



Home bias in foreign investment decisions

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Abstract

We analyze the US equity holdings of more than 3000 non-US-based mutual funds from 22 countries and find robust evidence that fund managers strongly prefer to invest in stocks of US firms that have presence in their home country. This “home bias” is independent of the degree of global involvement and visibility of these US firms. While these firms have significantly greater exposure to local equity markets, their local presence offers little information advantage to local fund managers. Our findings suggest that the lack of international diversification is more serious than currently documented in the literature.

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INTRODUCTION

It is now well documented that, despite the gains from cross-border diversification and the increased integration of financial markets worldwide, the strong investor preference for domestic firms is pervasive in international financial markets.¹ This “home bias” phenomenon not only persists, but is also ubiquitous across developed and developing markets. In a more recent study based on worldwide equity fund holdings data in 1999 and 2000, Chan, Covrig, and Ng (2005) document the existence of home bias in every single country in their sample of 48 countries across the globe. Plausible explanations for investors’ strong preference for domestic equities include the existence of cross-border boundaries that give rise to exchange rate risk, variation in regulation, taxation, accounting standards, corporate governance, transaction costs, information asymmetries, and biased expectations.

This stylized home-bias phenomenon in international financial markets exists even in domestic equity markets. Coval and Moskowitz (1999) show that US professional money managers exhibit a strong bias toward locally headquartered firms. Ivković “home bias at home,” and their findings present significant insights into the various explanations, especially information-based explanations, for both local preference and “home bias” in international portfolio decisions. Massa and Simonov (2006) also show that investors prefer stocks located nearby, because geographic proximity offers familiarity and a lower cost of acquiring information.

In this study we examine and provide evidence that the “home bias” phenomenon exists in foreign investment decisions: when investing in foreign stocks, investors show a strong preference toward foreign firms that have a presence in their home country. We study the US equity holdings of non-US-based mutual funds

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from 22 developed and developing countries and find that these funds consistently exhibit a strong preference for US firms (“foreign” firms from the perspective of these fund managers) with local presence. Results show that a greater proportion of fund managers invest in US firms that have local presence than in those that have no presence. Independent of their country of residence, fund managers in aggregate tend to overweight stocks of US firms with local presence, and more of the fund managers are inclined to hold stocks of US firms after the firms establish a presence in their home country. The results are robust to the various firm-specific characteristics that are previously shown to be determinants of foreign equity investments and to the effect of industry presence.

Our work differs substantially from extant studies of home bias in international financial markets. Empirical research into international asset allocations looks at investors’ portfolio choices of domestic firms relative to the world portfolio, and finds that investors allocate a disproportionately larger fraction of their investments to domestic stocks than what the standard portfolio theory would imply. In contrast, our study focuses on the preference of investors for local presence within their foreign equity portfolios. We show that, even in their foreign equity investment, investors still favor foreign firms that have a presence in their home market. We characterize this preference for local presence as “home bias” in foreign investments.

If investors prefer foreign stocks that have local presence, such local preference could reduce the degree of international diversification in investors’ international portfolios. Indeed, our analysis shows a strong return correlation between the US stocks with local presence and the stock market index of fund investors’ home country. Our evidence indicates that investors tend to invest in foreign stocks that are highly correlated with their local market. Because of the “home bias” in foreign investment decisions, and the high correlation between foreign stocks with local presence and the local market, the finding suggests that the extent of home bias in international portfolio choices is more serious than currently documented based on conventional classifications of domestic vs foreign equity holdings. Furthermore, the evidence is puzzling in view of the standard explanations of home bias in international asset allocations. The home bias effect in foreign investments suggests that the various explicit costs, such as exchange rate risk and

transaction costs associated with the existence of cross-border boundaries, do not fully account for investors’ international asset allocation decisions. The reason is that when examining for evidence of home bias within foreign investment portfolios, we effectively control for the existence of cross-border barriers and their impact on home bias.

Following the approach of Coval and Moskowitz (1999) and Massa and Simonov (2006), we explore whether and how information flow barriers contribute to the home bias in foreign investment decisions. Local presence of foreign firms offers geographic proximity that is associated with both familiarity and a lower cost of acquiring information. The cross-country results show that fund managers exhibit a stronger home bias when facing greater barriers of information flow. Fund managers who have different languages and cultural backgrounds and are located farther way from US equity markets are more likely to invest in US firms with local presence. Fund holdings of such stocks, however, perform no better than a passive portfolio of all US stocks with local presence, suggesting that the local presence of foreign firms does not provide significant information advantages to local fund managers. Instead, the results seem to suggest that their decisions to invest in “local” firms are influenced less by changes of information asymmetry, or information-based familiarity, and more likely by non-information familiarity bias.

Our analyses employ a new database produced by LexisNexis Group that allows us to determine the country or countries in which US firms have established their foreign operations. We merge this country location information with the CDA/Spectrum mutual fund holdings data. The CDA/Spectrum database contains information on the US equity holdings of more than 3000 mutual funds from 22 developed and developing countries. The large number of mutual funds from a wide cross-section of countries offers us a valuable opportunity not only to test the robustness of the home bias evidence, but also to examine whether the varying backgrounds of fund managers contribute to their home bias in foreign investments. While evidence of the managers’ strong bias toward holding foreign firms with local presence persists for all the countries we examine, the extent of this bias is influenced by the varying demographic characteristics of fund managers. We find that the local-presence effect is stronger for fund managers from non-English-speaking countries, from countries that are farther away from the United States,

and from countries that are culturally different from the United States. The results suggest that barriers to the flow of information between local investors and foreign firms contribute to the observed home bias in foreign investment decisions.

Our study focuses on the fund managers' foreign investments solely in the US equity market. The United States has been a major provider of direct investment in foreign countries, and many US companies have established a strong presence on a global basis. The choice of this single foreign equity market is motivated by the existing evidence that equity investments in foreign markets can be affected by the target country's overall economic and legal environments, such as stock market development, corporate governance structures, and accounting standards.² For example, extant studies have shown that foreign firms that have high accounting standards, better financial disclosure policies, and better corporate governance structures, and firms from countries with stronger investor protection, tend to be more appealing to investors. By restricting our focus to foreign investments in US equities, we are able to control for such variations in investment decisions and, at the same time, examine whether differences in demographic characteristics of fund managers such as cultural backgrounds, geographic proximity, and even spoken languages affect the observed home bias.

In various robustness tests, we examine whether the local-presence effect is driven by the degree of global involvement and worldwide visibility of US firms. Overall, the strong effect of local presence remains materially unchanged, even after controlling for the extent of the firms' global operations and foreign exchange cross-listings. Interestingly, the global involvement and presence of US firms have a significant impact on the investment decisions of mutual fund managers, but their impacts are largely independent of the local-presence effect. The foreign cross-listings of US stocks, on the other hand, have no significant influence on the foreign investment decisions of mutual fund managers, nor do they mitigate the effect of local presence.

The rest of the paper is organized as follows. The next section describes the data. The following section discusses the key results of the paper, with the robustness tests in the subsequent section. In the fourth section we conduct a number of tests to determine whether information- or non-information familiarity bias drives the strong

investor preference for foreign firms with local presence. The final section concludes.

DATA

We obtain our sample from three data sources:

- the Directory of Corporate Affiliations (DCA) database, which provides information on US firms' foreign operations worldwide
- the Thomson Financial data on foreign mutual fund holdings of US stocks; and
- Center for Research in Security Prices (CRSP) and Compustat databases.

First, we discuss below the two key datasets used in this study. Next, we briefly describe the various firm-specific control variables constructed using CRSP and Compustat databases that are employed in our analyses, followed by summary statistics of the holdings of US stocks by foreign mutual funds.

Foreign Affiliations of US Firms

We use the annual files of DCA to identify the foreign affiliates of US firms and their locations worldwide. The DCA database is produced by LexisNexis Group, a division of Reed Elsevier Inc., and contains business profiles and corporate linkage ("who owns whom") for approximately 184,000 public and private companies worldwide. It provides profiles of all major domestic and international companies for both parents and affiliates (subsidiaries and major divisions) and their locations. To be included in the database, US-based companies must demonstrate annual sales in excess of \$10 million, and non-US-based companies must demonstrate annual sales in excess of \$50 million.

The principal organization of the DCA data is geographical (by parent company) and then hierarchical (by company reportage). US companies or international companies are the ultimate parents, with subsidiaries of the same reporting level, irrespective of locations, classified in the same category. The corporate hierarchies can reach to the ninth level, but the database primarily reports main subsidiaries. While the database provides detailed information on the structure of the corporate hierarchy, such as names of executives and directors as well as their functions at the subsidiary level, its coverage of financial information, such as sales and assets, is limited. Compustat, in comparison, provides more complete information on the value of US firms' sales from foreign operations. However, Compustat does not offer detailed geographic information on the sources of foreign sales. The



foreign sales information in Compustat is mostly classified as foreign, at the continent or sub-continent level, but rarely at the country level. In our main empirical analysis we use the DCA database to identify the foreign presence of US firms at the country level. A US firm is said to have local presence in a country when it reports a subsidiary in that country.

Our study focuses on US-headquartered firms that are listed on the NYSE, AMEX and NASDAQ. We include firms that are covered by the DCA database and that have returns and stock characteristics data on CRSP and Compustat. We exclude stocks that do not have a CRSP share code of 10 and 11, such as Real Estate Investment Trusts (REITs), closed-end funds, and American Depositary Receipts (ADRs). We merge the DCA database with CRSP/Compustat data using Cusip numbers. In a few cases we use additional information, such as a firm's name or a ticker symbol, to complete the match. The DCA database includes mainly larger firms (firms with at least \$10 million annual sales), but the number of stocks it covers is only slightly smaller than that contained in both the CRSP and Compustat databases. For the sample period of 2001–2002 our sample contains 4937 firms in year 2001 and 4462 firms in year 2002; the numbers of sample firms constitute at least 90% of those in the CRSP and Compustat databases.

Foreign Investment in US Equities

The Thomson Financial ownership database (CDA/Spectrum) covers mutual funds holdings of US equities. The data report the name of the fund, the management company, and the country of fund location. We group mutual funds into their respective country based on their country of incorporation. For example, if a fund reports Germany as its located country, then it is classified as a fund from Germany. Mutual funds from different countries hold varying numbers of US equities. To be included in our sample, funds from a country have to hold in aggregate at least 30 different US stocks. We exclude offshore funds that are located in financial centers such as Ireland and Luxembourg, since the objective of such funds' location decisions is to take advantage of the significant tax incentives the two countries offer to fund operators. We also exclude mutual funds incorporated in Canada, as the Canadian market is known to be highly integrated with US markets. As a result, our sample contains detailed US equity holdings of more than 3000

mutual funds from 22 different countries worldwide for the period 2001–2002.³ Note that Thomson Financial provides information on these foreign funds' equity holdings in US markets, but not on their remaining holdings in local or other markets. Mutual funds generally report their equity holdings twice a year in the database, but many report as many as four times a year. To ensure consistency, we study the fund holdings of US stocks as of their latest reporting date of a given year.

Table 1 summarizes descriptive statistics of foreign funds' holdings in US stocks, by country, and for the year 2002.⁴ The foreign funds are from 17 developed countries and five developing or emerging countries.⁵ The latter are Chile, Hungary, Poland, Portugal, and South Africa. For each country the table reports the number of mutual funds that hold US stocks, the number of stocks held, and the total value of US stockholdings. The table also reports the total number of US firms that have local presence, and the number of US firms with local presence that are held by mutual funds in the country. The last row reports the aggregate information of the 22 countries. Overall, there are 3381 foreign funds that hold shares of approximately 3000 US stocks. The aggregate market value of US equities held by these mutual funds amounts to about \$20 billion.

As seen in Table 1, the number of mutual funds from various countries investing in US firms varies from 1 (Hungary and Poland) to 794 (Germany). The one Hungarian fund holds stocks of 40 different US firms, whereas the German funds in total hold stocks of 1483 US firms. While the United Kingdom has the second largest number of mutual funds (736) investing in US markets, its funds own the largest number of US stocks (2502). The market value of UK funds' stock investment in the United States is about \$5.5 billion, and is the largest among the funds in our sample. The Hungarian fund, on the other hand, has the smallest US stock investment of only about \$2 million.

The last two columns of Table 1 reveal one interesting observation. Mutual funds from each country own stocks of most US firms that have local presence. For example, in our sample the number of US-headquartered firms having affiliates in foreign countries varies substantially from four in Hungary to 553 in the United Kingdom. And fund managers invest in almost all US firms that have presence in their home country, ranging from 72.7% in Poland (8 out of 11 US firms with local presence in Poland) to 100% in Portugal (all 22 US firms with local presence in Portugal).

Table 1 Summary statistics of fund equity holdings in US markets, by country

Country	No. of funds	No. of stocks held	Total holding value (US\$ million)	Number of US firms with presence	No. of US firms with presence that are held
Australia	30	267	463.2	92	73
Austria	127	569	755.7	43	42
Belgium	190	991	826.5	120	109
Chile	44	216	17.4	27	25
Denmark	96	437	356.2	45	43
Finland	54	310	147	31	30
France	126	657	526.6	188	156
Germany	794	1483	3122.0	270	234
Hong Kong	78	188	196.9	55	41
Hungary	1	40	2.0	4	3
Italy	51	819	230.5	117	104
Japan	115	633	729.3	156	136
The Netherlands	101	429	1554.1	111	87
Norway	58	368	230.5	39	38
Poland	1	70	7.9	11	8
Portugal	27	284	77.3	22	22
Singapore	67	552	120.5	98	82
South Africa	38	331	320.9	30	26
Spain	256	626	140.6	110	103
Sweden	140	561	644.6	77	72
Switzerland	251	1034	3911.7	116	104
UK	736	2502	5479.9	553	482
Total	3381	2810	19,861.7	688	575

The table reports summary statistics of mutual fund equity holdings in US markets, by country, in year 2002. For each country the table reports the number of funds holding US equities, the number of US stocks held, the total holding value in US\$ million, the number of US firms with presence in the country, and the number of US firms with presence held. The total holding value is the sum of the holding values of all stocks held by mutual funds in the country. The last row reports the variables at the aggregate level across all 22 countries.

Firm Characteristics

We construct firm-specific variables that are previously shown to affect the investment decisions of institutional investors, particularly their foreign investment decisions. For example, Falkenstein (1996) examines the domestic stock holdings of US mutual fund managers, and finds that fund managers generally prefer stocks with large market capitalization, high liquidity, and low transaction costs. Gompers and Metrick (2001) investigate the holdings of US financial institutions that include both mutual funds and other institutional investors, and also find that these institutions exhibit preference toward large stocks, and stocks with low dividend yields, high turnover, and high liquidity.

Studies on the holdings of foreign investors in non-US markets find that such holdings reveal preferences for several similar firm-specific characteristics. For example, Kang and Stulz (1997) show that foreign investors investing in Japan primarily prefer large firms, firms in the manufacturing

sector, and firms with good accounting performance, low undiversified risk, and low leverage. Dahlquist and Robertsson (2001) find that foreigners who invest in the Swedish market have the tendency to invest in large firms, firms paying low dividends, and firms with large cash holdings. Recently, Covrig, Lau, and Ng (2006) have examined both domestic and foreign fund managers from 11 developed markets. They show that both groups of fund managers consider turnover rates, return on equity, and stock riskiness important in their investment decisions.

All these studies suggest that firm-specific characteristics play an important role in the stock investment decisions of institutional investors. Thus, throughout this study, our analysis controls for the following variables:

1. firm size *Size*, defined as the market capitalization of a firm's stock at the beginning of its fiscal year and expressed in natural logarithm;

2. S&P 500 index membership *S&P*, defined as an indicator variable that takes the value of 1 if a stock is in the S&P 500 index, and 0 otherwise;
3. turnover *TURN*, the ratio of total trading volume over the past 12 months relative to total number of shares outstanding at the beginning of a fiscal year;
4. dividend yield *DY*, computed as cash dividend per share divided by a stock's market price at the beginning of a fiscal year;
5. book-to-market ratio *BM*, calculated as the book value of equity divided by market capitalization;
6. momentum *MOM*, defined as the past 12-month cumulative stock return prior to a fund's reporting date;
7. *Leverage*, using the ratio of total liabilities to total assets at the beginning of a fiscal year;
8. market β , defined as the systematic risk of a stock, estimated using the Capital Asset Pricing Model (CAPM) based on the past 48 monthly stock returns preceding to the report date;
9. volatility *VOL*, given by the residual standard error from the CAPM; and
10. return on total assets *ROA*, defined as the ratio of net income to total assets as of the beginning of a fiscal year.

Table 2 reports the average values, together with medians in brackets, of our selected firm-specific characteristics associated with the stocks held by mutual funds from the 22 countries in year 2002.⁶ The last two rows present aggregate average and median values of the variables for all US stocks that have information in both the DCA and CRSP/Compustat databases. Comparing the mean (median) values of stock-specific characteristics of the US stocks in foreign fund holdings with those of the US market reveals several distinctive patterns that are broadly consistent with those found in the existing literature. On average, mutual funds around the world tend to hold large stocks, stocks with S&P 500 membership, high turnover, low book-to-market equity (growth stocks), low stock volatility, and high return on assets. For example, the average firm size held by foreign funds is between 6.64 (UK funds) and 9.89 (Polish funds), compared with 5.32 for the US market. The average book-to-market equity varies from 0.31 (Polish funds) to 0.57 (UK funds), compared with 0.80 for the US market. In general, these results imply that it is imperative that for, robustness checks, we should control for these variables when examining the importance of

a US firm's local presence in the fund holdings of mutual fund managers across 22 developed and developing countries.

LOCAL PRESENCE AND FOREIGN INVESTMENT DECISIONS

In this section we examine whether and to what extent the decision of fund managers to invest in a foreign firm is affected by the firm's presence in their home market. We explore this issue by analyzing the equity holdings of mutual fund managers at both the country and aggregate level.

Evidence of Home Bias

We examine all stocks of US firms that are available to a fund manager to determine whether a US firm's presence in her country influences her decision to hold the firm's stock. To implement our test, we employ the empirical model

$$\begin{aligned} \theta_{i,j,t} = & a_0 + a_1 L Presence_{i,j,t} + a_2 Industry_{i,j,t} \\ & + a_3 Size_{i,j,t} + a_4 S\&P_{i,j,t} + a_5 TURN_{i,j,t} \\ & + a_6 DY_{i,j,t} + a_7 BM_{i,j,t} + a_8 MOM_{i,j,t} \\ & + a_9 LEV_{i,j,t} + a_{10} \beta_{i,j,t} + a_{11} VOL_{i,j,t} \\ & + a_{12} ROA_{i,j,t} + \varepsilon_{i,j,t} \end{aligned} \quad (1)$$

where the dependent variable, $\theta_{i,j,t}$, measures the holding decision or holding weight of a fund(s) from country i in the stock of US firm j . We use three different measures of $\theta_{i,j,t}$:

- A binary decision-variable that takes the value of 1 one if any mutual fund manager located in country i holds the stock of US firm j in her portfolio, and 0 if otherwise. This measure allows us to determine how likely it is that firm j 's presence in country i would induce any fund manager from country i to hold shares of firm j 's stock.
- The holding weight in firm j 's stock by all funds from country i ; the holding weight is defined as the total value of all fund investments in the stock divided by the total value of all fund investments in all US stocks.
- The number of mutual funds that own stock of firm j divided by the total number of mutual funds in country i .

Using the latter two measures, we can examine the extent to which the fund managers from country i emphasize the importance of firm j 's local presence in their portfolio holdings.

Table 2 Firm-specific characteristics of US stocks held by mutual funds, by country

Country	Size	S&P	TURN	DY	BM	MOM	LEV	β	VOL	ROA
Australia	9.267 [9.225]	0.712 [1.000]	2.363 [1.587]	0.010 [0.005]	0.342 [0.296]	-0.051 [-0.067]	0.582 [0.609]	0.939 [0.712]	0.126 [0.107]	0.030 [0.038]
Austria	8.358 [8.567]	0.592 [1.000]	2.481 [1.711]	0.010 [0.002]	0.441 [0.366]	-0.059 [-0.083]	0.551 [0.584]	1.078 [0.806]	0.151 [0.122]	0.000 [0.026]
Belgium	7.803 [7.625]	0.437 [0.000]	2.357 [1.660]	0.010 [0.001]	0.461 [0.388]	-0.005 [-0.023]	0.542 [0.567]	1.046 [0.802]	0.149 [0.125]	0.011 [0.033]
Chile	9.497 [9.434]	0.787 [1.000]	2.707 [1.801]	0.010 [0.004]	0.339 [0.273]	-0.132 [-0.138]	0.558 [0.594]	0.979 [0.726]	0.122 [0.107]	0.039 [0.040]
Denmark	8.499 [8.756]	0.579 [1.000]	2.577 [1.737]	0.009 [0.000]	0.391 [0.334]	-0.095 [-0.108]	0.509 [0.526]	1.165 [0.885]	0.150 [0.119]	0.008 [0.030]
Finland	8.735 [8.922]	0.629 [1.000]	2.780 [1.985]	0.009 [0.002]	0.394 [0.313]	-0.126 [-0.140]	0.516 [0.552]	1.207 [0.908]	0.153 [0.121]	0.003 [0.027]
France	8.289 [8.283]	0.534 [1.000]	2.530 [1.693]	0.009 [0.002]	0.415 [0.362]	-0.040 [-0.052]	0.539 [0.564]	1.093 [0.835]	0.147 [0.123]	0.000 [0.026]
Germany	7.270 [7.288]	0.295 [0.000]	2.277 [1.575]	0.009 [0.000]	0.526 [0.417]	-0.004 [-0.026]	0.516 [0.536]	1.098 [0.810]	0.162 [0.133]	-0.020 [0.024]
Hong Kong	9.130 [9.372]	0.681 [1.000]	1.809 [1.308]	0.011 [0.008]	0.408 [0.333]	-0.004 [-0.059]	0.612 [0.639]	0.929 [0.662]	0.124 [0.106]	0.034 [0.030]
Hungary	9.703 [9.857]	0.850 [1.000]	1.560 [1.009]	0.018 [0.020]	0.384 [0.358]	-0.001 [0.010]	0.648 [0.658]	0.856 [0.655]	0.110 [0.101]	0.031 [0.015]
Italy	7.944 [7.655]	0.447 [0.000]	2.261 [1.534]	0.010 [0.002]	0.481 [0.404]	0.058 [0.035]	0.570 [0.591]	0.984 [0.759]	0.141 [0.122]	0.028 [0.032]
Japan	8.535 [8.554]	0.635 [1.000]	2.206 [1.528]	0.011 [0.004]	0.427 [0.358]	-0.007 [-0.001]	0.584 [0.610]	0.950 [0.715]	0.132 [0.112]	0.026 [0.035]
The Netherlands	8.724 [8.830]	0.620 [1.000]	2.589 [1.727]	0.010 [0.001]	0.377 [0.316]	-0.043 [-0.052]	0.549 [0.574]	1.164 [0.825]	0.153 [0.118]	-0.003 [0.027]
Norway	9.110 [9.055]	0.753 [1.000]	2.069 [1.465]	0.012 [0.007]	0.421 [0.365]	-0.024 [-0.042]	0.604 [0.623]	0.916 [0.700]	0.123 [0.109]	0.037 [0.035]
Poland	9.887 [9.793]	0.914 [1.000]	1.392 [0.931]	0.017 [0.017]	0.309 [0.271]	-0.001 [-0.016]	0.637 [0.645]	0.666 [0.549]	0.097 [0.09]	0.058 [0.051]
Portugal	8.920 [9.024]	0.644 [1.000]	2.424 [1.718]	0.009 [0.003]	0.344 [0.287]	0.004 [-0.004]	0.568 [0.584]	0.897 [0.647]	0.128 [0.108]	0.030 [0.035]
Singapore	8.089 [7.992]	0.473 [0.000]	2.051 [1.356]	0.011 [0.003]	0.458 [0.395]	0.047 [0.008]	0.552 [0.573]	0.930 [0.697]	0.138 [0.119]	0.012 [0.027]
South Africa	9.112 [9.016]	0.752 [1.000]	2.420 [1.797]	0.012 [0.008]	0.413 [0.338]	-0.048 [-0.062]	0.613 [0.634]	0.894 [0.662]	0.122 [0.105]	0.036 [0.036]
Spain	8.494 [8.530]	0.665 [1.000]	2.498 [1.831]	0.011 [0.004]	0.436 [0.350]	-0.076 [-0.090]	0.573 [0.594]	0.982 [0.699]	0.141 [0.115]	0.012 [0.030]
Sweden	8.710 [8.733]	0.668 [1.000]	2.489 [1.756]	0.011 [0.005]	0.407 [0.339]	-0.090 [-0.077]	0.573 [0.607]	1.006 [0.728]	0.136 [0.113]	0.016 [0.029]
Switzerland	7.837 [7.802]	0.419 [0.000]	2.311 [1.620]	0.010 [0.000]	0.451 [0.383]	-0.011 [-0.025]	0.533 [0.559]	1.057 [0.793]	0.150 [0.126]	-0.001 [0.028]
UK	6.635 [6.411]	0.176 [0.000]	2.048 [1.409]	0.010 [0.000]	0.574 [0.480]	0.003 [-0.019]	0.536 [0.549]	0.930 [0.643]	0.155 [0.133]	-0.001 [0.022]
US market	5.316 [5.191]	0.100 [0.000]	1.490 [0.896]	0.009 [0.000]	0.802 [0.603]	0.012 [-0.011]	0.531 [0.536]	0.964 [0.665]	0.178 [0.151]	-0.044 [0.011]

The table reports firm-specific characteristics of US stocks held by mutual funds in year 2002, by country. For each country both the mean and the median (in brackets) values of the stock characteristics are reported. Size is the natural logarithm of the market capitalization measured at the previous fiscal year-end in US\$ million. S&P is an indicator variable taking the value 1 if the stock is a member of the S&P 500 index, and 0 otherwise. Turnover (TURN) is the trade value over the previous 12 months before the report date over the fiscal year-end market capitalization. Dividend yield (DY) is the dividend per share over the fiscal year-end market price. Book-to-market (BM) is the ratio of book equity value to market capitalization at the previous fiscal year-end. Momentum (MOM) is the past 12-month cumulative stock return before the report date. Leverage (LEV) is the ratio of total liabilities to total assets at the previous fiscal year-end. β is estimated from the CAPM model using the past 48 monthly stock returns before the report date. Volatility (VOL) is the residual standard error from the estimated CAPM. Return on total assets (ROA) is the ratio of net income to total assets. The last row reports the means and medians for all available stocks in the US market.

The independent variables in Eq. (1) include: the local-presence dummy variable, $LPresence_{i,j,t}$; predetermined firm-specific characteristics, as defined above; and the industry effect, $Industry_{i,j,t}$. $LPresence_{i,j,t}$ is a local-presence dummy variable that takes the value of one if US firm j has presence in country i and zero if otherwise. $Industry_{i,j,t}$ takes the value of one if US firm j is among the US firms from a given industry (classified by two-digit SIC code) that have presence in country i , and zero otherwise.⁷ Incorporating the *Industry* effect into Eq. (1) controls for certain industry preference of mutual funds when they hold stocks of US firms with local presence.

We estimate a yearly regression and a pooled 2-year regression of Eq. (1) for each country and for all countries jointly.⁸ We repeat these regressions for each measure of $\theta_{i,j,t}$. Given the robustness of our main finding across the 2 years and across countries,⁹ to conserve space, Table 3 reports only the pooled 2-year logistic regression results with the dependent variable $\theta_{i,j,t}$, defined as a binary-decision variable, by country. Table 4, however, presents pooled 2-year cross-country regression results for all three different measures of $\theta_{i,j,t}$.¹⁰ For the subsequent sections of this paper we also conduct a pooled 2-year cross-country regression analysis, and therefore present robust t -statistics adjusted for clustered standard errors at the country level.

Tables 3 and 4 reveal strong cross-country evidence of a persistent bias exhibited by mutual fund managers toward US firms with presence in their home country. The local-presence coefficients are all positive and statistically significant at the 5% level. For example, Table 3 shows that the magnitude of the $\theta_{i,j,t}$ coefficient varies from 0.87 (t -statistic=6.53) in the UK to 5.19 (t -statistic=3.94) in Portugal, suggesting that fund managers attach a considerable importance to a foreign firm that establishes a presence in their country. Table 4 further indicates that the evidence is also robust across the different measures of $\theta_{i,j,t}$. Fund managers tend to increase significantly their holding weights of US stocks that have local presence in their home country, and the proportion of fund managers in a country holding US stocks increases with US firms that have local presence. The results also suggest that the local-presence preference of mutual funds is not driven by industry effects or other firm-specific characteristics. The industry effects exhibit statistical significance at the 10% level for only nine countries in Table 3 and for some models in Table 4. Furthermore, consistent with existing

evidence, mutual fund managers on average prefer US firms with large market capitalization, high turnover, low financial leverage, large volatility, high momentum, and stocks that are components of the S&P 500 index.¹¹

Evidence from Changes in Local Presence

We further verify our earlier evidence by examining whether the investment behavior of fund managers is influenced by any change in US firms' presence in their home country. For each country we identify any US firm that first establishes a presence in the country by either opening subsidiaries or setting up local operations at the beginning of our 2-year sample period. Among the 22 countries, Austria, Chile, Denmark, Finland, Hong Kong, Hungary, Norway, Poland, Portugal, South Africa, and Switzerland have fewer than 10 US-headquartered firms that expand their presence in these periods. For example, there is only one US firm that established a subsidiary in Hungary in 2001, and there are nine in Hong Kong and Switzerland. Our analysis therefore excludes the sample countries with a small number of US firms that operate for the first time in these countries. We construct a binary status-change variable to capture the effect of a change in the local-presence status. The binary status-change variable takes the value of 1 if a US-headquartered firm changes its status by establishing local presence for the first time in the country within the 2-year sample period, and 0 if otherwise.

We conduct cross-country logistics regressions of Eq. (1) for two separate binary dependent variables, and the local-presence status change variable is employed in place of $LPresence$. The first binary variable takes the value of 1 if the proportion of fund managers in the country holding a US stock increases, and 0 otherwise. The other binary variable takes the value of 1 if the funds' holding weight in the US stock increases, subsequent to the US firm's establishment of presence in the country, and 0 otherwise. Models 4–5 of Table 4 report the results.

The results reinforce our earlier finding that mutual fund managers prefer to invest in US firms that have presence in their home market. Establishment of firm presence in a country has a significant impact on fund managers' investments: more fund managers tend to invest in the stocks after the firms establish initial presence in the country, and also tend to increase their holdings of the stocks. The coefficients associated with the status-change variable are 2.40 (t -statistic=10.08) in Model 5 (holding weights change), and 2.26 (t -statistic=6.39) in

Table 3 The impact of local presence on mutual funds' holding decisions, by country

	<i>LPresence</i>	<i>Industry</i>	<i>Size</i>	<i>S&P</i>	<i>TURN</i>	<i>DY</i>	<i>BM</i>	<i>MOM</i>	<i>LEV</i>	β	<i>VOL</i>	<i>ROA</i>	<i>R</i> ² (%)
Australia	4.386* (10.00)	0.017 (0.10)	1.341* (17.89)	0.389* (2.17)	0.250* (5.96)	-18.559* (-3.06)	-0.382 (-1.48)	0.750* (4.37)	-0.222 (-0.63)	-0.241* (-2.23)	0.563 (0.37)	-1.284 [†] (-1.92)	22.71
Austria	2.336* (3.59)	0.182 [†] (1.76)	1.031* (22.37)	1.591* (11.74)	0.183* (6.95)	-15.020* (-3.95)	0.386* (5.11)	0.257* (2.51)	-0.245 (-1.08)	-0.198* (-3.14)	3.269* (5.47)	-1.522* (-4.81)	30.28
Belgium	2.204* (6.29)	-0.021 (-0.26)	0.943* (26.72)	2.699* (12.45)	0.204* (9.10)	-12.837* (-4.30)	-0.069 (-0.88)	0.549* (8.66)	-0.735* (-4.39)	-0.119* (-2.38)	0.158 (0.28)	-0.444 [†] (-1.76)	40.16
Chile	3.678* (3.38)	1.009* (6.53)	1.346* (17.12)	0.427* (2.21)	0.386* (8.68)	-25.724* (-3.73)	0.252 (1.16)	-0.021 (-0.09)	-0.941* (-2.43)	-0.349* (-2.96)	-3.099 [†] (-1.65)	1.555 [†] (1.84)	19.77
Denmark	2.730* (4.74)	-0.019 (-0.18)	1.033* (20.95)	0.770* (5.45)	0.140* (5.04)	-9.879* (-2.38)	-0.197 (-1.35)	0.346* (3.08)	-1.955* (-7.89)	-0.052 (-0.80)	1.364 [†] (1.90)	-1.299* (-3.91)	24.44
Finland	4.357* (5.31)	0.463* (3.79)	1.132* (20.27)	0.675* (4.23)	0.221* (7.32)	-11.720* (-2.33)	0.176 (1.32)	0.578* (4.85)	-1.484* (-5.14)	-0.122 (-1.64)	3.330* (4.69)	-1.040* (-2.58)	20.85
France	3.107* (12.80)	-0.279* (-2.63)	1.096* (23.77)	0.892* (6.66)	0.182* (7.09)	-9.916* (-2.81)	-0.018 (-0.16)	0.527* (5.82)	-1.051* (-4.83)	0.001 (0.02)	0.480 (0.69)	-1.995* (-6.72)	32.81
Germany	1.937* (10.64)	-0.152 [†] (-1.66)	1.198* (36.33)	1.475* (6.08)	0.151* (7.27)	-6.169* (-2.84)	0.361* (7.63)	0.492* (9.02)	-0.900* (-6.29)	-0.058 (-1.39)	0.764 [†] (1.73)	-1.867* (-9.63)	44.34
Hong Kong	3.406* (8.68)	-0.047 (-0.32)	1.002* (17.15)	0.300 [†] (1.69)	0.063 (1.49)	-19.581* (-3.55)	0.097 (0.62)	0.743* (5.89)	0.676* (2.06)	-0.114 (-1.12)	2.581* (2.46)	-0.131 (-0.20)	15.20
Hungary	4.882* (2.97)	-0.308 (-0.90)	0.774* (6.79)	1.770* (3.44)	-0.037 (-0.33)	12.672* (3.10)	-0.510 (-1.10)	0.735 [†] (1.80)	0.231 (0.32)	0.361 (1.54)	-2.283 (-0.53)	-1.025 (-0.59)	4.13
Italy	2.764* (9.23)	-0.306* (-3.46)	0.930* (25.23)	0.683* (5.43)	0.265* (10.88)	-6.313* (-2.36)	0.099 (1.31)	0.724* (10.77)	0.231 (1.28)	0.032 (0.55)	-1.343 [†] (-1.85)	0.777* (2.25)	34.65
Japan	2.493* (7.80)	-0.107 (-0.91)	1.233* (23.52)	1.798* (11.70)	0.259* (8.61)	-9.984* (-2.67)	0.041 (0.36)	0.690* (7.37)	-0.239 (-1.01)	-0.056 (-0.76)	-1.*268 (-1.36)	-0.5*98 (-1.45)	39.51
The Netherlands	2.546 (7.01)	-0.086 (-0.70)	1.324* (22.22)	0.743* (5.07)	0.245* (8.01)	-4.438 (-1.08)	-0.153 (-1.02)	0.958* (9.44)	-0.742* (-2.82)	-0.038 (-0.54)	2.324* (3.14)	-2.606.* (-6.99)	29.22
Norway	3.375* (3.98)	0.361* (2.84)	1.378* (21.42)	1.403* (9.53)	0.076* (1.99)	-7.030 [†] (-1.77)	0.351* (3.05)	0.609* (4.81)	0.320 (1.06)	-0.052 (-0.58)	0.452 (0.40)	-1.095* (-2.00)	32.66
Poland	2.587* (2.84)	0.630* (2.95)	0.786* (8.98)	1.356* (4.13)	-0.160 (-1.54)	12.034* (3.52)	-1.003* (-2.12)	1.150* (4.48)*	-0.809 (-1.47)	0.348 [†] (1.76)	-10.665* (-2.77)	-0.405 (-0.28)	7.77
Portugal	5.186 (3.94)	0.087 (0.67)	1.137* (19.26)	0.121 (0.76)	0.116* (3.33)	-27.892* (-5.03)	-0.769* (-3.62)	1.220 (11.91)	-0.569 [†] (-1.93)	-0.160 [†] (-1.83)	-0.445 (-0.37)	-1.790* (-3.92)	19.14
Singapore	3.286* (10.37)	-0.022 (-0.22)	0.894* (21.65)	0.476* (3.76)	0.063* (2.23)	-10.120* (-2.98)	0.037 (0.36)	0.671* (8.22)	-0.884* (-4.18)	-0.127 [†] (-1.91)	-0.565 (-0.67)	-1.050* (-3.11)	23.94
South Africa	3.115* (4.15)	0.158 (1.20)	1.318* (19.32)	0.939* (5.89)	0.292* (7.31)	-11.330* (-2.48)	0.445* (3.46)	0.786* (5.15)	0.848* (2.57)	0.126 (1.23)	-1.227 (-0.81)	0.188 (0.26)	25.32
Spain	2.191* (5.11)	-0.169 (-1.63)	1.216* (25.18)	1.977* (13.06)	0.206* (8.01)	-15.243* (-4.11)	0.418* (5.94)	0.506* (5.96)	-0.905* (-4.15)	-0.069 (-1.18)	2.098* (3.50)	-1.516* (-4.95)	37.88

Sweden	3.118*	0.333*	1.430*	1.576*	0.189*	-5.750	0.124	0.605*	-0.766*	-0.237*	2.935*	-2.340*	36.45
	(5.27)	(2.86)	(23.49)	(10.90)	(6.21)	(-1.44)	(0.97)	(5.40)	(-2.90)	(-3.33)	(4.11)	(-6.43)	
Switzerland	2.345*	-0.050	1.306*	2.181*	0.174*	4.801*	0.062	0.564*	-1.177*	-0.112*	-0.052	-1.982*	44.01
	(6.45)	(-0.57)	(30.79)	(9.15)	(7.36)	(2.52)	(0.77)	(7.92)	(-6.70)	(-2.16)	(-0.09)	(-7.89)	
UK	0.866*	-0.105	1.496*	-1.540*	0.223*	-1.090	0.114*	0.680*	-0.535*	-0.206*	-1.360*	0.186	52.21
	(6.53)	(-0.72)	(40.87)	(-5.58)	(8.65)	(-0.67)	(2.38)	(12.39)	(-3.91)	(-4.57)	(-2.88)	(0.93)	

The table reports regression coefficient estimates from the following model:

$$\begin{aligned} \theta_{i,j,t} = & \alpha_0 + \alpha_1 L\text{Presence}_{i,j,t} + \alpha_2 \text{Industry}_{i,j,t} + \alpha_3 \text{Size}_{i,j,t} \\ & + \alpha_4 \text{S\&P}_{i,j,t} + \alpha_5 \text{TURN}_{i,j,t} + \alpha_6 \text{DY}_{i,j,t} + \alpha_7 \text{BM}_{i,j,t} \\ & + \alpha_8 \text{MOM}_{i,j,t} + \alpha_9 \text{LEV}_{i,j,t} + \alpha_{10} \beta_{i,j,t} + \alpha_{11} \text{VOL}_{i,j,t} \\ & + \alpha_{12} \text{ROA}_{i,j,t} + \text{Year}_{i,t} + \varepsilon_{i,j,t} \end{aligned}$$

where $\theta_{i,j,t}$ is a binary decision-variable that takes the value 1 if a stock is held by a mutual fund in the country, and 0 otherwise. $\text{Industry}_{i,j,t}$ is a dummy variable that takes the value 1 if US firm i is among the US firms from a given industry (classified by two-digit SIC code) that have local presence in the country of the fund managers, and 0 otherwise. The other control variables are Size , S\&P , TURN , DY , BM , MOM , LEV , β , VOL , and ROA , and are defined in Table 2. Year effects are unreported. t -statistics are reported in parentheses. The pseudo R^2 (in %) is reported in the last column of the table.

^{*} and ^{*} denote significance at the 10% and 5% level, respectively. The sample period is from 2001 to 2002.

Model 6 (proportion of fund managers change), respectively. Thus US firms attract more foreign mutual fund investors to hold shares of their stocks and increase foreign fund ownership of their stocks following the establishment of their presence in the country of fund location.

GLOBAL INVOLVEMENT, VISIBILITY, AND LOCAL CHARACTERISTICS

In the previous section our results have shown that, independent of their country of origin, mutual fund managers prefer US firms that have local presence. These results, however, can also be consistent with several alternative stories. It can be argued that foreign firms with local presence have a high degree of international involvement, and such firms offer fund managers indirect international portfolio diversification (Errunza & Senbet, 1981, 1984). Hence our evidence of the home bias in foreign investment decisions may reflect the costs associated with direct diversification into the US and international operations. Alternatively, firms with local presence are those with greater global visibility that funds prefer. For example, foreign investors tend to invest in firms that have large foreign sales and firms whose stocks are cross-listed on foreign exchanges (Covrig et al., 2006; Dahlquist & Robertsson, 2001; Kang & Stulz, 1997; Merton, 1987). It is also plausible that local characteristics, particularly language, cultural preference, and geographic distance, form varying barriers to non-US fund managers when investing in US firms (Grinblatt & Keloharju, 2001). Hence the local presence of US firms, through their business activities in the local market, might help reduce the impact of such barriers.

In this section we perform several tests that help distinguish these alternative interpretations from the local-presence preference, and which allow us to better understand both the extent and the possible causes of the home bias.

US Firms' Global Involvement and Presence

US firms that have operations in the home countries of fund managers are typically firms with significant global involvement and presence. We employ numerous proxies to measure global involvement and presence. The first two proxies measure the degree of global involvement of a US firm, and are based on the fraction of total sales generated from its foreign subsidiaries. Information on the value of the firm's foreign sales is obtained from the Compustat Global Segment database. For each US

Table 4 The impact of local presence on mutual funds' holding decisions

	Binary decision variable		Holding weights		Prop. of fund managers	Holding weights Δ		Prop. of fund managers Δ	
	M1	M2	M3	M4	M5				
<i>LPresence</i>	2.217*	0.096*	0.716*						
	(5.42)	(3.19)	(3.12)						
<i>LPresence Status Δ</i>				2.396*				2.258*	
				(10.08)				(6.39)	
<i>Industry</i>	0.061	0.005*	0.030*	-0.121				-0.098	
	(0.95)	(3.57)	(3.46)	(-1.58)				(-0.97)	
<i>Size</i>	1.133*	0.012*	0.090*	0.479*				0.610*	
	(29.91)	(17.89)	(14.17)	(6.70)				(8.94)	
<i>S&P</i>	0.924*	0.094*	0.909*	0.452 [†]				0.557*	
	(5.60)	(14.19)	(8.87)	(1.89)				(2.27)	
<i>TURN</i>	0.196*	-0.003*	0.004	0.081*				0.155*	
	(12.34)	(-3.47)	(1.07)	(4.87)				(6.18)	
<i>DY</i>	-5.478*	-0.120*	-0.923*	3.383				-2.001	
	(-2.90)	(-7.08)	(-9.61)	(1.57)				(-0.96)	
<i>BM</i>	0.114*	0.005*	0.041*	-0.350*				-0.343*	
	(2.11)	(10.66)	(10.89)	(-7.18)				(-6.79)	
<i>MOM</i>	0.606*	0.000	0.002	0.696*				0.669*	
	(16.45)	(0.44)	(0.41)	(7.32)				(8.32)	
<i>LEV</i>	-0.627*	-0.001	-0.003	0.228				0.138	
	(-5.17)	(-0.54)	(-0.25)	(1.58)				(0.84)	
<i>β</i>	-0.093*	-0.003*	-0.015*	-0.204*				-0.230*	
	(-6.03)	(-4.97)	(-5.56)	(-2.98)				(-3.49)	
<i>VOL</i>	0.543	0.038*	0.157*	-1.883*				-2.362*	
	(1.28)	(7.45)	(6.55)	(-2.44)				(-2.23)	
<i>ROA</i>	-0.975*	-0.006*	-0.044*	1.224*				1.328*	
	(-3.12)	(-3.46)	(-4.03)	(6.18)				(5.84)	
<i>NObs</i>	206,757	206,757	187,944	13,630				13,630	
<i>Pseudo R²</i>	35.13	11.06	38.54	27.57				34.87	

The table reports pooled cross-country regression coefficient estimates from the following equation:

$$\begin{aligned} \theta_{i,j,t} = & a_0 + a_1 LPresence_{i,j,t} + a_2 Industry_{i,j,t} + a_3 Size_{i,j,t} \\ & + a_4 S\&P_{i,j,t} + a_5 TURN_{i,j,t} + a_6 DY_{i,j,t} + a_7 BM_{i,j,t} \\ & + a_8 MOM_{i,j,t} + a_9 LEV_{i,j,t} + a_{10} \beta_{i,j,t} + a_{11} VOL_{i,j,t} \\ & + a_{12} ROA_{i,j,t} + Year_{i,t} + Country_{i,t} + \epsilon_{i,j,t} \end{aligned}$$

where $\theta_{i,j,t}$ is a binary decision-variable (M1) that takes the value 1 if stock i is held by any mutual fund in country j , and 0 if otherwise. $Industry_{i,j,t}$ is a dummy variable that takes the value 1 if US firm i is among the US firms from a given industry (classified by two-digit SIC code) that have local presence in the country of the fund managers, and 0 otherwise. The other control variables are *Size*, *S&P*, *TURN*, *DY*, *BM*, *MOM*, *LEV*, β , *VOL*, *ROA*, and are defined in Table 2. Year and country effects are unreported. M1 contains the logistic regression estimates. M2 and M3 contain OLS regression estimates, and their R^2 s are reported. The dependent variable for M2 is the holding weight of a US stock held by funds from a country (defined as the total value of all fund investments in the stock divided by the total value of all fund investments in all US stocks), and for M3 is the fraction of domestic mutual funds that hold a US stock. *LPresence* is a dummy variable that takes the value 1 if a US firm has presence in the country of the fund managers, and 0 otherwise. *LPresence status Δ* is the change in presence status. The dependent variable of M4 is the proportion of fund managers change dummy, which takes the value 1 if the proportion increases, and 0 otherwise, and that of M5 is a holding weight change dummy, which takes the value 1 if the value weight of funds holding a US stock increases, and 0 otherwise. Models M4 and M5 include only firms that have a local-presence status change, and these are from Australia, Belgium, France, Germany, Italy, Japan, the Netherlands, Singapore, Spain, Sweden, and the UK. Robust t -statistics are reported in parentheses. NObs is the number of observations. Reported coefficients of M2–M5 are expressed in percent.

* denotes significance at the 5% level. The sample period is 2001–2002.

firm we construct a global sales dummy ($GSales_D$) that equals 1 if the firm's foreign sales from global operations constitute at least 10% of its total sales, and 0 otherwise. While the 10% cut-off criterion is somewhat conservative, it ensures that our results would be fairly robust.¹² The other measure

uses the percentage of foreign sales to total sales ($GSales\%$). The second set of proxies are based on the degree of a firm's global geographic diversification. One proxy is the global presence dummy ($GPresence$), which equals 1 if a US firm has presence in more than five countries and zero otherwise, and

the other is the global-presence coverage variable (*GCoverage*), defined as the log of the number of countries in which a US firm has established local presence worldwide.

The third set of proxies based on the foreign listing of a US firm's stock measures a firm's global visibility, and the information is from DCA. The first listing proxy is the local cross-listing dummy (*LListing*), which equals 1 if the US stock is listed in the local market, and zero otherwise. The other listing proxy is the regional cross-listing dummy (*RListing*), which equals 1 if the US stock is listed in any regional stock market, and 0 otherwise. In our sample of 22 countries there are US firms that list their stocks on the local exchanges of Australia, Belgium, Denmark, Finland, France, Germany, Japan, the Netherlands, Norway, Sweden, Switzerland, and the United Kingdom, but not on those of the 10 remaining countries. Given that only 12 sample countries have listings of US firms, and the number of listed US firms is small, we consider the regional listing of US firms. For example, if a US firm lists its stock on the Tokyo Stock Exchange but not on the Singapore Stock Exchange, then its local cross-listing dummy is 1 for the Japan sample and 0 for the Singapore sample. The regional cross-listing dummy for this US firm, on the other hand, is 1 for both the Japan and Singapore samples, as the US firm is listed on an exchange located in Asia.

We replicate the logistic regression of Model 1 in Table 4 by incorporating each of these proxy variables in place of and jointly with *LPresence*. Coefficient estimates of the variables of interest are tabulated in Table 5. Results of Model 1–12 provide corroborating evidence that a foreign firm's presence in the home country of fund managers still plays a critical role in their foreign investment decisions, even after controlling for the firm's global involvement and visibility. The magnitude and level of statistical significance of the coefficient on the local-presence dummy are substantially similar to those of Model 1 in Table 4. Interestingly, all the proxies for global involvement and presence are positive and statistically significant when estimated without *LPresence*, but only the coefficients of *GPresence*, *GCoverage*, and *LListing* become statistically insignificant and even negative when they are considered jointly with *LPresence*.

In Models 13–16 of Table 5 we investigate whether growth in a firm's foreign sales is the underlying driver for the change in the proportion of fund managers or in the fund's weight for holding firms with local operations. Models 13–16

correspond to Models 4–5 of Table 4. The results are consistent with those of Models 1–12 that local presence plays a significant role in the proportion of fund managers investing in firms with local presence as well as in their holding weights.

In summary, the results indicate that the local-presence effect is not attributed solely to the fund preference for foreign firms with global involvement or global presence, and therefore provide reinforcing evidence that there exists a home bias in the foreign investment decisions of fund managers. Existing studies (Kang & Stulz, 1997) argue that investors prefer foreign firms with global presence in their international investment decisions. Interestingly, our evidence suggests that such preference for global presence is driven partly by preference for local presence. We also find some evidence that the extent of global presence of US firms has measurable impacts on the local preference effects. By investing in foreign firms with local presence, because these firms are more likely to have greater global presence, fund managers could also achieve global diversification benefit without incurring costs of direct international investments.

Language, Culture, and Distance

One interesting characteristic of our sample of mutual funds worldwide is that the managers communicate in varied languages, differ in their geographic distance from US equity markets, and are of varied cultural backgrounds. We perform logistic regression tests of whether language and distance (and probably culture) affect the relative importance of local-presence effects in foreign investment decisions. Language, culture, and distance are useful proxies for communication and information flow barriers. By studying the impacts of language, culture, and distance on local bias, we examine whether and how various information barriers contribute to the home bias we document.

We divide the sample of 22 countries into English-speaking countries (Australia, South Africa, and the United Kingdom) and non-English-speaking countries (the remaining 19 countries in our sample).¹³ We also group the countries into Asia and Europe.¹⁴ As US firms are closer to European fund managers than to Asian managers, the impact of distance should be greater for the latter than the former. The results are presented in Table 6.

Table 6 shows that the local-presence effect is stronger for non-English-speaking than for English speaking countries, and for Asian than for European countries. Their differences are statistically

Table 5 Effects of a US firm's international involvement

Variables of interest	Binary decision variable												Holding wt Δ		Prop. of managers Δ	
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16
<i>LPresence</i>		2.162*		2.185*		2.288*		2.315*		1.980*		2.154*				
		(5.25)		(5.30)		(5.37)		(5.46)		(4.44)		(5.18)				
<i>LPresence Status</i> Δ														2.393*		2.255*
														(10.13)		(6.40)
<i>GSales_D</i>	0.255*	0.139*														
	(6.32)	(3.03)														
<i>GSales%</i>			0.341*	0.159*												
			(5.38)	(2.19)												
<i>GPresence</i>					0.254*	-0.132 [†]										
					(6.63)	(-1.81)										
<i>GCoverage</i>							0.132*	-0.058*								
							(8.44)	(-1.69)								
<i>LListing</i>									3.482*	1.638						
									(3.04)	(1.29)						
<i>RListing</i>											2.955*	0.930*				
											(9.55)	(2.71)				
<i>GSales Gro</i>													0.133*	0.123*	0.123*	0.114*
													(3.86)	(4.14)	(3.12)	(3.17)
Nobs	206,757	206,757	206,757	206,757	206,757	206,757	206,757	206,757	112,763	112,763	187,981	187,981	13,630	13,630	13,630	13,630
Pseudo <i>R</i> ²	34.76	35.15	34.74	35.14	34.73	35.14	34.75	35.14	40.26	40.68	35.53	35.93	25.89	27.58	33.75	34.90

The table reports regression estimates of a pooled cross-country regression model:

$$\begin{aligned} \theta_{i,j,t} = & a_0 + a_1 LPresence_{i,j,t} + a_2 I Presence_{i,j,t} + a_3 Size_{i,j,t} \\ & + a_4 S\&P_{i,j,t} + a_5 TURN_{i,j,t} + a_6 DY_{i,j,t} + a_7 BM_{i,j,t} \\ & + a_8 MOM_{i,j,t} + a_9 LEV_{i,j,t} + a_{10} \beta_{i,j,t} + a_{11} VOL_{i,j,t} \\ & + a_{12} ROA_{i,j,t} + Year_{i,t} + Country_{i,t} + \varepsilon_{i,j,t} \end{aligned}$$

where $\theta_{i,j,t}$ is a binary decision-variable that takes the value 1 if a mutual fund manager located in country i holds stock of US firm j in her portfolio, and 0 otherwise; $LPresence_{i,j,t}$ is a local-presence dummy variable that takes the value 1 if US firm j has presence in country i , and 0 otherwise; $I Presence_{i,j,t}$ is a dummy variable that takes the value 1 if any US firm j from a given industry (classified by two-digit SIC code) has presence in country i , and 0 otherwise. We construct several variables to measure a US firm's international involvement, namely global sales, global coverage, and local and regional listings. $GSales_D$ is the global sales dummy, which equals 1 if a US firm has 10% of its sales from foreign operations, and 0 otherwise. $GSales\%$ is foreign sales as a percentage of total sales, and $GSalesGro$ is the foreign sales growth rate. $GPresence$ equals 1 if a US firm has presence in more than five countries, and zero otherwise. $GCoverage$ is the global-presence coverage variable, defined as the log number of countries in which a US firm has established local presence. $LListing$ is the local cross-listing dummy, and $RListing$ is the regional cross-listing dummy; $LListing$ ($RListing$) equals 1 if the US stock is listed in the local (regional) market(s), and 0 otherwise. The dependent variable of M1–M12 is a binary decision variable that equals 1 if a US stock is held by a mutual fund in the country, and 0 otherwise. $LPresence\ status\ \Delta$ is the change in presence status. The dependent variable of M13 and M14 is a holding weight change dummy, which takes the value 1 if the value weight of funds holding a US stock increases, and 0 otherwise. The dependent variable of M15 and M16 is the proportion of fund managers change dummy, which takes the value 1 if the proportion increases, and 0 otherwise. Models M13–M16 include only firms that have a local-presence status change, and these are from Australia, Belgium, France, Germany, Italy, Japan, the Netherlands, Singapore, Spain, Sweden, and the UK. The untabulated control variables and year and country effects are defined in Table 4.

[†]and * denote significance at the 10% and 5% level, respectively. The sample period is from 2001 to 2002.

Table 6 The impacts of language, distance, and type of markets

	<i>L</i> Presence	<i>t</i> -statistic
Non-English-speaking (19 countries)	2.665*	14.10
English-speaking (3 countries)	1.405*	2.36
Difference	1.260*	2.01
Asian (3 countries)	3.036*	12.56
European (16 countries)	1.964*	4.86
Difference	1.072*	2.28
Emerging (5 countries)	3.708*	10.22
Developed (17 countries)	2.174*	5.33
Difference	1.534*	2.81

The table reports test results for the varying impacts of language, distance, and type of markets on the relative importance of local-presence effects in foreign investments decisions. The sample of 22 countries is grouped into English-speaking and non-English-speaking countries (top panel), Asian and European countries (middle panel), and emerging and developed countries (bottom panel). A pooled logistic regression is performed within each group, where the dependent variable is a binary decision variable that takes the value 1 if a stock is held by a country within the group, and 0 otherwise. For the given group, the independent variables are the local-presence dummy variable, firm-specific control variables, country effect variables, and a year effect variable. The firm-specific control variables are defined in Table 2. The last row of each panel reports the difference in local-presence effects between the two groups, and the *t*-statistic of the difference.

* denotes significance at the 5% level.

significant at conventional levels. Such findings are consistent with the notion that the local presence of US firms is more likely to help overcome the language and distance barriers faced by non-English-speaking fund managers, and by fund managers who are located farther away from the US. Furthermore, it is reasonable to assume that the culture of US firms is more similar to the culture of European managers than to that of Asian managers. Thus we can also interpret the distance result as an indirect evidence of a cultural influence on foreign investments.

We further investigate whether fund managers from emerging and developed markets place different emphasis on the importance of local presence in their portfolio choices. It can be argued that fund managers from emerging markets tend to be less sophisticated, and also have greater difficulty accessing information about foreign firms, than their counterparts from developed markets. The bottom panel of Table 6 confirms this conjecture. The effect of local presence is statistically stronger in the foreign portfolio investment of the fund managers from emerging markets than of those from developed markets.

Regardless of their cultural background, the language they communicate in, or their country of location, mutual fund managers worldwide

exhibit a strong bias for US firms that have presence in their home country. A closer analysis suggests that local presence plays a more significant role in the US stock portfolios of fund managers from farther and less developed countries, and from countries that have a different language and culture from those of the US firms.

INFORMATION, FAMILIARITY, AND LOCAL PRESENCE

We have established that the local presence of a foreign firm affects the foreign investment decisions of domestic mutual fund managers across a broad range of developed and developing countries. A natural question that arises is: what drives this strong local-presence preference for foreign firms? Understanding the cause(s) of this local preference not only helps us assess the consequence of such portfolio choices, but also provides further insights into the general home bias phenomenon.

It is unlikely that the local-presence preference in foreign investments is attributable to traditional theoretical explanations of home bias, such as fixed costs or barriers to international investing. We therefore focus on two explanations advocated in recent home-bias literature. The preference for local presence could be induced by investment strategies associated with information asymmetries or investor behavioral bias. Massa and Simonov (2006) ascribe both explanations to the role of familiarity – one is information driven and the other is behavioral-heuristic. In their study, the authors show that investors tend to concentrate in closely located stocks, because geographic proximity offers a less costly way of obtaining information. They find that familiarity-based investment decisions are information driven. Several studies (e.g., Coval & Moskowitz, 1999; Covrig et al., 2006; Dahlquist & Robertsson, 2001; Kang & Stulz, 1997) also show that investors attempt to mitigate their informational disadvantages by investing in foreign firms that have low information asymmetries. On the other hand, other studies (e.g., Huberman, 2001; Kumar, 2004; Zhu, 2002) show that investors' decisions to invest in close-by firms in the domestic equity market are not information driven. Their results are more in line with the arguments that familiarity-induced investing is more a behavioral bias, which stems mainly from the influence of availability heuristics.¹⁵

It seems less plausible that fund managers can access much information about US-headquartered firms, through their operations located in their

home country, to reduce their informational disadvantage relative to US investors. Thus information-based familiarity appears to be a less likely explanation for the local bias we have documented. However, the local operations of these foreign firms could possibly serve as channels of communication between the firms and investors. Fund managers could face less severe informational disadvantages when investing in foreign firms with local presence than in foreign firms with no local presence. As a result, changes in the level of information asymmetry, while not completely eliminating the information disadvantages that fund managers face, could still have a significant impact on the funds' investment decisions. Alternatively, the local operations of these foreign firms could establish local visibility to investors. Such local operations possibly provide little value relevant information, but perceived familiarity with these foreign firms explains fund managers' investment behavior.

In this section we examine how local presence affects the investment decisions of fund managers, and test whether information- or behavioral-based familiarity drives the strong fund preference for foreign firms with local presence.

Home Bias and Firm Characteristics

We investigate the impact of firm characteristics on the local-presence preference we documented earlier. Particularly, we study whether and how local fund managers invest across the varying characteristics of US firms that have presence in their home country. The firm-characteristic variables we employ are defined earlier, and are substantially the same as those used in Coval and Moskowitz (1999). They include firm size, S&P 500 index membership, turnover, dividend yield, book-to-market, momentum, leverage, market β , volatility, return on total assets, and year and country dummy variables. These variables serve as proxies for information asymmetry and visibility, and also include those that affect foreign investment decisions. In our earlier analysis we employ these variables as controls, but in this subsection we investigate how they affect fund managers' investment decisions among stocks that have local presence. Unlike our study, Coval and Moskowitz focus only on US fund managers and their investment decisions with respect to US firms with varying distances from the locations of the fund managers.

Because local fund managers invest in the majority of US firms with local presence, we

measure the preference of fund managers based on the weights of the stocks in the aggregate fund portfolio in each country. Here we define the aggregate fund portfolio as consisting of all US stocks that have presence in the country. We first calculate the holding weight of a stock in the aggregate fund portfolio based on the holdings of all funds located in the country, and also calculate the market weight of a stock in the aggregate portfolio based on the market capitalization of the stock.¹⁶ The difference between the holding and market weights measures the deviation of fund holdings from a passive investment strategy that invests in all stocks with local presence, but based solely on market weights. Estimates of the pooled cross-country regression of this differential weight on firm-specific characteristics are reported in Model 1 of Table 7.

The results reveal the underlying firm characteristics associated with the local-presence effect. Of particular interest is that the local-presence effect is much stronger for small firms, firms with high leverage, low book-to-market value, low momentum, high ROA, high turnover, and firms whose stocks are S&P 500 index members. Small firms are generally associated with high information asymmetry. These are the stocks that are more likely to benefit from local presence through greater reduction in information asymmetry. This information-based familiarity explanation is in line with Coval and Moskowitz's (1999) argument that local preference for small firms is likely to be information driven. On the other hand, small firms are also more likely than large firms to benefit from local presence through increasing visibility. Thus the impact of firm size on local preference is also in accord with fund managers' heuristic behavior: fund managers overweight small firms simply because of their increased local visibility.

In Models 2–7 of Table 7 we examine whether such preferences are robust across fund managers, given their varied cultural backgrounds, geographic proximity, and spoken languages. We divide the full sample into subgroups similar to those of Table 6, and run a panel regression similar to Model 1 for each group. Models 2–3 report estimates for English-speaking and non-English-speaking countries, Models 4–5 for Asia and Europe, and Models 6–7 for emerging and developed countries, respectively. The results are in general consistent with the aggregate findings in Model 1. One noticeable observation is that among various firm characteristics, small firms with high leverage

Table 7 Firm characteristics, fund holding weight, and home bias

Parameter	ALL	Non-English speaking	English speaking	Asian	European	Emerging	Developed
	M1	M2	M3	M4	M5	M6	M7
<i>Size</i>	-0.634* (-4.95)	-0.727* (-5.48)	-0.431 (-1.80)	-0.521 [†] (-3.71)	-0.617* (-4.09)	-2.826 [†] (-3.56)	-0.564* (-5.11)
<i>S&P</i>	0.845* (5.15)	0.795* (4.26)	0.698 (1.65)	0.554 (1.42)	0.875* (4.38)	0.509 (0.18)	0.754* (5.09)
<i>TURN</i>	0.175* (5.47)	0.161* (4.18)	0.148 (1.96)	0.106 (1.84)	0.171* (4.23)	-0.409 (-0.88)	0.159* (5.44)
<i>DY</i>	3.420 (1.25)	5.345 (1.42)	0.921 (0.17)	-0.249 (-0.04)	3.866 (1.25)	82.760 (0.85)	0.685 (0.46)
<i>BM</i>	-0.608* (-2.91)	-0.844* (-2.90)	-0.356 (-1.48)	-0.413 (-0.64)	-0.610* (-2.46)	-7.816 (-1.23)	-0.440* (-3.43)
<i>MOM</i>	-0.320 [†] (-1.87)	-0.485 [†] (-1.76)	-0.132 (-1.17)	-0.534 (-2.13)	-0.267 (-1.52)	-8.202 (-1.88)	-0.223 [†] (-1.83)
<i>LEV</i>	0.944* (2.53)	0.896 [†] (1.84)	0.805 (1.39)	0.522 (0.36)	0.882* (2.20)	3.301 [†] (4.29)	0.718 [†] (2.10)
β	-0.050 (-0.51)	0.010 (0.08)	-0.155 (-0.87)	0.036 (0.14)	-0.012 (-0.11)	-1.228 (-0.95)	-0.010 (-0.10)
<i>VOL</i>	-0.458 (-0.71)	-0.954 (-1.07)	0.417 (0.34)	0.478 (0.27)	-0.828 (-1.22)	6.084 (0.76)	-0.685 (-1.16)
<i>ROA</i>	0.670 [†] (2.08)	0.787 (1.66)	0.309 (1.34)	0.297 (0.12)	0.716* (2.18)	1.261 (0.33)	0.729* (2.16)
Nobs	3899	2785	1114	512	3142	145	3754
R^2	11.55	11.91	13.59	5.89	12.06	42.70	10.98

The table reports pooled cross-country OLS regression coefficient estimates of firm characteristics preferred by mutual funds across all countries (M1) and by group. The sample of 20 countries (excluding Hungary and Poland) is grouped into English-speaking and non-English-speaking countries (M2 and M3), Asian and European countries (M4 and M5), and emerging and developed countries (M6 and M7). In each model the dependent variable is the holding weight of a US stock held by funds in the country minus its market weight in the country portfolio. The holding weight is defined as the total value of all fund investments in the stock divided by the total value of all fund investments in US stocks, and the market weight is the market value of the stock held by funds divided by the total market value of all stocks held by funds within that country. The independent variables are the firm-specific characteristic variables as defined in Table 2, and include firm size (*Size*), S&P 500 index membership (*S&P*), turnover (*TURN*), dividend yield (*DY*), book-to-market (*BM*), momentum (*MOM*), leverage (*LEV*), market β , volatility (*VOL*), return on total assets (*ROA*), and unreported year and country effects. Robust *t*-statistics are reported in parentheses. NObs is the number of observations. Reported coefficients and R^2 s are expressed in percent. [†] and * denote significance at the 10% and 5% level, respectively. The sample period is from 2001 to 2002.

are particularly favored by fund managers from different subgroups. Interesting enough, our findings are similar to those of Coval and Moskowitz (1999), who find that domestic fund managers also favor small US firms with high leverage.

Investment Performance of US Firms with Local Presence

To gain further insights into the causes of home bias in foreign investment decisions, we now examine the return performance of US stocks held by fund managers. Specifically, we compare the return performances between US firms with local presence that are held by fund managers with a passive portfolio of all stocks with local presence. If the local presence of a foreign firm significantly reduces the informational disadvantages of fund managers in their foreign investment decisions, we should be able to observe such effects through the

return performance of their stock holdings. In particular, we should be able to discern any informational effects by comparing the return performances between stocks with local presence that are overweighted with those with local presence that are underweighted by fund managers.

We use characteristic-adjusted returns computed using size, book-to-market, and stock price momentum benchmarks to measure the performance of stocks with local presence. First, we construct 27 characteristic benchmark portfolios that capture the three stock characteristics that are shown to explain stock returns.¹⁷ Next, we assign each stock to a characteristic benchmark portfolio according to its rank based on size, book-to-market, and its past 1-year return. Then we calculate the characteristic-adjusted monthly returns on each stock by subtracting the stock's corresponding characteristic

benchmark portfolio's returns from the stock's returns.

Panel A of Table 8 reports average monthly characteristic-adjusted returns of two portfolios: a holding-value-weighted portfolio of stocks that have local presence, and a market-value-weighted portfolio of the same set of stocks.¹⁸ Results for the holding-value-weighted portfolios show that the fund holdings of stocks with local presence generally perform no differently from their corresponding characteristic-adjusted benchmark. In aggregate, the characteristic-adjusted stock returns of the holding-value-weighted portfolios are insignificantly different from zero at conventional levels. The results are not surprising: local fund managers gain no significant informational advantage for investing in US firms with local operations.

The difference in the returns of the holding-value- and market-value-weighted portfolios offers more robust tests of any informational effect. As we have shown in the preceding subsection, fund managers' portfolios of stocks with local presence deviate significantly from a passive market-value-weighted benchmark of all stocks with local presence. In particular, fund managers seem to overweight stocks that are more affected by information asymmetry and firm visibility. Reducing information asymmetry, while not improving fund managers' performance relative to their market benchmarks, can still benefit fund managers in their investment decisions among stocks with local

presence. Comparing the performances of the two portfolios can help differentiate whether it is information or behavioral biases that explain such deviations. The results show clear evidence that the performance of the holding-value-weighted portfolio does not differ significantly from the performance of the passive market-value-weighted portfolio. Overall, the portfolio performance results suggest that local fund managers gain no informational advantage when investing in US firms with operations established in their home country.

Cost of Home Bias in Foreign Investments

This subsection explores the potential cost of home bias in foreign investment decisions. As we have shown earlier, because fund managers' local-preference is not information driven, it does not improve fund performance, and is unlikely to offer much benefit to investors. Such local preference, however, might reduce the benefit that can be achieved through international diversification.

Panel B of Table 8 provides evidence that there is a reduction of international diversification when the fund holdings are tilted toward US firms with local presence. This panel shows the average return correlation between US stocks (with and without local presence) held by local fund managers and their domestic market index. Monthly returns of both stocks and Morgan Stanley Capital International country indexes for the period 2000–2002 are obtained from Datastream. We calculate the

Table 8 Performance of US stocks with local presence and their correlations with local market index

Panel A Return performance of US stocks with local presence

Country	Holding-value weighted	Market-value weighted	Return difference
ALL	-0.142 (-1.66)	-0.205* (-4.35)	0.063 (0.75)

Panel B Mean correlation coefficient of US stocks with local market index

	US stocks with local presence	US stocks w/o local presence	Difference in correlation coeff.
ALL	0.258	0.183	0.075*

Panel A of the table reports the monthly average characteristic-adjusted excess return of the portfolio of stocks with local presence, weighted by their holding values (Holding-value weighted), and the monthly average portfolio return weighted by the market capitalizations of the stocks in the portfolio (Market-value weighted), together with their *t*-statistic. Based on 27 size, book-to-market, and momentum benchmark portfolios, the characteristic-adjusted excess return for a given stock is calculated as the difference between the stock's raw return and its corresponding benchmark return. The last column reports the performance difference between the two groups, and the associated *t*-statistic. Reported returns are expressed in percent.

Panel B shows the average return correlation coefficients between US stocks (with and without local presence) held by non-US funds and the market index of the funds' country of location. For each country we calculate the correlation coefficients between the monthly returns on US stocks with local presence held by local funds and the corresponding local market index (i.e., Morgan Stanley Capital International's country index) returns, and also that of the correlation coefficients between the monthly returns on US stocks with no local presence held by local funds and the corresponding monthly local market index returns. The difference in their return correlation coefficients, and the associated *t*-statistic, are reported in the last column of the panel.

*denotes significance at the 5% level. The sample period is from 2001 to 2002.



cross-sectional monthly return correlation coefficients between US stocks with local presence that are held by local fund managers and the local market index, and also between US stocks with no local presence that are held by local funds and the local market index. We also compute the difference in their correlation coefficients and the associated *t*-statistic. The return correlation difference is statistically significant, indicating the extent to which the local-presence preference can adversely affect the diversification benefits of the fund managers' foreign portfolios.

In summary, the results show no significant informational effects associated with the local-presence preference of fund managers. Evidence therefore suggests that such local preference is likely a result of familiarity-based behavioral bias. While this local bias does not directly affect the return performance of the foreign equity portfolios, it seems costly to investors. The home bias in foreign equity investment reduces the benefit of international diversification, because foreign stocks that have local presence tend to have greater exposure to the local market.

CONCLUSION

We examine how mutual funds worldwide make investment decisions in US-headquartered firms by employing data on the US equity holdings of more than 3000 non-US-based mutual funds from 22 developed and developing countries for the period 2001–2002. We find pervasive evidence of home bias in the fund managers' foreign investment decisions. Mutual fund managers favor US firms that have presence in their home country, even after controlling for various firm characteristics including industry effects, firm worldwide visibility, and the degree of international involvement. This home bias behavior is also robust to the fund managers' varying countries of location, cultural backgrounds, and spoken languages. We also show that foreign firms with local presence not only provide little value-relevant information to local fund managers, but also are strongly correlated with domestic markets.

The evidence that local presence plays an important role in foreign investment decisions has several implications. First, evidence of the home bias in foreign investments suggests that the extent of home bias is more serious than currently documented in the international finance literature. If investors prefer foreign firms that have significant exposure to their domestic market, such evidence

further suggests that the benefits of international diversification derived from cross-border holdings are overestimated. Second, existing studies have offered several explanations for the existence of home bias, and the explanations include market imperfections resulting from cross-border barriers, information asymmetries, and familiarity. Given that our analyses control for the existence of cross-border barriers, our findings suggest that various aspects of investor familiarity contribute to the observed home bias in foreign investment decisions. Undoubtedly, such factors should also help explain the home bias phenomenon in foreign vs domestic investment decisions. Finally, our evidence implies that firms could raise equity financing in the foreign markets by establishing a physical presence in those markets, and policy-makers could attract foreign investments in their domestic equity markets by encouraging domestic firms to expand internationally.

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NOTES

¹French and Poterba (1991), Tesar and Werner (1995), among others, document evidence of "home bias." See Lewis (1999) and Karolyi and Stulz (2003) for excellent reviews of the home bias literature.

²See, for example, Chan et al. (2005), Dahlquist, Pinkowitz, Stulz, and Williamson (2003), and Grinblatt and Keloharju (2001).

³The information on US equity holdings by foreign funds became available from 1999, but the early filings are incomplete.

⁴The unreported descriptive statistics for the year 2001, available upon request, are quite similar to those for the year 2002.

⁵We classify countries as developing or emerging countries based on the definitions provided by the International Finance Corporation.

⁶The distribution of the summary statistics for year 2001 is similar to that of year 2002.

⁷For example, if US firm *j* is among other US firms from the manufacturing industry of industrial machinery and equipment (two-digit SIC code=35) that have a local presence in country *i*, then for the sample of country *i* all these US firms from this industry have an *Industry* value of 1. Otherwise, *Industry* equals 0 if no

US firms from this particular sector (including firm j) have a local presence in country i .

⁸We control for year effects when estimating a pooled 2-year regression of Eq. (1) for each country, and control for both year and country effects when estimating a pooled 2-year regression of Eq. (1) for all countries.

⁹The key results for two separate years are qualitatively the same as those for the pooled 2-year regressions with year and country effects incorporated.

¹⁰In Table 4, Model 1 is estimated based on a logistic regression approach, whereas Models 2–3 are based on OLS. Further, Model 3 excludes Poland and Hungary, where both countries only have one mutual fund holding US stocks. In these two countries the proportion of fund managers that hold a US stock is 1, and hence the dependent variable would be a constant.

¹¹We also test whether the local-presence effect has a significant incremental contribution to the model. The untabulated result shows that the incremental information test statistic with a chi-square distribution is strongly significant at conventional levels. The incremental information test evaluates the relative contribution of the independent variable to the explanatory power of the model (Soofi, 1992).

¹²Our results remain materially unchanged when we use a 20% cutoff criterion for the foreign sales of US firms.

¹³The primary spoken languages of mutual fund managers from non-English-speaking countries are German (Austria, Germany and Switzerland), Dutch (Belgium and the Netherlands), Spanish (Chile, and Spain), Finnish (Finland), Danish (Denmark), French (France), Chinese (Hong Kong and Singapore), Italian

(Italy), Japanese (Japan), Portuguese (Portugal), Swedish (Sweden), Hungarian (Hungary), Norwegian (Norway), and Polish (Poland). The information is obtained from The World Factbook in <https://www.cia.gov/library/publications/the-world-factbook/fields/2098.html>.

¹⁴We did not include Australia, Chile, or South Africa, since they do not fall into either category.

¹⁵The influence of availability heuristic comes from the behavioral theories of Tversky and Kahneman (1973).

¹⁶The holding weights and market weights of the stocks in the aggregate fund portfolio, respectively, sum up to 1. Our analysis excludes Hungary and Poland owing to the much smaller number of observations in each country compared with other countries (4 and 11, respectively).

¹⁷We construct the 27 characteristic portfolios as follows. At the beginning of each year, we employ the breakpoints of NYSE firms to sort all firms into 10 portfolios based on each firm's market capitalization. We group the first three deciles into the small stock portfolio, the next four deciles into the medium size stock portfolio, and the largest three deciles into the large stock portfolio. Similarly, we assign all stocks into three book-to-market portfolios based on NYSE breakpoints. Lastly, we form three stock price momentum portfolios based on past 1-year stock return. The 27 portfolios are formed according to the three independent sorts.

¹⁸We remove two countries that have very small numbers of US firms with local presence from the sample: Hungary and Poland. Results including the two countries are similar to the evidence reported in the table.

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