the information environment of companies explains the information advantage mutual funds gain from local investment preference. If there is information transmission between local FMC shareholders and fund managers, the information

asymmetry of invested firms might play a crucial role. The empirical literature documents much evidence that the information environment of firms will significantly influence the information gathering quality of institutional investors (Ellul & Panayides, 2018; Hong et al., 2019; Nakazono et al., 2020). We use analyst coverage to measure the information asymmetry and estimate the following regression to test our expectation:

$$Stockperf_{i,j,t+1} = \beta_0 + \beta_1 \cdot Localpreference_{i,j,t} + \beta_2 \cdot Localpreference_{i,j,t} \cdot Report_{i,t} + \beta_3 \cdot Report_{i,t} + \phi \cdot Controls_t + \varepsilon_t \quad (6)$$

Where $Report_{i,j,t}$ represents the total number of analyst coverage reports for stock *i* at the semi-annual level, more $Report_{i,j,t}$ means a better information environment and lower information asymmetry. Other variables in equation (6) are defined the same as those in equation (3). The key variable of interest is the interaction term of $Localpreference_{i,j,t} \cdot Report_{i,j,t}$, which captures the marginal effect on analyst coverage.

We present the results of the regression in Table 4. The coefficients of the interaction term are all significantly negative for different local investment preference variables (Column 1 to Column 4), implying that more analyst coverage will weaken the effect of local investment preference on mutual funds' information advantage. The results lend strong support to findings from previous studies (Han et al., 2018; Hirshleifer et al., 2020; Hu et al., 2021) that it is more difficult to gain unique information from a company that receives more professional attention.

[Insert Table 4 here]

4.3.3 Trading effects

To investigate whether local investment preference provides a plausible channel for mutual funds to get the useful information advantage on trading the local stocks, we run the following regression:

$$Stockperf_{i,j,t+1}/SUE_{i,j,t+1} = \beta_0 + \beta_1 \cdot Localpreference_{i,j,t} + \beta_2 \cdot Localpreference_{i,j,t} \cdot \Delta Ownership_{i,t} + \beta_3 \cdot \Delta Ownership_{i,t} + \phi \cdot Controls_t + \varepsilon_t \quad (7)$$

Where $\Delta Ownership_{i,j,t}$ represents the trading volume of fund *j* on stock *i* at semi-annual level, which equals the number of shares purchased or sold by fund *j* on stock *i* over half year *t* multiplied by the stock price at the end of semi-annual, and scaled by fund's total net assets. We also use $SUE_{i,j,t+1}$ (standardized unexpected earnings) as the dependent variable to investigate the local information advantage provided by FMC's shareholders about firm profitability, which is calculated as the difference between earnings per share and expected earnings per share (the median analyst forecast over the previous semi-annual period), scaled by the stock price. Other variable in in

equation (6) are defined the same as that in in equation (3). The key variable of interest is the interaction term of $Localpreference_{i,j,t}$ · $\Delta Ownership_{i,j,t}$, which indicates whether trades associated with local investment preference help predict future stock performance or firm earnings surprise.

We present the results of the regression in Table 5. The coefficients of interaction term are all significantly positive with future stock performance and firm SUE for different local investment preference variables (Column 1 to Column 4), suggesting that the fund trading with local investment preference has strong predict power on stocks' future return and financial profit. The finding is consistent with Baik et al., (2010) and Cicero et al., (2023), who posit that local trading of mutual funds are positively associated with stock performance.

[Insert Table 5 here]

4.4 Robustness tests

Our measure of local investment preference is subject to the potential geographic problem. We define "Local investment preference" as the fund's holding preference for stocks whose geographic locations are the same as the locations of the FMCs' shareholders and do not consider the location effect of FMC. Figure 1 shows that shareholders of FMCs are distributed throughout the country while the FMCs are mainly located in better-developed regions. However, Figure 1 plots that the working regions of FMCs are also clustered places for FMCs' shareholders, meaning that the plausible channel to get local useful information might be produced by the geographic advantage of FMC rather than FMCs' shareholders. In this subsection, we perform several robustness tests to solve the possible problem.

We decompose the main independent variable into two separate dummies to classify the effect of FMCs' location - one dummy for stocks held by the fund shares the same location as the shareholders of the FMC and FMC, another dummy for stocks held by the fund shares the same location as the shareholders of the FMC but not the FMC. For example, we decompose the variable *Flag_city* into *Flag_city_FMC* and *Flag_city_NFMC*, *Flag_city_FMC* equal to 1 if the location of stock, the shareholders of FMC and the FMC is the same while *Flag_city_FMC* equal to 1 if stocks held by the fund shares the same city location as the shareholders of the FMC but not the FMC. Similarly, we decompose the variable *Flag_province* into *Flag_ province _FMC* and *Flag_ province _NFMC*. Then we replace the *Flag_city* (*Flag_province*) in equation (3) and (4) with new dummies *Flag_city_FMC* and *Flag_city_NFMC* (*Flag_ province _FMC* and *Flag_ province _NFMC*) and conduct the regressions.

We present the results of robustness tests in Table 6. In Columns 1 and 2, we regress the holding weights of funds for stocks on the decomposed dummy variables mentioned

above alongside other firm and fund characteristics. The coefficients of *Flag_city_NFMC* and *Flag_ province _NFMC* are significant and positive when the coefficients of *Flag_city_FMC* and *Flag_ province _FMC* are positive with dependent variable $Abnormalweight_{i,j,t}$ (we find similar results when the dependent variables are $Holding_{i,j,t+1}$ and $weight_{i,j,t}$), suggesting that local stocks that not located in the FMCs' geographic area also attract funds' overweighting. In Columns 3 and 4, we regress the holding performance of stocks held by funds on the decomposed dummy variables, the coefficients of *Flag_city_NFMC* and *Flag_ province _NFMC* are significant and positive though the coefficients of *Flag_city_FMC* and *Flag_ province _FMC* are also significantly positive, which implies that the performance effect still exists without the geographic advantage of FMC.

Overall, the results of robustness tests are consistent with our baseline results, suggesting that holding and performance effects of local investment preference are not mainly caused by FMCs' geographic location.

[Insert Table 6 here]

4.5 Local investment bias and fund performance

Our previous analyses provide evidence that mutual funds are more likely to overweight the stocks that share the same location as the shareholders of FMC and these local stocks perform better in the future. Therefore, it is possible that funds allocating more local stocks in portfolios could get superior performance. To test this plausibility, we construct a value-weighted local investment bias variable $Localbias_{j,t}$ to measure the overall local holding position for funds and examine whether the funds perform better when their stock portfolios have strong local investment bias using equation (5).

We present the results of the regression in Table 7. From Column 1 to Column 4, we regress different fund performance indexes on $BiasPropCity_{j,t}$, which is calculated by equation (2) to measure the fund local investment bias at the city level. The coefficients of $BiasPropCity_{j,t}$ are significant and positive with the $Fundperf_{i,j,t+1}$, implying that the funds allocate more holding weight to local stocks share the same location with FMC shareholders could get better fund performance in the next period across all four performance metrics (*Raw return*, *One-factor Alpha, Three-factor Alpha* and *Five-factor Alpha*). One percentage increase in fund holding bias for local stocks will enhance fund raw return by 0.08% semiannually (0.02%-0.03% for risk-adjusted return). From Column 5 to Column 8, we regress different fund performance indexes on $BiasPropProvin_{j,t}$ (calculated at the province level) and get similar results.

[Insert Table 7 here]

These results indicate that a higher local investment bias will significantly improve the fund performance. Our results of control variables suggest that older and bigger funds that attract more fund flows perform better. Also, we find evidence of performance persistence, as the coefficient on previous performance is significantly positive.

5. Additional Analyses

5.1 Information advantage of fund local stock preference

Thus far, our results indicate that local investment preference helps mutual funds predict stocks with better future performance and local investment bias contributes to mutual funds' performance. We next study the mechanism of information advantage and performance enhancement effect by portfolio analysis. We classify a comprehensive sample of stocks into Local and Non-Local two groups for each fund (same method in Table 1), stocks in Local group share the same location as the shareholders of the fund management company while stocks of Non-Local group are not located in any company shareholders' places. Then we divide the stocks in Local and Non-Local groups into Holding and Non-holding subgroups based on the semi-annual funds holding portfolio data and compare the performance of holding stocks and non-holding stocks to examine the information advantage of funds.

We calculate the buy-and-hold return for Local and Non-Local stocks over the next half-year period and estimate the differences between the Holding group and the Non-holding group. Table 8 presents the univariate analysis results of stock performance in different subgroups, Panel A identifies the fund-stock pair location at the city level, while Panel B identifies the fund-stock pair location at the province level. The results show that holding stocks perform better in both Local and Non-Local groups. More importantly, we compare the difference of performance differences between Holding and Non-holding subgroups for Local and Non-Local stocks and find that the outperformances of Holding stocks in Local group are significantly higher than Non-Local group. Our results suggest a stronger stock selection ability that mutual funds could get from local shareholders of FMC and confirm the performance enhancement effect of local investment preference.

[Insert Table 8 here]

5.2 Shareholder structure change and fund local stock preference

In this section, we further investigate how the geographic changes of FMC shareholders affect fund holding decisions for local stocks to ensure the robustness of our results. We identify the geographic changes of FMC shareholders from two sides: new shareholders showing up with the appearance of a new geographic location and the old shareholders withdrawing with the disappearance of the old geographic location.

We regard the event of a new shareholder entering into the ownership structure of FMC as a new geographic location appearance when the location of the new shareholder is different from other existing shareholders' geographic areas. Similarly, we regard the event of an old shareholder withdrawing from the ownership structure of FMC as an old geographic location disappearance when the location of the old shareholder is different from other existing shareholders' geographic areas. To test the effects of the geographic changes more specifically, we focus our analysis on the local stocks whose firm headquarters are located in the changing shareholders' geographic area. Then we compare the average probability of holding local stocks, the average holding weight and the abnormal holding weight allocated to local stocks before and after these two kinds of shareholders' geography changing events (these local stocks share the same location with the new entering shareholders or old withdrawing shareholders).

We provide the city level comparison results for new geographic location appearances in Table 9 (we obtain similar results based on the province level analysis). Panel A shows that the probability of holding local stocks, the holding weight and the abnormal holding weight allocated to local stocks of each fund after the new regional factor added event is significantly higher than before, which indicates that the new geographic shareholders' appearance in FMC make funds hold and overweight the stocks from the new shareholders' geographic location. Panel B presents the comparison results for old geographic location disappearances. The results suggest that the probability of holding local stocks, the holding weight and abnormal holding weight allocated to local stocks of each fund after the old regional factor removed event is significantly lower than before, showing that the disappearing influence of old geographic shareholders on the local stock allocation. Overall, the results of Table 9 confirm that the geographic location of FMC's shareholder has a real impact on the stock holding decision.

[Insert Table 9 here]

6. Conclusion

Using a unique data set of Chinese mutual fund companies' shareholders, we provide new evidence of mutual fund local information advantage and the relation between geographical proximity and investment decisions. Mutual funds are more likely to hold and overweight local stocks that share the same location as the shareholders of the fund management company. Our results show that the geographical proximity of fund shareholders to stocks makes the fund exhibit the local investment preference.

Also, we find that the local stocks in the fund holding portfolios perform much better, suggesting that geographic proximity could provide mutual funds substantial information advantage to get better stock selection ability. Furthermore, the

performance effect of local stocks could be stronger when the stocks have greater information asymmetry and when funds increase the holdings of the stocks.

We also uncover evidence that funds perform better when they allocate more holding weights to local stocks in overall stock portfolios. Such performance-enhancement effect can have important implications for the fund portfolio optimization and fund investors' decision making.

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Figure 1 Geographical distribution of fund management company and shareholders

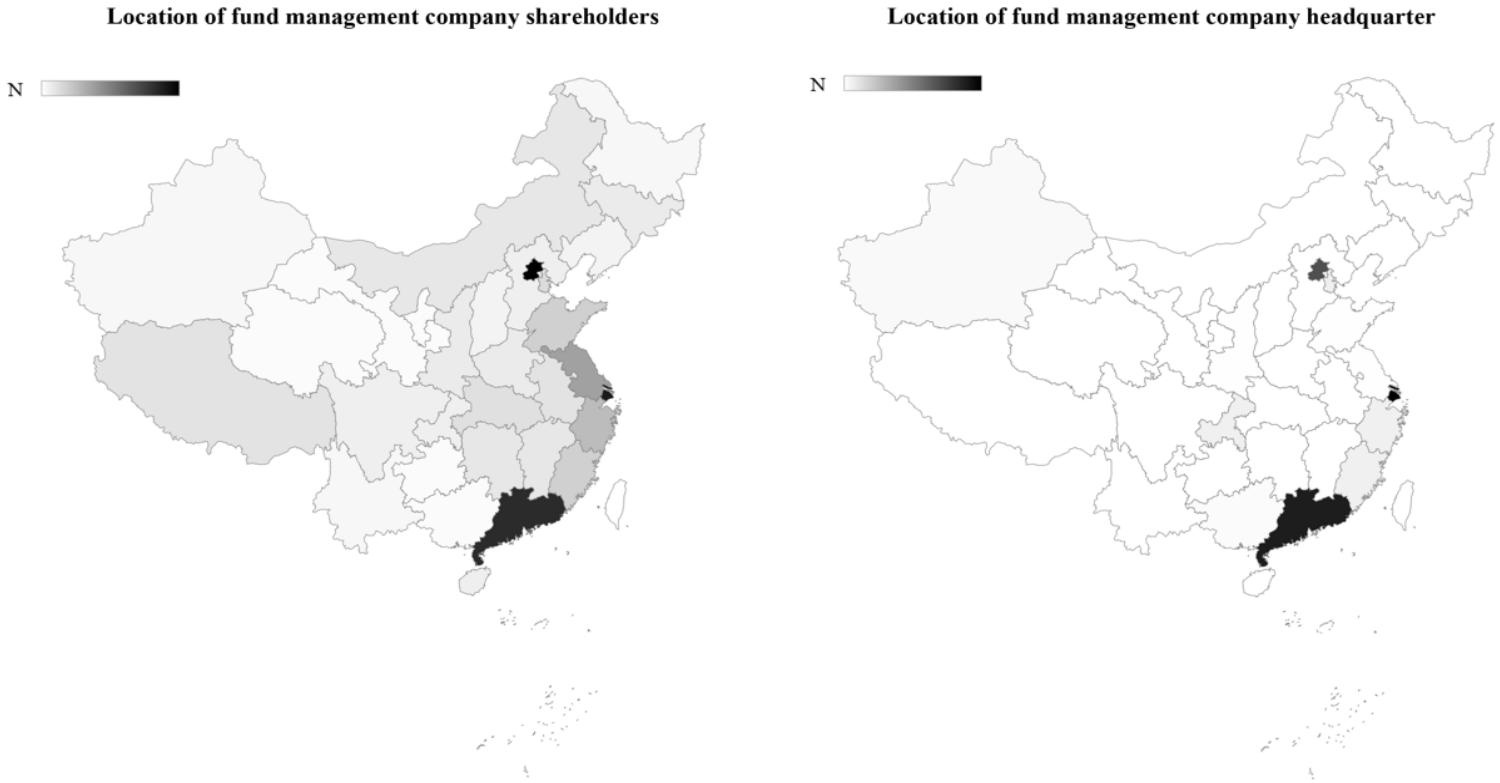

Table 1 Univariate analysis

This table reports univariate analysis results about local equity investment preference based on mutual funds holdings. We define "Local preference" as the fund's holding preference for stocks whose firm headquarters are located in the same geographic area as the locations of the fund management company's shareholders. For each fund at every half year, we classify a comprehensive sample of stocks into Local and Non-Local two groups. For Local group, stocks share the same location as the shareholders of the fund management company (where at least one of the fund management company's shareholders is located in the same area), for Non-Local group, stocks are not located in any company shareholders' place. Panel A identifies the fund-stock common location at the city level, while Panel B identifies the fund-stock common location at the province level. Within each panel, we conduct three types of comparisons. First, we calculate the average probability for each fund to hold the local (or non-local) stocks, considering the comprehensive sample of stocks as potential investment targets for every fund. Second, we calculate the average proportion of the fund's portfolio that is allocated to local (or non-local) stocks. Third, we calculate the abnormal weight of the stock in the fund portfolio compared to the market portfolio. The sample consists of actively managed equity mutual funds from 2010 to 2021. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively. t-statistics are presented.

Panel A: City-level

	(1)		(2)		(3)	
	Local		Non-Local		Difference	
	N	Mean	N	Mean	(1)-(2)	t-value
Probability of stocks held by each fund (%)- Holding	32485	2.2059	32485	1.9132	0.2927***	34.87
Value of stocks held by each fund (%)- weight	32485	1.5562	32485	1.5187	0.0375***	6.41
Abnormal value of stocks held by each fund (%)- Abnormal weight	32485	1.4498	32485	1.4318	0.0180***	2.86

Panel B: Province-level

	(1)		(2)		(3)	
	Local		Non-Local		Difference	
	N	Mean	N	Mean	(1)-(2)	t-value
Probability of stocks held by each fund (%)- Holding	32485	2.1607	32485	1.9025	0.2582***	35.28
Value of stocks held by each fund (%)- weight	32485	1.5672	32485	1.5306	0.0366***	7.10
Abnormal value of stocks held by each fund (%)- Abnormal weight	32485	1.4452	32485	1.4249	0.0203***	3.48

Table 2 Local investment preference and fund stock holding decision

This table reports the relationship between local preference and fund stock holding decision. We define "Local preference" as the fund's holding preference for stocks whose firm headquarters are located in the same geographic area as the locations of the fund management company's shareholders and construct two variables to measure the fund local preference. *Flag_city* measures the fund local preference at the city level, which is a dummy variable that equals 1 if the stock shares the same location as the shareholders of the fund management company (where at least one of the fund management company's shareholders is located in the same area), while *Flag_province* is the similar variable at the province level. In Columns 1 and 2, we examine how local preference influence the likelihood of funds to hold local stocks considering a comprehensive sample of stocks as potential investment targets for each fund at every half year. *Holding* is a dummy variable that equals 1 if the fund holds the stock, and 0 otherwise; In Columns 3 and 4, we examine how local preference influence the holding decision of funds for local stocks, using semi-annual fund stock holding data. *Abnormal weight* is calculated by equation (1), means the abnormal weight of the stock in the fund portfolio compared to the market portfolio. The control variables are commonly used in stock and fund characteristics, including stock performance (*StockReturn*), measured as semi-annual return for the stock; total assets of firm (*StockSize*), stock age (*StockAge*), measured as the natural logarithm of the number of years the firm has been listed; leverage of firm (*StockLev*); return on assets of firm (*StockRoa*); book-to-market of firm (*StockBtm*); top 10 shareholders' holding ratio of firm (*StockHolder10*); institutional investor ratio of firm (*StockInsholder*); stock turnover ratio (*StockTurnover*), measured as average daily turnover ratio for the past six months; fund performance (*FundReturn*), measured as semi-annual raw return for the fund; total net assets of fund (*FundSize*); fund age (*FundAge*), measured as the natural logarithm of the number of years the fund has been established; fund flow (*FundFlow*), measured as the estimated net flow; fund return volatility (*FundStdret*), measured as the standard deviation of fund daily returns for the past six months. We include fund family, fund style, firm, and time fixed effects in each column. t-statistics are constructed with standard errors clustered by fund family and time and presented in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Comprehensive Sample		Holding Sample	
	(1)	(2)	(3)	(4)
	Holding (Dummy)	Holding (Dummy)	Abnormal weight	Abnormal weight
Flag_city	0.0001**		0.0343***	
	(2.15)		(3.84)	
Flag_province		0.0002***		0.0298***
		(6.01)		(3.99)
StockReturn	0.0012**	0.0012**	0.0265	0.0265
	(2.77)	(2.78)	(1.48)	(1.48)
StockSize	0.0062***	0.0062***	-0.0420*	-0.0419*
	(11.76)	(11.76)	(-1.74)	(-1.73)
StockAge	-0.0001	-0.0001	0.0779***	0.0779***
	(-0.13)	(-0.13)	(4.22)	(4.22)
StockLev	0.0002***	0.0002***	0.3018***	0.3017***
	(2.98)	(2.98)	(5.48)	(5.47)
StockRoa	0.0019*	0.0019*	0.6319***	0.6319***
	(2.06)	(2.06)	(3.09)	(3.09)
StockBtm	-0.0390***	-0.0390***	-0.5144***	-0.5148***
	(-9.33)	(-9.33)	(-5.28)	(-5.29)
StockHolder10	-0.0477***	-0.0477***	-1.1577***	-1.1574***
	(-10.87)	(-10.87)	(-7.63)	(-7.63)
StockInsholder	0.0570***	0.0570***	1.0323***	1.0320***
	(13.93)	(13.92)	(11.10)	(11.10)
StockTurnover	-0.0297**	-0.0297**	-0.4785**	-0.4783**
	(-2.42)	(-2.42)	(-2.46)	(-2.46)
FundReturn	-0.0033	-0.0033	0.5376*	0.5378*
	(-0.91)	(-0.91)	(1.77)	(1.77)
FundSize	0.0006***	0.0006***	-0.0676***	-0.0676***
	(4.77)	(4.77)	(-6.22)	(-6.22)
FundAge	0.0003*	0.0003*	0.0399***	0.0399***
	(1.85)	(1.85)	(2.93)	(2.93)
FundFlow	0.0000	0.0000	-0.0163**	-0.0164**
	(1.13)	(1.13)	(-2.51)	(-2.51)
FundStdret	-0.0693	-0.0693	0.8702***	0.8703***
	(-0.81)	(-0.81)	(11.44)	(11.44)
Intercept	-0.1088***	-0.1088***	2.4593***	2.4575***
	(-10.13)	(-10.13)	(5.38)	(5.37)
Fundfamily FE	YES	YES	YES	YES
Fundstyle FE	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Time FE	YES	YES	YES	YES
Observations	87,420,721	87,420,721	1,641,339	1,641,339
Adjusted R^2	0.059	0.059	0.325	0.325

Table 3 Local investment preference and stock future performance

This table examines the relationship between fund local investment preference and stock performance. The dependent variable is the buy-and-hold return of the stock in the subsequent semi-annual period. In Columns 1 and 2, *Flag_city* and *Flag_province* are the same variables in table 2, which are dummy variables indicating whether the stock held by the fund shares the same location as the shareholder of the fund management company at the city or province level. In Columns 3 and 4, *Percentage_city* and *Percentage_Province* are ownership percentages of local shareholders in fund management companies when the stock held by the fund shares the same location as the shareholder of the fund management company, which captures the degree of influence and control exerted by shareholders. The estimations include a set of control variables for stock and fund characteristics mentioned in table 2. We also include fund family, fund style, firm, and time fixed effects in each column. t-statistics are constructed with standard errors clustered by fund family and time and presented in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	StockReturn $_{t+1}$	StockReturn $_{t+1}$	StockReturn $_{t+1}$	StockReturn $_{t+1}$
Flag_city	0.0030***			
	(4.49)			
Flag_province		0.0020**		
		(2.65)		
Percentage_city			0.0048***	
			(3.16)	
Percentage_province				0.0036**
				(2.63)
Intercept	3.5136***	3.5135***	3.5135***	3.5136***
	(6.30)	(6.30)	(6.30)	(6.30)
Stock controls	YES	YES	YES	YES
Fund controls	YES	YES	YES	YES
Fundfamily FE	YES	YES	YES	YES
Fundstyle FE	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Time FE	YES	YES	YES	YES
Observations	1,641,339	1,641,339	1,641,339	1,641,339
R-squared	0.550	0.550	0.550	0.550

Table 4 Information asymmetry and local preference's stock effect

This table examines the impact of stock information asymmetry on fund local investment preference' performance effect. We use analyst research coverage as an index to measure the stock information asymmetry, less analyst coverage means stronger information asymmetry. *Report* represents the total number of analyst research reports for every stock at semi-annual level. All other variables are described in table 2. The estimations include a set of control variables for stock and fund characteristics mentioned in table 2. We also include fund family, fund style, firm, and time fixed effects in each column. t-statistics are constructed with standard errors clustered by fund family and time and presented in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	StockReturn $_{t+1}$	StockReturn $_{t+1}$	StockReturn $_{t+1}$	StockReturn $_{t+1}$
Flag_city×Report	-0.0003**			
	(-2.77)			
Flag_city	0.0108***			
	(3.36)			
Flag_Province×Report		-0.0002***		
		(-2.97)		
Flag_province		0.0081***		
		(3.73)		
Percentage_city			-0.0004**	
×Report			(-2.73)	
Percentage_city			0.0171***	
			(3.47)	
Percentage_Provinve				-0.0004***
×Report				(-2.82)
Percentage_province				0.0160***
				(3.18)
Report	0.0048***	0.0048***	0.0048***	0.0048***
	(7.59)	(7.61)	(7.60)	(7.60)
Intercept	4.0709***	4.0712***	4.0709***	4.0711***
	(7.40)	(7.40)	(7.40)	(7.40)
Stock controls	YES	YES	YES	YES
Fund controls	YES	YES	YES	YES
Fundfamily FE	YES	YES	YES	YES
Fundstyle FE	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Time FE	YES	YES	YES	YES
Observations	1,641,339	1,641,339	1,641,339	1,641,339
R-squared	0.571	0.571	0.571	0.571

Table 5 Fund trading and local preference's stock effect

This table examines the fundamental forecasts of fund trading in the performance analysis of local stocks. The dependent variables are the buy-and-hold return of the stock in the subsequent semi-annual period and the earning surprise of firm in the subsequent semi-annual period, using the standardized unexpected earnings (SUE). *SUE* is calculated as the difference between earnings per shares (EPS) and expected earnings per share (the median analyst forecast over the previous semi-annual period), scaled by stock price. *ΔOwnership* is the number of shares purchased or sold by fund in stock during semi-annual period multiplied by the stock price at the end of semi-annual, and scaled by fund's total net assets. All other variables are described in table 2. The estimations include a set of control variables for stock and fund characteristics mentioned in table 2. We also include fund family, fund style, and time fixed effects in each column. t-statistics are constructed with standard errors clustered by fund family and year-semiannual and appear in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	StockReturn $_{t+1}$	StockReturn $_{t+1}$	SUE $_{t+1}$	SUE $_{t+1}$
Flag_city×	0.0002**		0.0015**	
ΔOwnership	(2.55)		(2.02)	
Flag_city	0.0030**		0.0080**	
	(2.46)		(2.07)	
Flag_province×		0.0001**		0.0014*
ΔOwnership		(2.51)		(1.92)
Flag_province		0.0019**		0.0107***
		(2.52)		(3.25)
ΔOwnership	0.0001**	0.0001**	0.0002	0.0002
	(3.17)	(2.60)	(0.73)	(0.73)
Intercept	3.5157***	3.5156***	4.2301***	4.2291***
	(6.31)	(6.31)	(4.08)	(4.08)
Stock controls	YES	YES	YES	YES
Fund controls	YES	YES	YES	YES
Fundfamily FE	YES	YES	YES	YES
Fundstyle FE	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Time FE	YES	YES	YES	YES
Observations	1,641,339	1,641,339	1,146,799	1,146,799
R-squared	0.549	0.549	0.350	0.350

Table 6 Robustness tests

This table re-examines the impacts of fund local investment preference on holding decision and stock performance by eliminating the effect of FMCs' location. We decompose the main independent variable into two separate dummies – one dummy for stocks held by the fund shares the same location as the shareholders of the FMC and FMC (*Flag_city_FMC or Flag_province_FMC*), another dummy for stocks held by the fund shares the same location as the shareholders of the FMC but not the FMC (*Flag_city_NFMC or Flag_province_NFMC*). In Columns 1 and 2, we regress the holding weights of funds for stocks on the decomposed dummy variables. In Columns 3 and 4, we regress the holding performance of stocks held by funds on the decomposed dummy variables. The estimations include a set of control variables for stock and fund characteristics mentioned in table 2. We also include fund family, fund style, and time fixed effects in each column. t-statistics are constructed with standard errors clustered by fund family and year-semiannual and appear in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
	Abnormal weight	Abnormal weight	StockReturn	StockReturn
Flag_city_FMC	0.0096		0.0064***	
	(0.93)		(3.92)	
Flag_city_NFMC	0.0532***		0.0021**	
	(4.70)		(2.42)	
Flag_province_FMC		0.0206*		0.0045***
		(2.01)		(3.09)
Flag_province_NFMC		0.0377***		0.0022*
		(3.38)		(1.80)
Intercept	2.4577***	2.4571***	3.5137***	3.5135***
	(5.37)	(5.37)	(6.30)	(6.30)
Stock controls	YES	YES	YES	YES
Fund controls	YES	YES	YES	YES
Fundfamily FE	YES	YES	YES	YES
Fundstyle FE	YES	YES	YES	YES
Time FE	YES	YES	YES	YES
Observations	1,641,339	1,641,339	1,641,339	1,641,339
R-squared	0.325	0.325	0.550	0.550

Table 7 Local investment bias and fund performance

This table reports the relationship between local investment bias and fund performance. *BiasProportion* represents the abnormal proportion of local stocks in a fund's portfolio, calculated as the actual proportions of local stocks in the fund portfolio minus the proportion of local stocks in the market portfolio to captures the deviation from a market-neutral allocation. We calculate the *BiasProportion* variable using value weighted method based on the ownership percentage of local shareholders in the fund management company when the shareholders locate in different cities (*BiasPropCity*) or provinces (*BiasPropProvin*). We report the estimation results for raw return, one-factor alpha, three-factor alpha, and five-factor alpha. Raw return is semi-annual dividend and expense adjusted fund return. One-factor alpha, three-factor alpha, and five-factor alpha are semi-annual risk adjusted returns calculated from daily return and factor data over every half year period. The results of column 1 to column 4 are at the city level while the results of column 5 to column 8 are at the province level. The regressions include a set of control variables for fund characteristics, including previous fund return, fund size, fund age, fund flow and fund return volatility. We also include fund family, fund style, and time fixed effects in each column. t-statistics are constructed with standard errors clustered by fund family and time and presented in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Raw Return	One-factor Alpha	Three-factor Alpha	Five-factor Alpha	Raw Return	One-factor Alpha	Three-factor Alpha	Five-factor Alpha
BiasPropCity	0.0751***	0.0215*	0.0221**	0.0339***				
	(4.01)	(1.66)	(2.01)	(2.90)				
BiasPropProvin					0.1073***	0.0449***	0.0151**	0.0346***
					(5.31)	(3.26)	(2.53)	(3.44)
FundReturn	0.0210**	0.0289***	0.0009	-0.0145**	0.0203**	0.0299***	0.0018	-0.0139**
	(2.18)	(3.34)	(0.14)	(-2.14)	(2.17)	(3.60)	(0.28)	(-2.19)
FundSize	-0.0013**	-0.0012**	-0.0007	-0.0012**	-0.0011*	-0.0011**	-0.0005	-0.0010**
	(-2.08)	(-2.10)	(-1.41)	(-2.27)	(-1.87)	(-1.98)	(-1.14)	(-2.01)
FundAge	0.0010	-0.0024**	-0.0008	-0.0017**	0.0008	-0.0024**	-0.0009	-0.0018**
	(0.98)	(-2.19)	(-1.25)	(-2.29)	(0.82)	(-2.30)	(-1.51)	(-2.57)
FundFlow	0.0069***	0.0058***	0.0065***	0.0062***	0.0065***	0.0057***	0.0063***	0.0060***
	(5.85)	(8.36)	(12.58)	(12.91)	(6.04)	(8.85)	(13.01)	(13.23)
FundStdret	-0.1758	-0.2861**	-0.0138	0.1582*	-0.1692	-0.2974**	-0.0263	0.1498*
	(-1.30)	(-2.33)	(-0.17)	(1.88)	(-1.28)	(-2.49)	(-0.33)	(1.88)
Intercept	0.1135***	0.0686***	0.0155	0.0158	0.1117***	0.0676***	0.0134	0.0126
	(8.52)	(5.95)	(1.62)	(1.62)	(8.86)	(6.17)	(1.49)	(1.36)
Fundfamily FE	YES	YES	YES	YES	YES	YES	YES	YES
Fundstyle FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	23,921	23,921	23,921	23,921	25,321	25,321	25,321	25,321
R-squared	0.611	0.374	0.300	0.233	0.606	0.374	0.296	0.229

Table 8 Information advantage of fund local stock preference

This table examines the information advantage that local shareholders of FMCs bring to mutual funds by comparing the performance of holding and non-holding stocks for Local and Non-Local groups. We classify a comprehensive sample of stocks into Local and Non-Local two groups for each fund (same method in table 1), stocks in Local group share the same location as the shareholders of the fund management company while stocks of Non-Local group are not located in any company shareholders' places. Then we divide the stocks in Local and Non-Local groups into Holding and Non-holding subgroups based on the semi-annual funds holding portfolio data and compare the buy-and-hold return of holding stocks and non-holding stocks to examine the information advantage of fund local stock preference. *Mean return of stocks (%)* represent the mean value of buy-and-hold returns for each group stocks in the next semi-annual period. We also conduct a difference-in-difference (DID) test to examine the holding advantage of local stocks comparing with non-local stocks. Results are reported at the city level in Panel A and the province level in Panel B, respectively. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively. t-statistics are presented.

Panel A:

City-level	Local				
	Holding	Non-holding	Difference	t-value	N
Mean return of stocks (%)	4.8844	2.2407	2.6437***	35.34	32485
	Non-Local				
	Holding	Non-holding	Difference	t-value	N
Mean return of stocks (%)	3.2327	1.9437	1.2890***	10.55	32485
			DID	t-value	
			1.3547***	15.12	

Panel B:

Province-level	Local				
	Holding	Non-holding	Difference	t-value	N
Mean return of stocks (%)	4.9709	2.2641	2.7068***	35.56	32485
	Non-Local				
	Holding	Non-holding	Difference	t-value	N
Mean return of stocks (%)	3.3238	1.7924	1.5314***	14.79	32485
			DID	t-value	
			1.1754***	12.63	

Table 9 Shareholder structure change and fund local stock preference

This table reports the impact of geographic changes caused by shareholder structure changes on the fund local stock preference. We identify the geographic changes of FMC shareholders from two sides: new shareholder showing up with the appearance of new geographic location and old shareholder withdrawing with the disappearance of old geographic location. We observe the changes in local stock holdings in funds' portfolios following the geographic changes by comparing the average value in the probability of holding local stocks, the average value in the proportion of local stocks and the average value of abnormal holding proportion allocated to local stocks before and after the regional change event happen. The time horizons are considered are from t-1 to t+1 (semi-annual). Results of the appearance of new geographic location are reported in Panel A and results of disappearance of old geographic location are reported in Panel B based on the city level analysis (we obtain similar results based on the province level analysis). *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively. t-statistics are presented.

Panel A- Appearance of new shareholder with new location

	(1)		(2)		(3)	
	Before t-1		After t+1		Difference	
	N	Mean	N	Mean	(2)-(1)	t-value
Probability of local stocks held by each fund (%)- Holding	691	1.7321	691	2.0872	0.3551***	2.86
Value of local stocks held by each fund (%)- Weight	691	1.4554	691	1.7210	0.2656***	2.54
Abnormal value of stocks held by each fund (%)- Abnormal weight	691	1.2720	691	1.5337	0.2617***	2.51

Panel B- Withdrawal of old shareholders with old location

	(1)		(2)		(3)	
	Before t-1		After t+1		Difference	
	N	Mean	N	Mean	(2)-(1)	t-value
Probability of local stocks held by each fund (%)- Holding	529	2.0041	529	1.7371	-0.2670**	-1.92
Value of local stocks held by each fund (%)- Weight	529	1.8352	529	1.3914	-0.4438***	-3.95
Abnormal value of stocks held by each fund (%)- Abnormal weight	529	1.4739	529	1.0975	-0.3764***	-2.99