Investor-Stock Decoupling in Mutual Funds*

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Abstract

We investigate whether mutual funds whose investors and stocks are decoupled (i.e., investor location does not coincide with that of the stock holdings) benefit from a natural hedge as they have fewer outflows during market downturns and fewer inflows during upturns. Using a sample of equity mutual funds from 26 countries, we find that funds with higher investor-stock decoupling exhibit higher performance and this is more pronounced during the 2007-2008 financial crisis. We also find that decoupling allows fund managers to take less risk, be more active, and tilt their portfolios toward smaller and less liquid stocks.

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1. Introduction

The academic literature has traditionally been skeptical about the ability of mutual funds to systematically generate positive risk-adjusted performance (French, 2008). One source of informational advantage is geographical proximity. Using U.S. data, Coval and Moskowitz (1999, 2001) show that equity mutual funds perform better when investing in local stocks. However, the international evidence is mixed.[1]

In this paper, we investigate whether geographical proximity may hurt the ability of funds to withstand fire sales risk. Unlike the information channel, investor-stock proximity can be a source of competitive disadvantage. Mutual fund's open-ended structure means that flows from investors that are geographically close can impose "limits to arbitrage" (Shleifer and Vishny, 1997) preventing fund managers from exploiting investment opportunities. Fund managers may be forced to unwind their positions in response to large outflows and expand existing positions given large inflows.[2] This can have direct implications on performance either because the fund manager is required to hold cash (Edelen, 1999) or because the outflows can induce the fund to incur in fire sales (Coval and Stafford, 2007). This can also directly affect the prices of the assets held by the funds (e.g., Frazzini and Lamont, 2008; Lou, 2012), and trigger strategic behavior by other fund managers holding similar assets (Chen, Goldstein, and Jiang, 2010). Mutual funds can delay such outflows with back-end loads or hold cash to avoid selling assets.[3] Another mechanism is selling fund shares to investors outside the country of investment and diversifying the fund's capital sources.

Consider, for example, the Fidelity Magellan fund, which invests in U.S. stocks and is

[1] Locals have an edge in Choe, Kho and Stulz (2005), Dvorak (2005) and Teo (2009) but not in Kang and Stulz (1997), Grinblatt and Keloharju (2000), Froot, O'Connell and Seasholes (2001) and Froot and Ramadorai (2008).
[2] Chen, Hanson, Hong, and Stein (2008) show that hedge funds benefit from "asset fire sales" by mutual funds.
[3] Closed-end funds address it directly via their closed structure (Deli and Varma, 2002) while hedge funds use investment lock-up restrictions (Aragon, 2007) or may suspend investor redemptions to avoid selling illiquid assets.

marketed to U.S. investors, and the Natixis Actions U.S. Value fund, which invests in U.S. stocks, but is marketed instead to French and U.K. investors. In the case of a negative shock leading to a drop in the U.S. stock market, the Fidelity fund is more likely to face withdrawals by its investors as they will experience a drop elsewhere in their U.S. assets and have increased liquidity needs. Fidelity will be forced into selling when asset prices are depressed. In contrast, the Natixis fund is less likely to face withdrawals from its European investors as flows from these investors do not depend just on the U.S. market performance as they are also linked to investors' home market conditions and foreign currency effects.

We will therefore compare two hypotheses. The first hypothesis posits that investor-stock distance is a source of competitive advantage. A fund whose investors' wealth is exposed to shocks that also affect the fund holdings will experience redemptions when its portfolio is underperforming and inflows from relatively wealthier investors when its portfolio is overperforming. The fund manager is forced to engage in asset fire sales in market downturns and in (fire) purchases in market upturns. In contrast, funds with "decoupled" investors – i.e., the ones with a negative or low correlation between investor flows and portfolio stock returns – will have a natural hedge, experiencing fewer redemptions in market downturns and fewer inflows in upturns.

Thus, investor "decoupling" is a source of competitive advantage and allows fund managers to deliver better performance.[4] Decoupling, by reducing the need to sell when the value of the assets is low, will also allow funds not to turn paper losses in actual losses. This will have a positive impact on fund performance. The effect should be stronger in the presence of market-wide downturns (e.g., financial crisis). In addition, given that decoupling reduces the negative implications for fund withdrawals, we expect that it will reduce flow-performance sensitivity

[4] Of course, this argument relies on fund managers not capturing all of the surplus it in the form of extra fund fees.

especially when performance is poor. We call this the “decoupling hypothesis”.

The alternative hypothesis is that investor-stock distance is a source of competitive disadvantage. One reason is that proximity allows investors to better monitor funds. Given mutual fund’s open-ended structure, investors can “vote with their feet” by either investing or withdrawing their capital. Del Guercio and Reuter (2014) find that direct-sold U.S. equity mutual funds tend to perform better than funds sold through brokers because flows from the direct-sold segment are more sensitive to performance. Another reason is that distant investors, given their informational disadvantage, may behave more like “hot money” (e.g., Brennan and Cao, 1997) – i.e., they buy fund shares in periods when the fund return is high and sell when the return is low, regardless of the real ability of the manager. Under both of these arguments, investor-stock distance is a source of competitive disadvantage. In the context of our example, the fund’s investors will be better at monitoring the Fidelity Magellan fund than the Natixis Actions U.S. Value fund. Distance will hamper the ability of the fund managers to deliver better performance. This negative impact on fund performance will be stronger in the presence of market-wide downturns (e.g., financial crisis) when information is more valuable. In addition, we do not expect that investor-stock distance will affect flow-performance sensitivity. We call this the “information hypothesis”.

We test these hypotheses on the role of investor-stock distance using data on a large sample of equity mutual funds domiciled in 26 countries over the period from 1997 to 2010. The sample includes funds investing in domestic, foreign, regional, and global stocks and covers the large majority of actively managed funds worldwide. We have information on the countries in which each mutual fund is approved for sale which allows us to measure the geographical location of investors and whether the fund’s investors and the stocks it invests in are decoupled or co-located. The use of international data allows us to deal with several limitation of the data on domestic U.S. equity funds, which does not provide regional detail on the composition of

investor demand. In addition, the international data provides more power to our tests due to several reasons: the sample includes international equity funds that do cross-border investment; international stock markets are less correlated than U.S. domestic markets because they are less integrated; heterogeneity in wealth exposure across investors; and significant variation in flow-performance relationship across countries (Ferreira, Keswani, Miguel, and Ramos, 2012). In short, international data provide us with a unique experimental setting.[5]

The first simple measure of investor-stock decoupling is a dummy variable indicating whether the fund is being sold to investors outside the country in which the fund invests (*IS Dummy*). The main measure in our tests is based on the (negative of the) correlation between aggregate equity fund flows in the countries where the fund is sold and the returns of the stock markets the fund invests in (*ISD*). This measure quantifies directly the "decoupling" or lack of contemporaneous correlation between investor flows and stock returns.

We start by estimating the flow-performance sensitivity following Sirri and Tufano (1998). In line with the decoupling hypothesis, we find a negative association between a fund's *ISD* and the slope of the flow-performance relationship. When we break down the sensitivity to levels of performance, we see that there is lower sensitivity of flows to bad performance (i.e., decoupled investors tolerate better losses) and a lower sensitivity of flows to good performance (i.e., decoupled investors do not chase winners as aggressively).

Next, we document a positive and significant association between fund *ISD* and fund performance. A one standard deviation increase in *ISD* is associated with a 17 basis points (per quarter) improvement in four-factor alpha. Moreover, we show that the positive impact on fund performance is stronger in periods of market stress. We provide evidence that decoupled funds

[5] We show that our main results are robust when we restrict our analysis to funds that invest in U.S. stocks as well as the opposite, i.e., when we exclude funds that are registered for sale in the U.S. or funds that are domiciled in the U.S.

have a competitive advantage especially when the market return is weak, when market volatility spikes, and during the 2007-2008 financial crisis. To further examine the assets fires sale channel, we use data on fund portfolio holdings and find that decoupled funds have better performance following periods of general selling of equity positions during the 2007-2008 financial crisis. This indicates that decoupled funds seize investment opportunities when other funds engage in distressed selling of equity positions in the market.

One potential concern with our findings is that our proxy of fund *ISD* may be related to other factors affecting a fund manager's behavior such as information asymmetry, investor clients, stock market conditions, and regulatory environment. We control for the distance between the location of the fund manager and the location of the assets (fund-stock physical distance), as well as the distance between investors and the location of the assets (investor-stock physical distance) and include domicile and country-of-sale fixed effects that control for unobserved sources of time-invariant heterogeneity (e.g., the regulatory environment). We further construct proxies of behavioral/cultural distance between investors and investment portfolios in terms of time zone, language, and culture since investors may overweight stocks with which they are more familiar. Results are robust and suggest that *ISD* enhances fund performance irrespective of the information channel and taking into account investor behavioral biases.

Finally, we examine whether fund *ISD* affects fund manager's investment decisions. When *ISD* is high, fund managers have more leeway to pursue their investment objectives if they need to deal less with investor flows at inopportune times. Given that decoupling reduces the liquidity needs, the fund can invest in more illiquid assets. This will make the fund deviate more from their benchmark. At the same time, the improved ability to generate performance accruing from the investment in more illiquid assets will reduce the need to load on the traditional sources of risk to deliver better performance. Indeed, while loading up on more illiquid assets exposes the fund to higher fire-sales risk and to more tail and skewness risk, portfolio returns could

experience a lower volatility due to the investment in more illiquid and therefore more stable assets in general. Consistent with this idea, we find a negative association between *ISD* and risk taking and also that fund managers with decoupled investors deviate more from their benchmarks using the Amihud and Goyenko (2013)'s *R-squared* measure. For a sample of funds for which we have detailed portfolio holdings, we perform additional tests and find that funds with high *ISD* invest more in small and illiquid stocks.

Our work contributes to two different strands of literature. First, our findings add to the literature on the importance of geography in portfolio management (Coval and Moskowitz, 1999, 2001) but, instead of analyzing fund manager location, we focus on investor location. Second, we add to the literature on mutual fund performance and the importance of investor flows. Edelen (1999) shows the negative effects of flow-induced trading but stops short of exploring mutual fund's investors location. Coval and Stafford (2007) find asset fire sales (and purchases) in mutual funds that experience large outflows (inflows), which tend to decrease (increase) existing positions, thereby creating negative (positive) stock price pressure. Sialm, Starks, and Zhang (2012) show that flows of defined contribution plans into mutual funds exhibit higher flow-performance sensitivity (i.e., are less "sticky") and can better discern future performance than other fund flows. Mutual funds flows directly affect the prices of the assets held by the funds (e.g., Frazzini and Lamont, 2008; Lou, 2012), as well as trigger strategic behavior by other fund managers holding similar assets (Chen, Goldstein, and Jiang, 2010). We contribute to this literature by showing that the geographical location of the fund flows and their correlation to fund performance play an important role.

2. Data and Variable Construction

Our data on equity mutual funds are from the Lipper database for the 1997-2010 period. The database is survivorship bias-free, as it includes data on both live and defunct funds. Lipper lists

multiple share classes as separate funds. We therefore calculate fund-level variables by aggregating across the different share classes and eliminate multiple share classes of the same fund. The initial sample includes 47,961 unique equity funds (both active and defunct funds).

We compare the coverage of the funds in our sample to the statistics on open-end mutual funds compiled by the Investment Company Institute (ICI) from fund associations in 46 countries. The total numbers of equity funds reported by Lipper and ICI are, respectively, 26,861 and 27,754 as of December 2010. The total net assets of equity funds (sum of all share classes) worldwide reported by Lipper and ICI are, respectively, $9 trillion and $10.2 trillion as of December 2010. Thus, our sample of equity funds covers 88% of the total net assets of the worldwide equity funds.

We focus on open-end actively-managed equity mutual funds and exclude closed-end funds, index funds, exchange-traded funds, and funds-of-funds. We also drop offshore funds (e.g., funds domiciled in Luxembourg or Dublin) because the location of their investors is not well defined.[6] We include only funds domiciled in countries with more than ten funds. We require funds to have data on total net assets (TNA), age, total expense ratios, front- and back-end loads, and monthly total returns. We also require a fund to have at least 24 months of reported returns because we need to estimate factor loadings using past fund returns. The final sample includes 22,330 unique funds in 26 countries over the 1997-2010 period.[7]

Table 1 presents the number and TNA of the sample by domicile country at the end of our sample period. There are 14,366 equity mutual funds managing $5.9 trillion as of December 2010. The U.S. domiciled funds represent 65% of the sample in terms of TNA, but only 20% of the total number of funds.

The Lipper database provides information on a fund's country of domicile and geographic

[6] The main results of the paper are not affected if we include offshore funds.
[7] We obtain consistent results when we exclude small funds with TNA below $20 million from the analysis.

investment focus. We use this information to classify funds in terms of their geographic investment style: domestic funds (funds that invest in their own country), foreign country and regional funds (funds that invest in single countries or regions different from the one where they are located), and global funds. Domestic funds represent about half of the sample in terms of the number of funds and 60% in terms of TNA. The U.S. mutual fund industry is heavily tilted toward domestic funds and these have been the focus of prior literature. International funds, however, are dominant in other countries such as France, Germany, and the U.K.

2.1 Measuring investor-stock-decoupling

We use the information on which countries a fund is distributed in order to construct proxies for investor-stock decoupling. For each fund, Lipper provides the list of countries in which the fund is legally authorized to sell ("countries notified for sale"), as well as a list of the countries of the stocks in which the fund invests ("geographical focus"). We rely on the countries of sale and investment to calculate our measures of decoupling instead of using portfolio holdings data because holdings are available for a limited number of funds and time period. Additionally, holdings are endogenously chosen by a fund manager.[8]

The first and basic proxy of investor-stock decoupling is a dummy variable that takes the value of one if the fund is sold to investors that are not located in the same country as the stocks in which the fund invests (*IS Dummy*). Specifically, the *IS Dummy* takes the value of one if (1) a fund invests internationally and is sold only to investors in the fund's domicile country, (2) a fund invests domestically and is sold to investors located outside of that country, or (3) a fund invests internationally and is sold to investors located outside of a fund's country of investment.

Table A.1 in the Appendix shows the TNA by country of sale and country of investment. In the case of a fund with a single country of sale and country of investment, the total TNA is

[8] However, in untabulated results, we find consistent results when we use holdings-based measures of investor-stock decoupling.

allocated to a single cell in the matrix. In the case of a fund with multiple countries of sale (and multiple countries of investment), the fund's TNA is allocated to multiple cells in the matrix according to the market capitalization of each investment country. The TNA in the off-diagonal cells in the matrix illustrates the extent of investor-stock decoupling in our sample. As of December 2010, $2.3 trillion is managed by funds with "decoupled" investors versus $3.6 trillion managed by funds investing and sold domestically.

The second and main proxy of investor-stock decoupling captures how flows react to shocks to the stock markets in which the fund invests. It captures the sensitivity versus the stickiness of fund flows. More specifically, it consists of the negative of the correlation between the aggregate fund flows of funds in the countries where the fund is registered for sale and the stock market returns of the countries in which the fund invests.

To construct it, we proceed in several steps. We first aggregate fund flows for the countries in which a fund is selling its shares. We start by computing quarterly fund flows for all the equity funds in Lipper during the sample period. Fund flows are defined as the percentage growth in total assets under management (in local currency) of the fund between the beginning and the end of quarter *t*, net of internal growth (assuming reinvestment of dividends and distributions):

$$Flow_{i,t} = \frac{TNA_{i,t} - TNA_{i,t-1}\left(1 + R_{i,t}\right)}{TNA_{i,t-1}} \quad (1)$$

where $TNA_{i,t}$ is total net assets of fund i and $R_{i,t}$ is return on fund i. Then, for each country, we aggregate (TNA-weighted) the flows of all the funds selling in the country in the quarter. If a fund is sold in several countries, then we weight these aggregate flows per country by the market capitalization of each country in which the fund is sold.[9] This provides the aggregate investor

[9] We obtain consistent results if we use equal weights or weight the countries where a fund is sold by the population of the country or by its GDP.

flow behavior for a given fund.

The second step is to identify the countries of the stocks in which the fund invests and to take the quarterly return in the stock market of investment. The returns are denominated in U.S. dollars.[10] In the case of multiple countries or regions of investment, we weight the countries by their stock market capitalizations in U.S. dollars. Finally, the main measure of decoupling (*ISD*) is the contemporaneous correlation between the measure of aggregate fund flows where a fund is approved for sale and the average stock market return of the countries where the fund invests using a 12-quarter rolling window.

To illustrate the calculation, we take the example of the Fidelity Magellan fund (country of sale is U.S., country of investment is U.S.) and the Natixis Actions U.S. Value fund (countries of sale are France and U.K., country of investment is U.S.). In December 2010, the *ISD* measure for the Fidelity Magellan is the (negative of the) correlation between the aggregate flows into all U.S. equity funds in the last 12 quarters (2008:Q1-2010:Q4) and the value-weighted return of U.S. stocks over the same period. The correlation is 0.76, so the *ISD* measure for the Fidelity Magellan equals -0.76; for the Natixis Actions U.S. Value fund, the *ISD* measure is the (negative of the) correlation between the aggregate flows into both French and U.K. equity mutual funds (market capitalization weighted) in the last 12 quarters and the value-weighted return of U.S. stocks over the same period. The *ISD* measure for the Natixis Actions U.S. Value fund equals -0.56. The comparison of the two *ISD* proxies suggests that Fidelity's U.S. investors are more sensitive to shocks to the U.S. stock markets than Natixis' European (France and U.K.) investors.

In robustness checks, we will also use other investor measures to control for alternative hypotheses such as information asymmetry as in Coval and Moskowitz (1999, 2001). We control for the physical distance between the location of the fund (domicile country) and the location of

[10] We obtain consistent results when we use returns in U.S. dollars to estimate the *ISD* measure.

the assets in which it invests (*FS Physical Distance*) or the distance between the location of the investors and that of the assets in which the fund invests in (*IS Physical Distance*). The distance $d_{i,j}$ between fund or investor *i* and stock *j* in kilometers (kms) is given by:

$$d_{i,j} = arcos(deg_{latlon}) \frac{2\pi r}{360} \tag{2}$$

where:

$$deg_{latlon} = \cos(lat_i)cos(lon_i)\cos(lat_j)\cos(lon_j)$$
$$+ \cos(lat_i)sin(lon_i)\cos(lat_j)\sin(lon_j) + sin(lat_i)sin(lat_j)$$

and *lat* and *lon* are the latitude and longitude of the capital city of the country, and *r* is the radius of the earth.[11] We use the logarithm of one plus the fund-stock or investor-stock geographic distance as explanatory variable. For our example, the *FS Physical Distance* and *IS Physical Distance* measures both equal zero for the Fidelity Magellan and 6,194 kms (distance from Paris to Washington) and 6,028 kms (average distance from Paris and London to Washington) for the Natixis Actions U.S. Value fund.

We also control for how the returns of the stocks located close to the investors move with the returns of the stocks the fund manager tracks. We use the negative of the correlation between the (value-weighted) average stock market return of countries of sale and the average stock market return of countries of investment in U.S. dollars using 12-quarter rolling windows (*IS Return Distance*). For our example, the *IS Return Distance* measure is -1 (a perfect correlation) for the Fidelity Magellan fund but equals -0.43 for the Natixis Actions U.S. Value fund.

Finally, we control for investor behavioral biases. For example, "familiarity bias" by investors may induce the fund manager to tilt the portfolio allocation to cater to investors' allocation preferences. To address this issue, we construct four proxies of behavioral distance

[11] We conduct robustness checks where we measure *FS Physical Distance* using fund family location instead of fund domicile as a proxy for fund location.

between investors and investment portfolios. The first proxy is based on the time difference between countries of sale and countries of investment (*IS Time Distance*), which indicates whether investors follow those stocks during the same business hours and are more attentive. *IS Time Distance* is zero for the Fidelity Magellan and 5.4 hours for the Natixis Actions U.S. Value fund. The second proxy is based on whether the countries in which a fund sells its shares and the countries in which it invests have a different common official language (*IS Language Distance*), which can potentially make investors less familiar with those stocks. *IS Language Distance* is zero for the Fidelity Magellan and 0.38 for the Natixis Actions U.S. Value fund, which has both French and English speaking investors. The third proxy is based on the Hofstede index of individualism of the countries of sale and countries of investment (*IS Individualism Distance*), which is commonly used as a measure of cultural distance. *IS Individualism Distance* is zero for the Fidelity Magellan and 13.7 for the Natixis Actions U.S. Value fund. The final proxy measures whether the official currency is different for the country of sale and country of investment (*IS Currency Distance*). This captures whether investors are experiencing returns in the same unit of value as in the stock market of investment or if there are any foreign currency effects. *IS Currency Distance* is zero for the Fidelity Magellan and one for the Natixis Actions U.S. Value fund.

2.2 Measuring risk-adjusted performance

We consider three measures of fund performance. The first measure of fund performance is the benchmark-adjusted return. For each fund-quarter, the benchmark-adjusted return is the difference between the return of the fund and the return of the benchmark that Lipper assigns to the fund. Table 2 shows that the average benchmark-adjusted return for all active funds in our sample is -0.11% per quarter, in line with prior studies of mutual fund performance (e.g., Malkiel, 1995; Gruber, 1996).

The second and third fund performance measures adjust for the systematic risk component of the returns using both the one-factor market model and the four-factor Carhart (1997) model. We follow Bekaert, Hodrick, and Zhang (2009) and estimate the four-factor alphas using regional factors (Asia-Pacific, Europe, North America, and Emerging) based on the fund's investment region in the case of domestic country funds, foreign country funds and regional funds, or world factors in the case of global funds. For each fund-month, we estimate the monthly factor loadings by running the following regression:

$$R_{i,t} = \propto_i + \beta_{1,i} MKT_t + \beta_{2,i} SMB_t + \beta_{3,i} HML_t + \beta_{4,i} MOM_t + \varepsilon_{i,t}, \quad (3)$$

where $R_{i,t}$ is the return in U.S. dollars of fund i in excess of the one-month U.S. Treasury bill rate in month t; MKT_t is the excess return in U.S. dollars on the fund's investment region in month t; SMB_t (small minus big) is the average return on the small-capitalization portfolio minus the average return on the large-capitalization portfolio on the fund's investment region; HML_t (high minus low) is the difference in return between the portfolio with high book-to-market stocks and the portfolio with low book-to-market stocks on the fund's investment region; MOM_t(momentum) is the difference in return between the portfolio with the past 12-month winners and the portfolio with the past 12-month losers on the fund's investment region. The country-level factors *MKT*, *SMB*, *HML*, and *MOM* use individual stock returns in U.S. dollars obtained from Datastream, following the method of Fama and French (1992). The regional and world factors are value-weighted averages of countries' factors.[12]

We use monthly fund returns (net of expenses) denominated in U.S. dollars from January 1997 through December 2010 to estimate the factor loadings.[13] We estimate the time series regression equation (3) using the monthly fund excess returns and the risk factors using the

[12] See Ferreira, Keswani, Miguel, and Ramos (2013) for details about factor construction.
[13] We obtain consistent results when we use fund returns in local currency to estimate performance and risk measures.

previous 36 months of data (imposing a minimum of 24 months). Our unit of observation in all the tests is defined at the fund-quarter frequency.[14] We then measure a fund's risk-adjusted performance (or alpha) by subtracting the expected return from the realized fund return per quarter. Alpha measures the manager's contribution to performance.

2.3 Control variables and summary statistics

We use the following fund characteristics as control variables: fund size, fund family size, fund age, expense ratio, loads, and net inflows. In the regression tests, we also control for time fixed effects, fund domicile country fixed effects, investment region fixed effects (Africa, Asia-Pacific, Eastern Europe, Europe, Latin America, and North America), and fund type fixed effects (domestic, foreign, regional, and global).

Table 2 presents summary statistics of all the variables and Table A.2 in the Appendix provides variable definitions. Panel A of Table 3 reports the means for the variables of interest for funds whose investors and stocks holdings are co-located *(IS Dummy* equals zero) and funds whose investors and stock holdings are decoupled (*IS Dummy* equals one). Panel B reports similar statistics for funds in the bottom versus the top half of the *ISD* distribution.

Given that these fund characteristics are highly auto-correlated and the composition of funds does not change much over time, the standard errors are adjusted using the Newey-West correction with four lags. We see that decoupled funds are smaller and affiliated with smaller fund families, and have a higher total expense ratio and loads than co-located funds.

3. Flow-Performance Relationship

We start by testing whether investor-stock decoupling (*ISD*) reduces the sensitivity of fund flows to performance. Mutual funds that market their shares to investors from countries whose

[14] Given that the factor model estimation requires 36 months of data, the first observation in the tests is 2000:Q1.

aggregate flows are less correlated with a fund's investment stock market should experience more sticky flows. In other words, we expect funds with high *ISD* to experience less investor outflows when a fund is underperforming and that inflows should react less to good fund returns.

To test this hypothesis, we estimate the flow-performance relationship by regressing quarterly fund flows on the fund's performance rank at the end of the previous quarter. In each quarter, country, and investment region, we assign funds a performance rank ranging from zero (poorest performance) to one (best performance) on the basis of its performance in the prior three years as measured by raw returns.[15] We use both a linear regression and a piecewise-linear specification, which allows for different flow-performance sensitivities at different levels of performance (e.g., Sirri and Tufano, 1998). The slopes are estimated separately using a two-piece specification for the bottom half, *Low Rank* = min(0.5,*Rank*), and top half, *High Rank* = *Rank* – *Low Rank,* of the performance ranks. The coefficients on these piecewise decompositions of fractional ranks represent the marginal fund-flow response to performance.

We estimate panel regressions of quarterly fund flows on the piecewise past performance interacted with *ISD*, as well as on a set of control variables as defined above. The regressions also include the contemporaneous average growth rate of flows into funds with the same investment style (i.e., geographical focus) as a control (*Flow Category*) following Sirri and Tufano (1998). All the explanatory variables are lagged one quarter. To test whether the sensitivity of flows to past performance is statistically different for funds with high and low levels of *ISD*, we interact *Low Rank* and *High Rank* with two dummy variables that proxy for *ISD*. The first one is the *IS Dummy* variable, which equals one if the countries of sale differ from the countries of investment, and zero otherwise. The second variable is the *High ISD* dummy, which equals one if a fund is above the median in terms of *ISD* in each quarter. All the

[15] Results are robust when we use four-factor alphas and prior year returns to construct performance ranks.

regressions include time, domicile country, investment region, and fund type fixed effects. Standard errors are clustered at the fund level to account for autocorrelation in fund flows.

The results are reported in Table 4. The baseline specification shows that funds with a lower performance ranking attract fewer inflows. However, this effect is attenuated in the case of funds with decoupled investors, as shown by the negative and significant coefficient on the performance *Rank* × *IS Dummy* interaction variable in column (1) using the linear specification. For the case of decoupled funds, high performance attracts lower inflows and low performance induces less outflows.

We find similar results when we classify funds using *ISD*, our main variable of investor-stock sensitivity. Column (2) shows that investor flows chase less winners and dump less losers for higher levels of *ISD*. If we break down the sensitivity to different levels of relative performance using a piecewise-linear specifications in column (3) we see that the effect occurs for all the different performance ranks. The results are stronger for the bottom half of the performance rankings.[16]

These results are based on a sample that includes funds that invest in a diverse set of countries. The regressions include domicile, fund type, and investment fixed effects which control for unobserved time-invariant heterogeneity. An additional source of variation is that some funds are registered for sale in multiple countries, which may have different regulatory environments and investor clienteles. Column (4) shows the results using the individual share class offered for sale in a given country and quarter as a unit of observation.[17] The regression includes country-of-sale fixed effects that control for unobserved sources of time-invariant

[16] Table IA.1 in the Internet Appendix shows qualitatively similar findings when we use *ISD* as a continuous variable in the flow-performance relationship tests.

[17] This set up takes into account that a fund can be offered for sale in multiple countries (Khorana, Servaes, and Tufano, 2009). A fund with two share classes, each offered for sale in three countries, will have six different observations per quarter in this sample. In this test, the unit of observation is a fund class *i* domiciled in country *j* and offered for sale in country *k*.

heterogeneity at the country of sale. These results are consistent with our main tests by fund domicile and suffer less from omitted factors that pertain to just the regulatory market where the fund happens to be domiciled.

Finally, we also estimate a specification based on the flows at the level of the country of sale and investment region (Asia-Pacific, Europe, North America, Emerging and Global) rather than just country of sale. It is not feasible to do this analysis by investment country because is too granular and many cases it is almost the same as the individual fund flow, which raises endogeneity concerns. We re-estimate the *ISD* measure using this alternative measure of country of sale-by-investment region, which recognizes that flows within a country may behave differently according to the fund's investment style. The results are reported in Table IA.2 in the Internet Appendix are consistent with the main results.

In short, we find that investors in decoupled funds dump less losers and to some extent also chase less winners than investors in non-decoupled funds.

4. Fund Performance

We now look at whether fund investor-stock decoupling (*ISD*) is a source of strategic advantage for fund performance. We regress the fund's abnormal performance on fund *ISD* and a set of fund-level control variables. We estimate the specification using alternative definition of performance as well as both the *IS Dummy* and the *ISD* proxies. Given that all the results agree, in the interest of brevity, Table 5 presents the results using four-factor alphas as performance metric. All the explanatory variables are lagged one quarter. The regressions include time, domicile country, investment region, and fund type fixed effects. Standard errors are clustered at the fund level to account for autocorrelation in fund performance.

Column (1) in Table 5 shows a positive association between the *IS Dummy* and abnormal fund performance, indicating that funds with decoupled investors tend to produce higher risk-

adjusted returns. Column (2) shows that the *ISD* coefficient is positive. The effect is also economically significant: a one standard deviation increase in decoupling is associated with a 17 basis points (per quarter) higher four-factor alpha using the estimate in column (2). The coefficients of the other fund characteristics are in line with previous studies using a worldwide sample of mutual funds (e.g., Ferreira, Keswani, Miguel, and Ramos, 2013). Fund size and family size are positively related to performance. Fund age is negatively related to performance, while expenses and past performance are positively related to performance.

The positive effect of fund *ISD* on fund abnormal returns holds across different specifications in which we control for alternative effects stemming from investor-stock separation. Column (3) in Table 5 shows that the results on fund *ISD* are robust to proxies for information asymmetries due to investor-stock physical distance. Column (4) controls for the correlation of stock returns located close to the investor with the stock returns that the fund manager tracks. This shows that there is an *ISD* effect after we account for the possibility that distant investors may invest in funds with low correlation with their domestic market. Columns (5)-(8) show that the results on fund *ISD* are not affected when we control for investor behavioral biases such as different time zone, language and culture or whether investors experience gains and losses in a different currency. Column (9) shows that the results on fund *ISD* are robust to controlling for proxies for information asymmetries due to fund-stock distance (i.e., *FS Physical Distance*), as in Coval and Moskowitz (2001). Column (10) shows that *ISD* remains positive and statistically significant when we include all measures of distance simultaneously as control variables.

Finally, column (11) shows that the results also hold when the unit of observation is a fund primary class for each country of sale. These tests suffer less from omitted factors that pertain to just the regulatory market where the fund happens to be domiciled. Overall, it seems that the more the fund is isolated from its investors, the better is its performance on average.

One potential concern with our findings is that wealth shocks across countries are highly

correlated. We therefore estimate new specifications based on the difference between *ISD* (i.e., the negative of the correlation between aggregate equity fund flows in the countries where the fund is sold and the returns of the stock markets the fund invests in), and *IS Return Distance* (i.e., the negative of the correlation between the stock market return of the countries of sale and the stock market return in the countries where the fund invests). Table IA.3 in the Internet Appendix shows the effect of *ISD* remains statistically and economically significant when we this alternative definition of decoupling.

Table IA.4 in the Internet Appendix reports the fund performance results using the *ISD* measure based on the flows detailed at the level of the country of sale and fund's investment region, rather than just country of sale. The results are consistent with those in Table 5.

We next examine whether the competitive advantage provided by the fund *ISD* is stronger during periods of market distress. These are periods in which funds with decoupled investors may experience fewer outflows and fund managers are in a better position to take advantage of asset fire sales opportunities. To test this, we interact *ISD* with both a measure of market overall returns and the CBOE market volatility index (*VIX*). We also isolate periods of market turmoil by using two other variables: *Stress Dummy* takes the value of one when the *VIX* is above the 75th percentile of the distribution; *Crisis Dummy* that takes the value of one from the fourth quarter of 2007 through the end of 2008, and zero otherwise.

Table 6 reports the results. We find significant coefficients for the interaction variables. This further supports the hypothesis that mutual funds that decouple their investment and capital sourcing have a competitive advantage particularly in periods of market downturn, increased volatility, stress, and crisis. Focusing, for example, on the positive coefficient of *ISD* × *Crisis Dummy* in column (3) we find that decoupling is particularly helpful during the recent financial crisis. The positive and statistically significant coefficient on the *ISD* variable indicates that there is a positive effect on performance even outside of the financial crisis period. Interestingly, the

Crisis Dummy coefficient is negative and significant, suggesting that the difference in performance between crisis and non-crisis periods is negative at 29 basis points for funds with *ISD* equals zero. The average fund underperformed the benchmark by about 32 basis points during the crisis (at the averages of the data). In Table IA.5 in the Internet Appendix we verify that the difference in the behavior of decoupled funds during periods of market distress is the result of fund flows for *High ISD* funds being less sensitive to periods of market downturn, increased volatility, stress and crisis.

To further examine the assets fires sale channel, we conduct an additional test at the fund holdings level that focus on the 2007-2008 financial crisis. The fund portfolio holdings come from the FactSet/LionShares database.[18] We define *Holdings Decrease* (abs) as the absolute value of the sum of quarterly negative changes in fund ownership (as a percentage of market capitalization) across funds. As expected, fund equity sales peak in the financial crisis as we observe that *Holdings Decrease* (abs) at high levels during the quarters associated with the crisis period. We then test whether decoupled funds stand to benefit from these periods of general selling by mutual funds. The main explanatory variables is the *Holdings Decrease* (abs) variable separately calculated for *High ISD* funds (i.e., funds above the median) and *Low ISD* funds (i.e., funds below the median).

Table 7 shows the estimates of regressions of quarterly future stock returns. we find that the variable *Holdings Decrease* (abs) - *Low ISD* is positive and significant. This provides evidence that decoupled funds have better performance precisely following asset fire sales periods, because they can exploit these as investment opportunities. In contrast, the coefficient on the interaction variable *Holdings Decrease* (abs) - *High ISD* is negative and significant. This indicates that co-located stand to lose from periods of distressed market selling.

[18] For more details on the FactSet/LionShares database, see Ferreira and Matos (2008). For the data merge between Lipper and FactSet/LionShares, see Cremers, Ferreira, Matos, and Starks (2016).

5. Robustness

We perform a number of robustness checks on the main findings. A first potential issue is the role of geography and the location of the fund. To address this issue we proceed along four directions. First, we employ country-specific effects. Our results may be spuriously related to the fact that most of the funds experiencing better performance are located in the same geographic area (e.g., European funds). These funds may share some common rules and regulations. For example, rules that allow them to go short and take on more risk, as well as common investment values and trading views that will induce a spurious correlation. To control for these effects, we estimate all the regressions including domicile, fund type, and investment region fixed effects, and in some specifications, we also include country-of-sale fixed effects. The regressions also include time fixed effects that control for any common time trend. To further address the concern of unobserved heterogeneity driving our findings, we estimate the flow-performance relationship regressions in column (3) of Table 4 using several subsamples.

Table 8 presents the results. Column (1) presents estimates for the sample of funds domiciled in the U.S., and column (2) presents estimates for the sample of funds domiciled outside of the U.S. Column (3) presents estimates for the sample of funds investing in stocks based in the U.S., and column (4) presents estimates for the sample of funds investing in non-U.S. stocks. This alleviates concerns that certain types of markets or funds may be driving our main results. Columns (5) and (6) present estimates separately for the sample of domestic funds and international funds, respectively. We find that the decoupled funds show lower sensitivity to poor performance across both types of funds but decoupled funds only exhibit lower sensitivity to good performance in domestic funds. These findings suggest that *ISD* is relevant for both types of funds and our investor-stock decoupling analysis is distinct from the one based on just using a simple "international" dummy indicator. Column (7) presents estimates for the 2000-

2005 period and column (8) presents estimates for the 2006-2010 period. The results are consistent with those in Table 4 across all these sub-samples and alleviates concerns that certain types of markets or funds may be driving our main results. Decoupled funds show lower sensitivity to bad performance across all samples but decoupled funds do not have lower sensitivity to good performance in most samples. These results allow us to conclude that funds with a clientele located farther away from the stocks in which they invest exhibit more "sticky" flows, especially in the case of bad performance.

The fund domicile country fixed effects do not control for within-country cross-sectional variations that are related to regulatory environments. For example, a fund may impose liquidity restrictions on investors which prevent them from leaving and these same liquidity restrictions may differ across funds sold in different countries and even within the same country. For example, the Fidelity Magellan fund allows daily liquidity under the Investment Company Act of 1940 and the Natixis Actions U.S. Value fund is set up as an "Fond Commun de Placement" (FCP), like an UCIT with some liquidity restrictions. This creates a problem for the estimation in disentangling two potential hypotheses that may be driving the results: (1) the stickiness of investors is driven by a liquidity constraint imposed by the fund or regulation that imposes liquidity restrictions on investors to stay when the point of sale is outside the country; or (2) the stickiness of investors is driven by decoupling or the fact that investors have uncorrelated flows with the returns in the country. It is therefore important to assess whether *ISD* is somehow correlated with these different legal structures. To address this issue, we include legal structure dummies, which identify under which legal structure the fund is sold. This provides within-country variation that depends on differences in legal structures across various types of investment units. Column (10) presents the results that are consistent with those in Table 4.

Another issue is whether *ISD* proxies for a relation that has to do with a fund investing internationally or domestically and is not specific to the decoupling of a fund's investor base

from its investments. We address this issue along several dimensions. First, we estimate our main specifications including fund type fixed effects, which controls for the geography of the fund (domestic, foreign, regional, and global). In addition, Table IA.6 in the Internet Appendix shows that estimates are similar to those in Table 4 when we include the *International Dummy* as a control. We find that our proxies of investor-stock decoupling (*IS Dummy* and *ISD*) still explain differences in the flow-performance relation and in performance after the inclusion of the *International Dummy* variable. Second, we estimate the flow-performance relationship including the interaction variable *International Dummy* × *Rank* as an additional explanatory variable. Table IA.7 in the Internet Appendix reports the results. The results show that adding this interaction along with the *Rank* × *High ISD* interaction does not affect the decoupling effect on the flow-performance relationship. However, the results for the *IS Dummy* are not robust since this dummy variable of investor-stock decoupling overlaps in large part with the *International Dummy*.[19]

We also estimate the performance regressions in column (2) of Table 5 using sub-samples to test the robustness of our main performance results. Columns (1)-(8) of Table 9 present these checks. The results are consistent with a positive and significant relation between fund performance and *ISD* for funds domiciled in the U.S. and outside of the U.S. and funds that invest in U.S. stocks and in non-U.S. stocks. The effect is more pronounced in the case of funds domiciled in the U.S. Interestingly, the effects of *ISD* on performance is stronger in the sample of domestic funds than in the sample of international funds. The data seems to suggest that funds that are focused solely on the domestic market benefit the most from "decoupling" investors

[19] The reason why the *IS Dummy* overlaps with the *International Dummy* is that, as explained in Section 2.1, the *IS Dummy* takes the value if (1) an international fund is sold only domestically, (2) a domestic fund is sold to foreign investors or (3) an international fund is sold to foreign investors. Thus, the *IS Dummy* and the *International Dummy* are equal to one in two out of the three possible cases, which makes these two variables highly correlated. The same problem does not affect our main explanatory variable (*ISD*) as domestic and foreign investor flows could react differently to return shocks in the international stock markets in which the fund invests (i.e., cases (1) and (3) are distinguishable).

from securities, while international funds already diversify their investment across markets and may be less subject to the price fire sales risks of co-locating investors and investments. This is one instance where the effects of "decoupling" are weakened. We confirm that decoupled funds benefit more at the time of market distress. Indeed, the effect is also the second-half of the sample period from 2006 to 2010, which includes the 2007-2009 global financial crisis. Columns (9)-(11) show that our results are robust when we use alternative performance metrics. Four-factor alphas estimated across several stock markets may be noisy, so we examine benchmark-adjusted returns, one-factor alphas and information ratios.[20]

Next, in order to control for within-country cross-sectional variations that are related to regulatory environments, we control for the fund's legal structure as in Table 9. Column (12) reports the results. The effect of decoupling remains statistically and economically significant.

We also estimate the quarterly risk-adjusted fund performance regressions including the *International Dummy*. Table IA.8 in the Internet Appendix shows that estimates are similar to those in Table 5 when we include the *International Dummy* as a control. The *IS Dummy* coefficient is positive and statistically significant at the 10% level (due to the overlap with the *International Dummy* as explained above), while the *ISD* coefficient remains positive and statistically significant at the 1% level.

We conduct other robustness checks that we do not tabulate, in the interest of brevity. First, we address that time series and cross-sectional dependence is a potential concern for our panel regression results. Therefore, we implement a Fama-MacBeth (1973) procedure that estimates a separate regression for each cross-section in each quarter, and then take the time series mean of the coefficients. Another possible confounding effect may be related to the fund family behavior because fund families may pursue centralized strategies (Gaspar, Massa, and Matos, 2006) and

[20] One standard deviation in *ISD* translates into a 7 and 18 basis points (per quarter) higher performance using the estimates in columns (9) and (10).

some funds within the same family may help to buffer the price impact of a block sale in case a fund experiences unusual outflows. To control for these effects, we re-estimate our main specifications by clustering the errors at the family level.

Overall, these results are consistent with a positive and significant relation between fund performance and fund decoupling

6. Fund Strategies and Limits to Arbitrage

In this section, we investigate the link between investor-stock decoupling and fund manager actions and strategies. Our main hypothesis posits that fund managers have more leeway to pursue their investment objectives if they do not need to deal with investor flows at inconvenient times. We examine three specific implications of this hypothesis.

First, we expect that fund managers with decoupled investors need to load less on market factors. We examine whether fund risk-taking behavior is related to its *ISD*. We estimate panel regressions with fund-quarter observations of the total risk of the fund, as well as its systematic and idiosyncratic risk components. Total risk is defined as the standard deviation of the fund returns in the prior 36 months. The systematic component of risk is the loading on the market factor. The idiosyncratic component of risk is given by the fund return residual standard deviation (tracking error).[21] In the interest of brevity, we present only the results based on the measures of systematic and idiosyncratic risk estimated using the four-factor model. The results are reported in Table 10 for total risk (columns (1) and (2)), systematic risk (column (3)) and tracking error (column (4)). We find a negative and significant association between *ISD* and risk taking as proxied by total risk in column (1). The result is consistent when the unit of observation is a fund primary class for each country of sale (column (2)). In untabulated results, we find that

[21] We obtain similar results also when we use the standard deviation of the difference between a fund's return and its benchmark as measure of tracking error. This is the more commonly used tracking error measure in the industry.

the decoupling is associated with less risk taking in both the samples of non-U.S. and U.S. domiciled funds.[22] We also find a negative and significant effect of *ISD* on systematic risk and tracking error. Because both idiosyncratic bets and total risk are negatively associated with fund *ISD*, we cannot conclude whether funds diverge relatively more or less from the benchmark.

To investigate further whether funds with decoupled investors adopt more active trading strategies we follow Amihud and Goyenko (2013) and focus on the fund's *R-squared* from the regression of a fund's returns on the four-factor alpha portfolio returns. The higher the *R-squared*, the closer a fund mimics its benchmark portfolio.[23] Column (5) of Table 10 reports the regression results of the fund's *R-squared* on *ISD* and the fund-level control variables. We find a negative association between *R-squared* and *ISD*. This suggests that investor-stock decoupling facilitates active management by mutual funds. Fund managers with decoupled investors diverge more from their benchmarks.

Second, we expect funds with higher *ISD* to be able to invest more in illiquid assets because the fund manager expects fewer investor outflows when the portfolio's holdings are depressed. We consider two alternative measures of liquidity based on portfolio holdings drawn from the FactSet/LionShares database.[24] The first measure is whether funds hold smaller stocks based on the value-weighted average firm size according to the portfolio's stock holdings. The portfolio size is defined as the logarithm of the average market capitalization (in millions of U.S. dollars) of the stock holdings (*Portfolio Firm Size*). The second measure of portfolio liquidity is the value-weighted average of the Amihud (2002) illiquidity ratio according to the stock holdings (*Portfolio Illiquidity*). Columns (6) and (7) of Table 10 report the results of the two liquidity

[22] In the total risk regressions, the *ISD* coefficient is negative and significant at -0.3587 in the sample of non-U.S. funds, and also negative and significant at -0.6450 in the sample of U.S. funds.

[23] There are other measures of active management. For example, Kacperczyk, Sialm, and Zheng (2005) exploit the degree of concentration of the fund holdings in a specific industry. Cremers and Petajisto (2009) create a measure of "active share" based on the share of portfolio holdings that differ from the fund's benchmark index holdings. All these measures are appealing, but as they are holding-based, they significantly reduce our sample size.

[24] Due to data limitations on portfolio holdings, these tests are run only for about two-thirds of the main sample.

measures. We find a negative and significant relation between *Portfolio Firm Size* and *ISD* and a positive and significant relation between average *Portfolio Illiquidity* and *ISD*. These results support our hypothesis that less performance-sensitive flows from decoupled investors allow fund managers to invest in illiquid stocks.

Finally, we expect funds with higher fund *ISD* to engage less in short-term tournaments that may sacrifice long-run performance. Brown, Harlow, and Starks (1996) find that the convexity of the flow-performance relationship may induce fund managers to increase their risk at mid-year in an attempt to improve their performance rank and capture investor inflows at year-end. However, if funds have investors that are less performance-sensitive, fund managers will face less this short-term pressure to increase fund risk to catch up in the second-half of the year. Therefore, we expect funds with higher *ISD* to increase less their risk taking in the second half of the year if the fund's mid-year fund performance is poor. To test this idea, we regress the increase in risk in the second half of the calendar year on *ISD* and control variables. The dependent variable is the ratio of the annualized standard deviation of fund returns in the second semester (*S2*) to the annualized standard deviation of fund returns in the first semester (*S1*) at the annual frequency. The fractional performance rank (*Rank*) ranges from zero to one and is assigned according to the fund's average return in the first semester compared to other funds in the same domicile country and investment region. Column (8) of Table 10 shows the results. We find that the coefficient on the *Rank* × *ISD* interaction variable is positive and significant. This suggests that if the fund is doing poorly in the first half of the year, *ISD* reduces the fund manager's incentives to increase risk taking in the second half of the year. We conclude that decoupled funds face less pressure to take tournament-related risks.

We also estimate the fund strategies regressions in Table 10 including the *International Dummy*. Table IA.9 in the Internet Appendix shows that estimates are similar to those in Table 10 when we include the *International Dummy* as a control.

7. Conclusion

We argue that mutual fund behavior is affected by the behavior of investor flows from the markets in which the fund sells its shares. We show that the correlation between the shocks to the investor flows and the shocks to the stock returns in which the fund is investing affects fund performance. Funds characterized by a higher investor-stock decoupling experience a competitive advantage, in particular during periods of asset fire sales and purchases when other local fund managers are divesting (prices are low) and selling when other local players are investing (prices are high). We find that the higher the degree of decoupling, the more a fund is shielded from withdrawals during bad times, allowing the fund manager to engage in more active management, invest in more illiquid assets and deliver higher performance.

Our results support the importance of limits to arbitrage and the behavior of investor flows in delegated portfolio management. Investor segmentation is important and those funds with decoupled investors that are less performance-sensitive enjoy a competitive advantage. We conclude that diversifying funding sources internationally can have a positive impact on mutual fund performance.

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Table 1
Number and Size of Open-end Equity Mutual Funds by Domicile

This table presents number of funds and total net assets (sum of all share classes in millions of U.S. dollars) of the sample of funds by country where the funds are legally domiciled at the end of 2010. The sample includes open-end active equity funds drawn from the Lipper database in the 1997-2010 period. Funds are classified as domestic if the geographical focus of investment is equal to the fund domicile country.

Country	All Funds		Domestic Funds		International Funds	
	Number of Funds	TNA ($ million)	Number of Funds	TNA ($ million)	Number of Funds	TNA ($ million)
Australia	2,267	190,759	1,261	106,765	1,006	83,994
Austria	171	14,749	13	1,430	158	13,318
Belgium	544	29,061	20	1,547	524	27,514
Canada	1,386	331,227	550	200,745	836	130,482
Denmark	219	32,040	25	3,232	194	28,808
Finland	181	27,929	31	5,616	150	22,312
France	1,066	204,211	215	42,649	851	161,563
Germany	322	120,648	48	34,727	274	85,921
India	253	39,123	251	39,093	2	30
Ireland	526	162,456	1	5	525	162,451
Italy	147	33,036	32	4,530	115	28,506
Japan	836	78,037	490	36,101	346	41,936
Korea (South)	578	41,965	377	24,374	201	17,591
Malaysia	253	15,066	160	10,805	93	4,261
Netherlands	102	35,294	22	6,035	80	29,260
Norway	155	41,847	58	15,746	97	26,101
Poland	75	7,893	47	6,788	28	1,105
Portugal	67	2,482	19	520	48	1,962
Singapore	217	20,710	17	2,255	200	18,454
Spain	277	13,578	71	2,447	206	11,131
Sweden	259	112,127	108	63,479	151	48,648
Switzerland	268	50,487	85	22,229	183	28,257
Taiwan	260	18,661	161	10,787	99	7,874
Thailand	201	6,861	163	6,386	38	475
U.K.	938	447,790	373	204,532	565	243,258
U.S.	2,798	3,866,531	2,055	2,644,365	743	1,222,167
Total	14,366	5,944,568	6,653	3,497,190	7,713	2,447,378

Table 2
Summary Statistics

This table reports mean, median, standard deviation, minimum, maximum and number of observations of the variables. The sample includes open-end active equity funds drawn from the Lipper database in the 1997-2010 period. See Table A.2 in the Appendix for variable definitions.

	Mean	Median	Std. Dev.	Minimum	Maximum	Observations
IS Dummy	0.538	1.000	0.499	0.000	1.000	395,413
ISD	-0.289	-0.376	0.393	-0.926	0.918	395,413
IS Physical Distance	4.332	6.401	4.163	0.000	9.779	395,413
FS Physical Distance	4.210	6.229	4.203	0.000	9.779	395,413
IS Return Distance	-0.914	-0.988	0.138	-1.000	0.127	395,413
IS Time Distance	2.268	0.000	3.179	0.000	16.000	395,413
IS Language Distance	0.358	0.000	0.402	0.000	1.000	395,413
IS Individualism Distance	8.610	1.000	10.562	0.000	91.000	395,413
IS Currency Distance	0.423	0.000	0.456	0.000	1.000	395,413
TNA ($ millions)	439	57	2,574	0.010	195,807	393,766
Family TNA ($ millions)	18,364	3,269	67,821	0.010	840,057	394,676
Age (years)	10.278	7.833	8.644	0.500	86.583	395,413
Expense Ratio (% year)	1.627	1.560	0.693	0.000	4.080	393,721
Total Load	2.971	3.000	2.553	0.000	10.966	393,766
Flow (% quarter)	-0.150	-1.624	16.594	-49.486	136.561	390,160
Return (% quarter)	2.366	2.659	12.435	-33.092	38.109	395,413
Four-Factor Alpha (% quarter)	-0.185	-0.543	5.791	-20.228	24.722	395,413
Benchmark-Adjusted Return (% quarter)	-0.111	-0.219	3.985	-16.925	17.825	386,505
One-Factor Alpha (% quarter)	-0.217	-0.569	5.567	-19.888	23.158	395,413
Information Ratio	-0.144	-0.168	1.212	-6.493	5.963	395,413
Total Risk (% quarter)	10.061	9.295	4.211	3.769	26.622	395,413
Systematic Risk	1.027	1.021	0.268	0.135	1.874	395,413
Tracking Error (% quarter)	4.422	3.671	2.734	0.906	18.754	395,413
R-squared	0.795	0.852	0.173	0.008	0.999	395,413
Portfolio firm size	9.993	10.506	1.396	5.754	11.772	253,266
Portfolio illiquidity	0.052	0.004	0.178	0.000	1.526	253,251
S1	19.020	17.561	10.138	0.000	74.357	77,041
S2	18.278	15.515	10.209	0.000	81.200	76,541
S1/S2	1.146	1.008	0.731	0.000	24.531	76,540

Table 3
Time Series Averages by Investor-Stock Decoupling

This table reports average fund characteristics by group of funds. Panel A divides the sample using the investor-stock dummy variable (*IS* dummy), which equals one if the countries where a fund is sold are different from the countries where the fund invests. Panel B divides the sample into halves based on the median *ISD*. *ISD* is the negative of the value-weighted average correlation between flows of the countries of sale and the stock market return of the countries where the fund invests (weights based on stock market capitalization). Portfolios are rebalanced quarterly. The sample includes open-end active equity funds drawn from the Lipper database in the 1997-2010 period. See Table A.2 in the Appendix for variable definitions. Newey-West *t*-statistics with a four-quarter lag correction are in parentheses.

Panel A: Average Fund Characteristics by *IS* Dummy			
	IS Dummy = 0	*IS Dummy* = 1	High-Low
Number of Funds	4,662	5,435	
TNA - Total ($ billions)	2,543	1,892	
TNA ($ millions)	572.1	355.0	-217.2
	(14.76)	(15.41)	(-7.73)
Family TNA ($ millions)	24319.0	14077.6	-10241.5
	(19.31)	(16.06)	(-16.19)
Age (years)	10.8	9.73	-1.06
	(116.03)	(88.40)	(-16.64)
Expense Ratio (% year)	1.55	1.67	0.11
	(107.67)	(81.46)	(7.17)
Total Load	2.36	3.41	1.05
	(27.78)	(81.72)	(16.71)
Flow (% quarter)	-0.098	0.26	0.35
	(-0.37)	(0.61)	(0.98)
Panel B: Average Fund Characteristics by *ISD*			
	Low *ISD*	High *ISD*	High-Low
Number of Funds	5,249	4,847	
TNA - Total ($ billions)	3,329	1,106	
ISD	-0.56	0.01	0.57
	(-12.63)	(0.21)	(12.63)
TNA ($ millions)	657.1	243.6	-413.4
	(15.94)	(5.84)	(-6.54)
Family TNA ($ millions)	26742.8	10757.3	-15985.5
	(19.92)	(4.87)	(-5.37)
Age (years)	10.7	9.72	-0.94
	(78.52)	(41.78)	(-2.90)
Expense Ratio (% year)	1.57	1.66	0.092
	(57.60)	(88.57)	(2.65)
Total Load	2.60	3.25	0.65
	(16.85)	(35.19)	(2.91)
Flow (% quarter)	0.54	-0.41	-0.94
	(1.40)	(-1.37)	(-2.79)

Table 4
Flow-Performance Relationship and Investor-Stock Decoupling

This table reports regressions of quarterly fund flows. In each quarter, a rank is assigned to each fund based on past twelve quarters return relative to funds in the same domicile and investment region. In columns (2) and (4), the piecewise-linear segments are *Low Rank* = min(0.5, *Rank*) and *High Rank* = *Rank* – *Low Rank*. *High ISD* equals one if a fund is above the median in terms of *ISD* in each quarter. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. In column (4) the unit of observation is a fund primary share class offered for sale in a given country. See Table A.2 for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)
Rank × *IS Dummy*	-1.7029			
	(-5.56)			
Rank × *High ISD*		-2.6568		
		(-9.57)		
Low Rank × *High ISD*			-3.2532	-2.8642
			(-5.76)	(-2.54)
High Rank × *High ISD*			-2.0969	-0.4656
			(-3.39)	(-0.40)
Rank	6.2477	6.4689		
	(27.58)	(31.43)		
Low Rank			5.9752	6.4555
			(15.16)	(7.86)
High Rank			6.9352	7.1771
			(15.53)	(7.82)
IS Dummy	1.2162			
	(4.99)			
High ISD		1.3713	1.5227	0.7723
		(8.39)	(7.49)	(1.93)
Flow Category	0.4736	0.4739	0.4739	0.5232
	(23.41)	(23.40)	(23.40)	(12.81)
TNA (log)	-0.3700	-0.3662	-0.3645	-0.5381
	(-10.43)	(-10.36)	(-10.32)	(-7.36)
Family TNA (log)	0.1041	0.1100	0.1100	0.2547
	(3.89)	(4.13)	(4.13)	(5.92)
Age (log)	-0.3976	-0.4062	-0.4046	-0.1682
	(-4.81)	(-4.92)	(-4.90)	(-0.97)
Expense Ratio	-0.2199	-0.2222	-0.2365	0.0017
	(-2.50)	(-2.53)	(-2.69)	(0.01)
Total Load	-0.0539	-0.0530	-0.0535	-0.0695
	(-2.46)	(-2.42)	(-2.44)	(-1.36)
Flow	0.1614	0.1610	0.1608	0.1457
	(20.89)	(20.83)	(20.82)	(12.51)
Domicile dummies	Yes	Yes	Yes	Yes
Country-of-sale dummies	No	No	No	Yes
Fund type dummies	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes
Observations	170,917	170,917	170,917	275,544
R-squared	0.067	0.067	0.067	0.065

Table 5
Performance and Investor-Stock Decoupling

This table reports panel regressions of quarterly risk-adjusted fund performance. The dependent variable is the alpha from the four-factor model. The factor model is estimated using monthly fund returns in U.S. dollars in the prior 36 months. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. In column (11) the unit of observation is a fund primary share class offered for sale in a given country. See Table A.2 in Appendix for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
IS Dummy	0.1891										
	(3.18)										
ISD		0.4377	0.4375	0.4411	0.4372	0.4436	0.4381	0.4347	0.4222	0.4354	0.3221
		(10.43)	(10.42)	(10.51)	(10.41)	(10.59)	(10.45)	(10.35)	(10.00)	(10.38)	(5.48)
IS Physical Distance			0.0442							0.0251	
			(4.03)							(1.82)	
IS Return Distance				0.9660						0.9199	
				(7.21)						(5.93)	
IS Time Distance					0.0115					-0.0190	
					(1.54)					(-1.12)	
IS Language Distance						0.1246				-0.1071	
						(1.67)				(-1.17)	
IS Individualism Distance							0.0090			0.0073	
							(3.24)			(2.22)	
IS Currency Distance								0.2875		0.1339	
								(4.38)		(1.61)	
FS Physical Distance									-0.0324	-0.0082	
									(-6.91)	(-0.15)	
TNA (log)	0.0216	0.0228	0.0217	0.0241	0.0233	0.0224	0.0219	0.0233	0.0279	0.0224	-0.0063
	(3.22)	(3.40)	(3.22)	(3.58)	(3.46)	(3.33)	(3.26)	(3.46)	(4.09)	(3.32)	(-0.57)
Family TNA (log)	0.0326	0.0349	0.0342	0.0351	0.0347	0.0346	0.0349	0.0342	0.0314	0.0350	0.0339
	(5.22)	(5.59)	(5.48)	(5.64)	(5.57)	(5.54)	(5.60)	(5.49)	(4.99)	(5.63)	(3.65)
Age (log)	-0.0939	-0.0908	-0.0951	-0.0945	-0.0929	-0.0902	-0.0885	-0.0947	-0.0973	-0.0933	-0.0766
	(-5.57)	(-5.38)	(-5.64)	(-5.60)	(-5.51)	(-5.34)	(-5.25)	(-5.61)	(-5.66)	(-5.53)	(-2.49)
Expense Ratio	0.0833	0.0865	0.0850	0.0840	0.0850	0.0854	0.0837	0.0839	0.0819	0.0834	0.0813
	(4.24)	(4.40)	(4.32)	(4.28)	(4.33)	(4.34)	(4.27)	(4.27)	(4.11)	(4.25)	(2.72)

Table 5 (continued)

Total Load	-0.0045	-0.0043	-0.0042	-0.0038	-0.0041	-0.0042	-0.0042	-0.0038	-0.0052	-0.0037	0.0073
	(-0.86)	(-0.82)	(-0.80)	(-0.73)	(-0.80)	(-0.81)	(-0.81)	(-0.74)	(-0.96)	(-0.72)	(0.68)
Flow	-0.0003	-0.0003	-0.0003	-0.0003	-0.0003	-0.0003	-0.0003	-0.0003	-0.0003	-0.0003	0.0002
	(-0.56)	(-0.51)	(-0.56)	(-0.59)	(-0.54)	(-0.50)	(-0.50)	(-0.52)	(-0.45)	(-0.55)	(0.19)
Return	0.0147	0.0145	0.0144	0.0142	0.0145	0.0144	0.0144	0.0144	0.0170	0.0142	0.0367
	(5.57)	(5.48)	(5.48)	(5.41)	(5.48)	(5.47)	(5.46)	(5.47)	(6.43)	(5.39)	(9.08)
Domicile dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-of-sale dummies	No	No	No	No	No	No	No	No	No	No	Yes
Fund type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	395,413	395,413	395,413	395,413	395,413	395,413	395,413	395,413	395,413	395,413	611,199
R-squared	0.056	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.054	0.057	0.052

Table 6
Performance and Investor-Stock Decoupling: The Effect of the Market Distress

This table reports panel regressions of quarterly risk-adjusted fund performance. The dependent variable is the alpha from the four-factor model. The factor models are estimated using monthly fund returns in U.S. dollars in the prior 36 months. *Market Return* is the fund's investment region return in U.S. dollars. *Crisis Dummy* takes the value of one in the period from the fourth quarter of 2007 through the end of 2008, and zero otherwise. *VIX* is the CBOE volatility index. *Stress Dummy* takes the value of one when the *VIX* is above the 75th percentile of the distribution. The regressions include the same control variables (coefficients not shown) as in Table 5. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. See Table A.2 in the Appendix for variable definitions. Robust *t*-statistics clustered by fund and time are in parentheses.

	(1)	(2)	(3)	(4)
ISD	0.2452	0.0995	1.1706	-0.0333
	(6.61)	(2.68)	(15.66)	(-0.88)
ISD × *Market Return*	-2.2712			
	(-4.41)			
ISD × *Crisis Dummy*		0.6783		
		(7.38)		
ISD × *VIX*			-0.0477	
			(-14.67)	
ISD × *Stress Dummy*				0.5499
				(8.38)
Market Return	0.3291			
	(1.21)			
Crisis Dummy		-0.2876		
		(-7.98)		
VIX			-0.0244	
			(-14.72)	
Stress Dummy				-0.2857
				(-8.15)
Domicile dummies	Yes	Yes	Yes	Yes
Fund type dummies	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes
Observations	395,413	395,413	395,413	395,413
R-squared	0.019	0.020	0.020	0.021

Table 7
Fire Sales and Investor-Stock Decoupling during the Financial Crisis

This table reports panel regressions of quarterly future stock returns. *Holdings Decrease* (abs) is the absolute value of the sum of quarterly negative changes in mutual fund ownership (as a percentage of market capitalization) across all funds. *Holdings* is the mutual fund ownership (as a percentage of market capitalization) across all funds. The sample of stocks includes all stocks in Worldscope with mutual fund holdings in the FactSet/LionShares database. The sample of funds includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database. The sample period is the crisis period defined from the fourth quarter of 2007 through the end of 2008. Regressions include year, industry and country dummies. See Table A.2 in the Appendix for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)
Holdings Decrease (abs) - *Low ISD*	0.2550		0.1990
	(3.24)		(2.43)
Holdings Decrease (abs) - *High ISD*		-0.2660	-0.3240
		(-2.53)	(-2.83)
Holdings - Low ISD	-0.0019		-0.0016
	(-1.75)		(-1.54)
Holdings - High ISD		-0.0059	-0.0051
		(-2.00)	(-1.29)
Book-to-Market (log)	0.0058	0.0059	0.0055
	(3.79)	(3.91)	(3.37)
Market Capitalization (log)	0.0065	0.0082	0.0073
	(6.32)	(7.75)	(6.38)
Volatility	-0.2430	-0.2100	-0.2770
	(-11.11)	(-9.48)	(-9.53)
Turnover	-0.0024	-0.0020	-0.0019
	(-2.95)	(-2.43)	(-2.11)
Stock Price (log)	-0.0020	-0.0029	-0.0029
	(-2.05)	(-2.97)	(-2.68)
MSCI Dummy	0.0085	0.0075	0.0061
	(3.06)	(2.63)	(2.07)
Momentum	0.0290	0.0241	0.0292
	(12.90)	(11.21)	(11.87)
Dividend Yield	0.1850	0.2020	0.1600
	(4.62)	(4.81)	(3.50)
ADR Dummy	0.0031	0.0050	0.0048
	(1.03)	(1.69)	(1.57)
Number of Analysts	-0.0053	-0.0052	-0.0040
	(-3.64)	(-3.48)	(-2.55)
Foreign Sales	-0.0124	-0.0144	-0.0149
	(-3.52)	(-4.11)	(-3.94)
Closely Held Shares	0.0106	0.0114	0.0094
	(2.44)	(2.57)	(1.98)
Industry dummies	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes
Observations	62,921	62,212	53,577
R-squared	0.168	0.164	0.167

Table 8
Flow-Performance Relationship and Investor-Stock Decoupling: Robustness

This table reports regressions of quarterly fund flows. In each quarter, a rank is assigned to each fund based on past twelve quarters return relative to funds in the same domicile and investment region. In columns (2) and (4), the piecewise-linear segments are *Low Rank* = min(0.5, *Rank*) and *High Rank* = *Rank* – *Low Rank*. *High ISD* equals one if a fund is above the median in terms of *ISD* in each quarter. The regressions include the same control variables (coefficients not shown) as in Table 4. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. See Table A.2 for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Domicile		Investment Region		Fund Type		Sample Period		Legal
	U.S.	Non-U.S.	U.S.	Non-U.S.	Domestic	International	2000-2005	2006-2010	Structure
Low Rank × *High ISD*	-2.6576	-1.3717	-2.2901	-2.6879	-3.5922	-2.6039	-4.5347	-2.7769	-3.1910
	(-2.03)	(-1.93)	(-1.90)	(-4.01)	(-4.72)	(-3.10)	(-2.39)	(-4.67)	(-5.66)
High Rank × *High ISD*	-1.9002	-0.0831	-3.1663	-0.3505	-3.0401	-0.4989	1.0846	-2.4105	-2.1634
	(-1.44)	(-0.11)	(-1.65)	(-0.50)	(-3.58)	(-0.56)	(0.54)	(-3.76)	(-3.49)
Low Rank	7.0129	3.7721	7.5723	5.0727	6.4002	5.4849	8.2490	5.3789	5.9981
	(13.17)	(6.79)	(12.41)	(10.08)	(12.32)	(9.11)	(8.99)	(12.66)	(15.22)
High Rank	8.8947	4.8142	10.1071	5.1913	8.7349	4.9480	6.1697	7.0512	6.9705
	(13.23)	(8.30)	(10.94)	(9.68)	(14.22)	(7.67)	(5.90)	(14.93)	(15.64)
High ISD	0.5464	0.4439	0.3889	1.0150	1.6752	1.0418	1.9167	1.3661	1.5508
	(1.01)	(1.74)	(0.79)	(4.23)	(5.95)	(3.52)	(2.21)	(6.43)	(7.65)
Domicile dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legal structure dummies	No	No	No	No	No	No	No	No	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	57,477	113,440	51,174	119,743	87,558	83,359	22,755	148,162	170,917
R-squared	0.105	0.056	0.074	0.068	0.083	0.059	0.101	0.063	0.069

Table 9
Performance and Investor-Stock Decoupling: Robustness

This table reports panel regressions of quarterly risk-adjusted fund performance. The dependent variable is the alpha from the four-factor model in columns (1)-(8), the benchmark-adjusted returns in column (9), the alpha from the one-factor model in column (10), and the information ratio from the four-factor model in column (11). The factor model is estimated using monthly fund returns in U.S. dollars in the prior 36 months. The regressions include the same control variables (coefficients not shown) as in Table 5. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. See Table A.2 in Appendix for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Domicile		Investment Region		Fund Type		Sample Period		Performance Metrics			
	U.S.	Non-U.S.	U.S.	Non-U.S.	Domestic	International	2000-2005	2006-2010	Bench.-Adj. Return	One-Factor Alpha	Information Ratio	Legal Structure
ISD	1.3450	0.3598	0.3118	0.3961	1.2476	0.0569	0.2041	0.3486	0.1819	0.4589	0.0423	0.4178
	(2.46)	(7.88)	(3.42)	(8.52)	(14.30)	(1.38)	(2.23)	(7.06)	(7.35)	(11.34)	(5.09)	(9.91)
Domicile dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legal structure dummies	No	No	No	No	No	No	No	No	No	No	No	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	103,938	291,475	98,438	296,975	194,106	201,307	135,178	260,235	386,173	395,413	395,413	395,413
R-squared	0.127	0.059	0.150	0.060	0.095	0.062	0.112	0.051	0.024	0.050	0.054	0.058

Table 10
Fund Strategy and Investor-Stock Decoupling

This table reports panel regressions of quarterly measures of fund risk. In column (1) the dependent variable is the standard deviation of fund returns in the prior 36 months estimated using monthly fund returns in U.S. dollars (*Total Risk*). In column (2) the dependent variable is the loading on the market factor from the four-factor model (*Systematic Risk*). In column (3) the dependent variable is the standard deviation of the residuals from the four-factor model (*Tracking Error*). In column (4) the dependent variable is the *R*-squared from the four-factor model at the quarterly frequency. In columns (5) and (6) the dependent variables are the value-weighted average market capitalization (*Portfolio Firm Size*) and Amihud illiquidity measure of portfolio stock holdings (*Portfolio Illiquidity*). In column (7) the dependent variable is the ratio of the annualized standard deviation of fund returns in the second semester (*S2*) to the annualized standard deviation of fund returns in the first semester (*S1*) at the annual frequency. The fractional performance ranks ranging from zero to one are assigned to funds according to their average return in the first semester by domicile and investment region (*Rank*). The regressions include the same control variables (coefficients not shown) as in Table 5. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. See Table A.2 in the Appendix for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Total Risk		*Systematic Risk*	*Tracking Error*	*R-squared*	*Portfolio Firm Size*	*Portfolio Illiquidity*	*S2/S1*
ISD	-0.3153	-0.1916	-0.0491	-0.0016	-0.0112	-0.0657	0.0101	0.0397
	(-9.94)	(-3.72)	(-15.53)	(-3.09)	(-5.44)	(-3.61)	(3.33)	(5.19)
Rank × *ISD*								0.0275
								(2.37)
Rank								-0.0844
								(-10.99)
S1								-0.0292
								(-81.95)
Domicile dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-of-sale dummies	No	Yes	No	No	No	No	No	No
Fund type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	395,413	611,699	395,413	385,860	395,413	253,266	253,251	76,540
R-squared	0.608	0.624	0.158	0.242	0.376	0.157	0.116	0.633

Appendix

Table A.1
TNA by Country of Sale and Country of Investment

This table presents the TNA (in millions of U.S. dollars) of funds offered by country of sale (rows) and country of investment (columns) for the sample of open-end actively-managed equity funds as of December 2010. In the case of a fund with a single country of sale and country of investment, the total TNA is allocated to a single cell in the matrix below. In the case of a fund with multiple country of sales (and multiple countries of investment), the fund's TNA is allocated to multiple cells in the matrix according to the market capitalization of each country.

	Country of Investment																										
Country of Sale	AT	AU	BE	CA	CH	DE	DK	ES	FI	FR	GB	IE	IN	IT	JP	KR	MY	NL	NO	PL	PT	SE	SG	TH	TW	US	Other	Total
AT	1	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	12
AU	0	111	0	3	2	2	0	1	0	3	5	0	4	1	7	2	1	1	0	0	0	1	1	1	2	23	17	189
BE	0	0	1	1	1	2	0	1	0	2	2	0	1	1	1	0	0	1	0	0	0	0	0	0	0	5	3	22
CA	0	3	1	205	3	4	1	2	1	5	8	0	4	2	9	3	1	1	1	0	0	1	1	1	2	49	23	331
CH	0	1	1	2	25	9	0	2	1	6	10	0	3	1	5	2	1	1	1	0	0	1	1	1	2	18	17	110
DE	1	2	1	2	5	25	1	3	1	10	16	0	4	3	7	3	1	2	1	1	0	2	1	1	2	23	21	139
DK	0	1	0	0	1	1	3	0	0	1	2	0	1	0	2	1	0	0	0	0	0	1	0	0	1	6	8	32
ES	0	0	0	0	1	2	0	3	0	3	3	0	1	1	1	0	0	1	0	0	0	0	0	0	0	5	5	30
FI	0	0	0	0	1	1	1	0	5	1	1	0	1	0	1	0	0	0	1	0	0	2	0	0	0	2	6	25
FR	2	2	4	2	6	21	1	8	3	61	21	1	4	8	7	3	1	6	1	1	1	3	1	1	2	26	23	217
GB	1	6	2	5	9	10	2	5	2	13	191	0	12	4	18	10	3	3	4	1	1	5	4	3	7	61	65	446
IE	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	8
IN	0	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
IT	0	1	0	1	1	3	0	1	0	4	4	0	2	6	3	1	0	1	0	0	0	1	0	0	1	8	8	48
JP	0	1	0	1	1	5	0	0	0	1	2	0	5	0	38	1	0	0	0	0	0	0	1	0	1	7	18	84
KR	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	25	0	0	0	0	0	0	0	0	0	0	13	42
MY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	2	15
NL	0	1	0	1	1	2	0	1	0	2	4	0	1	1	3	1	0	7	1	0	0	1	0	0	1	9	8	45
NO	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	12	0	0	4	0	0	0	2	4	27
PL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	1	8
PT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	3
SE	0	1	0	1	1	2	2	1	2	2	4	0	3	1	3	1	0	1	3	1	0	65	1	0	1	9	17	121
SG	0	0	0	0	0	0	0	0	0	1	1	0	5	0	1	1	1	0	0	0	0	0	3	1	1	3	9	30
TH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	7
TW	0	0	0	0	0	1	0	0	0	0	2	0	1	0	1	1	0	0	0	0	0	0	0	0	11	3	5	29
US	4	44	9	67	42	50	7	22	7	63	108	2	51	21	135	35	13	17	9	6	3	19	19	9	24	2,775	295	3,855
Other	0	1	0	1	1	2	0	0	0	1	4	0	1	0	1	1	0	0	0	0	0	0	0	0	1	8	8	32
Total	11	175	21	294	100	144	19	52	24	181	391	5	144	50	246	93	36	43	35	19	7	106	36	25	59	3,051	579	5,945

Table A.2
Variable Definitions

Variable	Definition
	Panel A: Fund Characteristics
IS Dummy	Dummy that equals one if the countries of sale are different from the countries where the fund invests, and zero otherwise.
ISD	Minus the average correlation in the last 12 quarters between flows of the countries of sale and the stock market U.S.-dollar returns of the countries where the fund invests (weights based on stock market capitalization).
IS Physical Distance	Logarithm of one plus the average geographic distance (in kms) between the countries of sales and the countries where the fund invests (weights based on stock market capitalization).
IS Return Distance	Minus the average correlation in the last 12 quarters between the stock market return of the countries of sale and the stock market return in U.S. dollars of the countries where the fund invests (weights based on stock market capitalization).
IS Time Distance	Average time distance (in hours) between the countries of sale and the countries where the fund invests (weights based on stock market capitalization).
IS Language Distance	Average language distance (a dummy variable that equals one if the official language is different in a country pair) between the countries of sale and the countries where the fund invests (weights based on stock market capitalization).
IS Individualism Distance	Average Hofstede individualism index distance between the countries of sale and the countries where the fund invests (weights based on stock market capitalization).
IS Currency Distance	Average currency distance (a dummy variable that equals one if official currency is different in a country pair) between the countries of sale and the countries where the fund invests (weights based on stock market capitalization).
FS Physical Distance	Logarithm of one plus the average geographic distance (in kms) between the fund domicile country and the countries where the fund invests (weights based on stock market capitalization).
Return	Fund net return in U.S. dollars (percentage per quarter).
Four-Factor Alpha	Four-factor alpha (percentage per quarter) estimated with three years of past monthly fund excess returns in U.S. dollars and regional factors (Asia, Europe and North America) or world factors in the case of global funds.
Benchmark-Adjusted Return	Difference between the fund net return and its benchmark return in U.S. dollars (percentage per quarter).
One-Factor Alpha	One-factor alpha (percentage per quarter) estimated with three years of past monthly fund excess returns in U.S. dollars and regional factors (Asia, Europe and North America) or world factors in the case of global funds.
Information Ratio	Ratio of the four-factor alpha (percentage per quarter) to the standard deviation of the residuals from the four-factor model estimated with three years of past monthly fund excess returns in U.S. dollars and regional factors (Asia, Europe and North America) or world factors in the case of global funds.
TNA	Total net assets in millions of U.S. dollars.
Family TNA	Total net assets in millions of U.S. dollars of other equity funds in the same management company excluding the own fund TNA.
Age	Number of years since the fund launch date.
Expense Ratio	Total annual expenses as a fraction of total net assets.

Table A.2 (continued)

Total Load	Sum of front-end and back-end loads as a fraction of new investments.
Flow	Percentage growth in TNA (in local currency) net of internal growth (assuming reinvestment of dividends and distributions).
Flow Category	Average percentage growth in TNA (in local currency) net of internal growth (assuming reinvestment of dividends and distributions) into funds with the same investment style (i.e., geographical focus).
Total Risk	Standard deviation (percentage per quarter) of fund returns estimated with three years of past monthly fund returns in U.S. dollars.
Systematic Risk	Loading on the local market factor from the four-factor model estimated with three years of past monthly fund excess returns in U.S. dollars and regional factors (Asia, Europe and North America) or world factors in the case of global funds.
Tracking Error	Standard deviation (percentage per quarter) of the residuals from the four-factor model estimated with three years of past monthly fund excess returns in U.S. dollars and regional factors or world factors in the case of global funds.
R-Squared	R-squared from the four-factor model estimated with three years of past monthly fund excess returns in U.S. dollars and regional factors (Asia, Europe and North America) or world factors in the case of global funds.
Portfolio Firm Size	Logarithm of the average (value-weighted) market capitalization in millions of U.S. dollars of portfolio stock holdings.
Portfolio Illiquidity	Average (value-weighted) of the Amihud (2002) illiquidity ratio of portfolio stock holdings.
S1	Standard deviation (percentage per year) of fund returns in the first semester of the calendar year.
S2	Standard deviation (percentage per year) of fund returns in the second semester of the calendar year.
	Panel B: Stock Characteristics
Holdings Decrease (abs)	Absolute value of the sum of quarterly negative changes in mutual fund ownership (as a percentage of market capitalization).
Holdings	Mutual fund ownership (as a percentage of market capitalization).
Book-to-Market	Market value of equity (Worldscope item 08001) divided by book value of equity (Worldscope item 03501).
Market Capitalization	Market value of equity (Worldscope item 08001).
Volatility	Annualized standard deviation of daily stock returns.
Turnover	Share volume (Datastream item VO) divided by adjusted shares outstanding (Datastream item NOSH/AF).
Stock Price	Stock price in U.S. dollars (Worldscope item 05001).
MSCI Dummy	Dummy variable that equals one if a firm is a member of the MSCI ACWI in a given year, and zero otherwise.
Momentum	Annual stock return (Datastream item RI).
Dividend Yield	Ratio of dividend per share (Worldscope item 05101) by stock price (Worldscope item 05001).
ADR Dummy	Dummy that equals one if a firm is cross-listed on a U.S. exchange through a level 2-3 ADR or direct listing of ordinary shares, and zero otherwise (major depositary institutions and U.S. stock exchanges).
Number of Analysts	Number of analysts following a firm (IBES).
Foreign Sales	Foreign sales (Worldscope item 07101) divided by sales (Worldscope item 01001).
Closely Held Shares	Number of shares held by insiders (shareholders who hold 5% or more of shares outstanding, such as officers, directors, immediate families, and other corporations or individuals), as a fraction of shares outstanding (Worldscope item 08021).

Internet Appendix to
"Investor-Stock Decoupling in Mutual Funds"

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This Version: September 2016

Abstract

This internet appendix provides additional results and robustness analyses that are mentioned in the main text.

Table IA.1
Flow-Performance Relationship and Investor-Stock Decoupling: Continuous Variable

This table reports regressions of quarterly fund flows. In each quarter, a rank is assigned to each fund based on past twelve quarters return relative to funds in the same domicile and investment region. In columns (2) and (4), the piecewise-linear segments are *Low Rank* = min(0.5, *Rank*) and *High Rank* = *Rank* – *Low Rank*. The regressions include the same control variables (coefficients not shown) as in Table 4. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. In column (3) the unit of observation is a fund primary share class offered for sale in a given country. See Table A.2 for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)
Rank × *ISD*	-3.1064		
	(-9.05)		
Low Rank × *ISD*		-2.0205	-1.9153
		(-2.86)	(-1.57)
High Rank × *ISD*		-4.1644	-3.0979
		(-5.52)	(-2.43)
Rank	4.2342		
	(22.76)		
Low Rank		3.8752	4.4982
		(10.14)	(6.36)
High Rank		4.5667	5.8481
		(11.51)	(8.13)
ISD	1.4905	1.2116	0.6972
	(6.92)	(4.52)	(1.45)
Domicile dummies	Yes	Yes	Yes
Country-of-sale dummies	No	No	Yes
Fund type dummies	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes
Observations	170,917	170,917	275,544
R-squared	0.067	0.067	0.065

Table IA.2
Flow-Performance Relationship and Investor-Stock Decoupling by Country of Sale and Investment Region

This table reports regressions of quarterly fund flows. In each quarter, a rank is assigned to each fund based on past twelve quarters return relative to funds in the same domicile and investment region. In columns (2) and (4), the piecewise-linear segments are *Low Rank* = min(0.5, *Rank*) and *High Rank* = *Rank* – *Low Rank*. *High ISD* equals one if a fund is above the median in terms of *ISD* in each quarter. The regressions include the same control variables (coefficients not shown) as in Table 4. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. In column (4) the unit of observation is a fund primary share class offered for sale in a given country. See Table A.2 for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)
Rank × *IS Dummy*	-1.7029			
	(-5.56)			
Rank × *High ISD*		-1.4328		
		(-5.24)		
Low Rank × *High ISD*			-1.9457	-1.8443
			(-3.40)	(-1.47)
High Rank × *High ISD*			-0.9583	1.5026
			(-1.59)	(1.14)
Rank	6.2477	5.9324		
	(27.58)	(30.06)		
Low Rank			5.4000	6.0458
			(13.98)	(7.54)
High Rank			6.4369	6.2354
			(15.33)	(7.52)
IS Dummy	1.2162			
	(4.99)			
High ISD		0.8068	0.9369	0.5471
		(5.06)	(4.61)	(1.25)
Domicile dummies	Yes	Yes	Yes	Yes
Country-of-sale dummies	No	No	No	Yes
Fund type dummies	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes
Observations	170,917	170,917	170,917	275,544
R-squared	0.067	0.067	0.067	0.064

Table IA.3
Performance and Investor-Stock Decoupling in Excess of Return Distance

This table reports panel regressions of quarterly risk-adjusted fund performance. The dependent variable is the alpha from the four-factor model. The factor model is estimated using monthly fund returns in U.S. dollars in the prior 36 months. The regressions include the same control variables (coefficients not shown) as in Table 5. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. In column (8) the unit of observation is a fund primary share class offered for sale in a given country. See Table A.2 in Appendix for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ISD − IS Return Distance	0.3176	0.3347	0.3294	0.3310	0.3285	0.3359	0.4279	0.3117
	(7.87)	(8.25)	(8.08)	(8.21)	(8.17)	(8.29)	(10.48)	(5.43)
IS Physical Distance		0.0535						
		(4.87)						
IS Time Distance			0.0175					
			(2.33)					
IS Language Distance				0.1538				
				(2.06)				
IS Individualism Distance					0.0100			
					(3.60)			
IS Currency Distance						0.3568		
						(5.43)		
FS Physical Distance							-0.0208	
							(-4.37)	
Domicile dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-of-sale dummies	No	No	No	No	No	No	No	Yes
Fund type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	395,413	395,413	395,413	395,413	395,413	395,413	395,413	611,199
R-squared	0.057	0.057	0.057	0.057	0.057	0.057	0.054	0.052

Table IA.4
Performance and Investor-Stock Decoupling by Country of Sale and Investment Region

This table reports panel regressions of quarterly risk-adjusted fund performance. The dependent variable is the alpha from the four-factor model. The factor model is estimated using monthly fund returns in U.S. dollars in the prior 36 months. The regressions include the same control variables (coefficients not shown) as in Table 5. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. In column (9) the unit of observation is a fund primary share class offered for sale in a given country. See Table A.2 in Appendix for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ISD	0.4744	0.4896	0.4975	0.4849	0.4866	0.4815	0.4821	0.5055	0.5779
	(11.97)	(12.30)	(12.48)	(12.17)	(12.33)	(12.12)	(12.14)	(12.53)	(10.65)
IS Physical Distance		0.0567							
		(5.23)							
IS Return Distance			1.0702						
			(7.99)						
IS Time Distance				0.0195					
				(2.51)					
IS Language Distance					0.1988				
					(2.66)				
IS Individualism Distance						0.0080			
						(2.88)			
IS Currency Distance							0.3135		
							(4.71)		
FS Physical Distance								-0.0276	
								(-5.78)	
Domicile dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-of-sale dummies	No	No	No	No	No	No	No	No	Yes
Fund type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	385,827	385,827	385,827	385,827	385,827	385,827	385,827	385,827	594,773
R-squared	0.059	0.060	0.060	0.060	0.060	0.060	0.060	0.057	0.052

Table IA.5
Flows and Investor-Stock Decoupling: The Effect of Market Distress

This table reports panel regressions of quarterly fund flows. High *ISD* equals one if a fund is above the median in terms of *ISD* in each quarter. The *Market Return* is the fund's investment region return in U.S. dollars. The *Crisis Dummy* takes the value of one in the period from the fourth quarter of 2007 through the end of 2008, and zero otherwise. The *VIX* is the CBOE volatility index. The *Stress Dummy* takes the value of one when the *VIX* is above the 75th percentile of the distribution. The regressions include the same control variables (coefficients not shown) as in Table 4. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. See Table A.2 in the Appendix for variable definitions. Robust *t*-statistics clustered by fund and time are in parentheses.

	(1)	(2)	(3)	(4)
High ISD × *Market Return*	-4.9100			
	(-5.27)			
High ISD × *Crisis Dummy*		1.1130		
		(8.61)		
High ISD × *VIX*			0.0601	
			(12.01)	
High ISD × *Stress Dummy*				1.6740
				(14.93)
Market Return	7.5405			
	(11.18)			
Crisis Dummy		-1.4612		
		(-16.12)		
VIX			-0.0742	
			(-21.11)	
Stress Dummy				-1.7787
				(-22.79)
High ISD	0.2452	-0.0993	-1.0968	-0.2456
	(3.84)	(-1.32)	(-8.18)	(-3.32)
Domicile dummies	Yes	Yes	Yes	Yes
Fund type dummies	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes
Observations	390,160	390,160	390,160	390,160
R-squared	0.065	0.065	0.065	0.066

Table IA.6
Flow-Performance Relationship and Investor-Stock Decoupling: International Fund Dummy

This table reports regressions of quarterly fund flows. In each quarter, a rank is assigned to each fund based on past twelve quarters return relative to funds in the same domicile and investment region. In columns (3) and (4), the piecewise-linear segments are *Low Rank* = min(0.5, *Rank*) and *High Rank* = *Rank* – *Low Rank*. *High ISD* equals one if a fund is above the median in terms of *ISD* in each quarter. The regressions include the same control variables (coefficients not shown) as in Table 4. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. In column (4) the unit of observation is a fund primary share class offered for sale in a given country. See Table A.2 for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)
Rank × *IS Dummy*	-1.7569			
	(-5.76)			
Rank × *High ISD*		-2.6995		
		(-9.75)		
Low Rank × *High ISD*			-3.3251	-2.9494
			(-5.90)	(-2.62)
High Rank × *High ISD*			-2.1077	-0.4528
			(-3.40)	(-0.39)
Rank	6.2478	6.4592		
	(27.58)	(31.40)		
Low Rank			5.9601	6.3682
			(15.13)	(7.74)
High Rank			6.9315	7.1822
			(15.52)	(7.85)
IS Dummy	1.2763			
	(5.26)			
High ISD		1.3990	1.5569	0.8048
		(8.59)	(7.69)	(2.02)
International Dummy	-0.5315	-0.2075	-0.2254	-0.3902
	(-2.56)	(-1.70)	(-1.85)	(-1.89)
Domicile dummies	Yes	Yes	Yes	Yes
Country-of-sale dummies	No	No	No	Yes
Fund type dummies	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes
Observations	170,917	170,917	170,917	275,544
R-squared	0.067	0.067	0.067	0.065

Table IA.7
Flow-Performance Relationship and Investor-Stock Decoupling: Interaction with International Funds

This table reports regressions of quarterly fund flows. In each quarter, a rank is assigned to each fund based on past twelve quarters return relative to funds in the same domicile and investment region. In columns (3) and (4), the piecewise-linear segments are *Low Rank* = min(0.5, *Rank*) and *High Rank* = *Rank* – *Low Rank*. *High ISD* equals one if a fund is above the median in terms of *ISD* in each quarter. The regressions include the same control variables (coefficients not shown) as in Table 4. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. In column (4) the unit of observation is a fund primary share class offered for sale in a given country. See Table A.2 for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)
Rank × *IS Dummy*	0.8618			
	(1.24)			
Rank × *High ISD*		-2.5049		
		(-9.06)		
Low Rank × *High ISD*			-3.2073	-2.9388
			(-5.67)	(-2.59)
High Rank × *High ISD*			-1.8453	-0.4126
			(-2.99)	(-0.35)
Rank × *International Dummy*	-2.7942	-1.7141		
	(-4.08)	(-5.70)		
Low Rank × *International Dummy*			-0.7712	-0.2290
			(-1.29)	(-0.22)
High Rank × *International Dummy*			-2.6075	-0.7725
			(-4.05)	(-0.71)
Rank	6.2478	7.2425		
	(27.58)	(28.96)		
Low Rank			6.3086	6.5131
			(13.21)	(10.16)
High Rank			8.1285	7.6599
			(14.96)	(10.20)
IS Dummy	-0.2029			
	(-0.52)			
High ISD		1.2923	1.4717	0.7943
		(7.94)	(7.25)	(1.99)
International Dummy	1.0448	0.6763	0.4179	-0.1944
	(2.62)	(3.57)	(1.84)	(-0.49)
Domicile dummies	Yes	Yes	Yes	Yes
Country-of-sale dummies	No	No	No	Yes
Fund type dummies	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes
Observations	170,917	170,917	170,917	275,544
R-squared	0.067	0.067	0.068	0.065

Table IA.8
Performance and Investor-Stock Decoupling: International Fund Dummy

This table reports panel regressions of quarterly risk-adjusted fund performance. The dependent variable is the alpha from the four-factor model. The factor model is estimated using monthly fund returns in U.S. dollars in the prior 36 months. The regressions include the same control variables (coefficients not shown) as in Table 5. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. In column (9) the unit of observation is a fund primary share class offered for sale in a given country. See Table A.2 in Appendix for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
IS Dummy	0.1010									
	(1.70)									
ISD		0.4227	0.4225	0.4219	0.4234	0.4326	0.4246	0.4241	0.4227	0.3280
		(10.02)	(10.01)	(10.01)	(10.03)	(10.28)	(10.09)	(10.04)	(10.02)	(5.35)
IS Physical Distance			0.0213							
			(1.90)							
IS Return Distance				-0.4872						
				(-3.53)						
IS Time Distance					-0.0130					
					(-1.68)					
IS Language Distance						0.2061				
						(2.74)				
IS Individualism Distance							0.0189			
							(7.02)			
IS Currency Distance								-0.1161		
								(-1.81)		
FS Physical Distance									0.0031	
									(0.13)	
International Dummy	-0.3526	-0.2662	-0.4249	-0.1690	-0.2153	-0.3939	-0.5435	-0.1784	-0.2906	-0.2134
	(-5.54)	(-7.49)	(-4.99)	(-4.15)	(-5.16)	(-6.75)	(-10.62)	(-3.34)	(-1.58)	(-4.70)
Domicile dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-of-sale dummies	No	No	No	No	No	No	No	No	No	Yes
Fund type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	395,413	395,413	395,413	395,413	395,413	395,413	395,413	395,413	395,413	611,199
R-squared	0.054	0.054	0.054	0.055	0.054	0.055	0.055	0.054	0.054	0.048

Table IA.9
Fund Strategy and Investor-Stock Decoupling: International Fund Dummy

This table reports panel regressions of quarterly measures of fund risk. In column (1) the dependent variable is the standard deviation of fund returns in the prior 36 months estimated using monthly fund returns in U.S. dollars (*Total Risk*). In column (2) the dependent variable is the loading on the market factor from the four-factor model (*Systematic Risk*). In column (3) the dependent variable is the standard deviation of the residuals from the four-factor model (*Tracking Error*). In column (4) the dependent variable is the *R*-squared from the four-factor model at the quarterly frequency. In columns (5) and (6) the dependent variables are the value-weighted average market capitalization (*Portfolio Firm Size*) and Amihud illiquidity measure of portfolio stock holdings (*Portfolio Illiquidity*). In column (7) the dependent variable is the ratio of the annualized standard deviation of fund returns in the second semester (*S2*) to the annualized standard deviation of fund returns in the first semester (*S1*) at the annual frequency. The fractional performance ranks ranging from zero to one are assigned to funds according to their average return in the first semester by domicile and investment region (*Rank*). The regressions include the same control variables (coefficients not shown) as in Table 5. The sample includes open-end active equity funds (primary share class offered for sale in the domicile country) drawn from the Lipper database in the 1997-2010 period. See Table A.2 in the Appendix for variable definitions. Robust *t*-statistics clustered by fund are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Total Risk		*Systematic Risk*	*Tracking Error*	*R-squared*	*Portfolio Firm Size*	*Portfolio Illiquidity*	*S2/S1*
ISD	-0.3168	-0.1917	-0.0491	-0.0016	-0.0109	-0.0665	0.0101	0.0390
	(-9.99)	(-3.71)	(-15.50)	(-3.08)	(-5.30)	(-3.66)	(3.34)	(5.09)
Rank × *ISD*								0.0276
								(2.38)
Rank								-0.0860
								(-11.20)
S1								-0.0291
								(-81.97)
International Dummy	-0.4991	-0.3916	-0.0161	-0.0012	0.0723	0.6916	-0.0442	-0.0702
	(-11.80)	(-6.27)	(-4.04)	(-1.49)	(27.18)	(18.31)	(-11.81)	(-16.06)
Domicile dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-of-sale dummies	No	Yes	No	No	No	No	No	No
Fund type dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Investment region dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	395,413	611,199	395,413	385,860	395,413	253,266	253,251	76,540
R-squared	0.608	0.624	0.158	0.242	0.375	0.156	0.116	0.633