The Geography of Hedge Funds

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This article analyzes the relationship between the risk-adjusted performance of hedge funds and their proximity to investments using data on Asia-focused hedge funds. I find, relative to an augmented Fung and Hsieh (2004) factor model, that hedge funds with a physical presence (head or research office) in their investment region outperform other hedge funds by 3.72% per year. The local information advantage is pervasive across all major geographical regions, but is strongest for emerging market funds and funds holding illiquid securities. These results are robust to adjustments for fund fees, serial correlation, backfill bias, and incubation bias. I show also that distant funds, especially those based in the United States and the United Kingdom, are able to raise more capital, charge higher fees, and set longer redemption periods, despite their underperformance relative to nearby funds. It appears that distant funds trade investment performance for better access to capital. (*JEL* G11, G12, G23)

Does distance affect hedge fund performance? If not, why do some hedge funds locate close to their investments while others prefer to monitor their investments from afar and from the comfort of home? Anecdotal evidence suggests that proximity to investments may be helpful for hedge funds. Being near their investments or target firms allows hedge funds to maintain close contact with senior management and stay abreast of the latest developments. Fund managers can learn valuable information from other local firms along the supply chain by being on the ground. Nearby funds, who are also substantial stakeholders, can more easily engage in constructive shareholder activism and exert pressure on management to make shareholder-friendly improvements. Indeed, Brav et al. (2008) find that the market reacts favorably and in a nontransient way to news of shareholder activism by hedge funds.

This article investigates the link between funds' proximity to their primary investment markets and hedge fund risk-adjusted returns. I show that funds that have a physical presence (head office or research office[1]) in their main

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[1] I show that the presence of either a local head office or a local research office is beneficial to fund performance.

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investment region outperform other funds on a risk-adjusted basis by on average 3.72% per year (t-statistic = 5.10) after controlling for other fund characteristics. The superior performance of funds with investment region presence cannot be attributed to lower fees, greater backfill, and incubation bias (Brown, Goetzmann, and Ibbotson 1999; Fung and Hsieh 2000; Liang 2000), or illiquidity (Getmansky, Lo, and Makarov 2004). Similar results are obtained with fund alpha derived from pre-fee returns, from backfill and incubation bias-adjusted returns, and from unsmoothed returns adjusted for serial correlation. The hypothetical strategy of buying nearby funds and shorting distant funds yields risk-adjusted returns of about 5.90% per year (t-statistic = 2.94). This spread alpha is robust across all major investment regions and is substantially higher for regions and funds where the local informational advantage is likely to be stronger or more relevant. For instance, the nearby emerging markets fund portfolio outperforms the distant emerging markets fund portfolio by 9.97% per year after adjusting for risk. Similarly, the illiquid nearby fund portfolio with long redemption notice periods outperforms the illiquid distant fund portfolio with similar share restrictions by a risk-adjusted 11.18% per year. These results suggest that nearby hedge funds, especially those transacting in illiquid emerging market stocks, enjoy an informational advantage. In addition, the results are particularly relevant to hedge fund managers, funds of funds, and other fund investors. Assuming a 1% management fee and 10% performance fee, I show that a fund of funds portfolio comprising local hedge funds delivers a post-fee alpha of 7.11% per year.

This study focuses on hedge funds that invest primarily in Asian financial markets. The advantage of Asian hedge fund data is that I can derive a simple yet meaningful distance measure by using fund location and fund investment region information. For instance, on one hand, funds investing in Asia including Japan but located in the United States or the United Kingdom can be classified as distant funds. On the other hand, funds investing in Asia including Japan and located in Singapore, Hong Kong, or Tokyo can be classified as nearby funds. To conduct the same analysis on U.S.-focused funds, one will need information on the location of fund holdings. Unfortunately, hedge fund holdings (especially short positions) are highly confidential and rarely, if at all, available to researchers.

More importantly, by focusing on funds that invest in Asia, I can maximize the power of the tests of hedge fund geography. Hedge funds that invest in Asia are managed from a diverse set of locations around the world. Many Asia-focused funds are managed from New York and London. Yet others are managed from Tokyo, Hong Kong, Singapore, and Sydney. This creates extreme distances and time zone differences between nearby and distant funds, which amplify the effects of a local informational advantage, if any. One does not observe such extreme distances and time zone differences between nearby and faraway funds for U.S.-focused funds, Europe-focused funds, Latin America-focused funds, or Eastern Europe-focused funds. For instance, most Latin

America-focused funds are located *in situ*.[2] The few Latin America-focused funds that are not located in Latin America are often based in fairly proximate locations like Miami, Bermuda, the Caribbean Islands, the Cayman Islands, and the U.S. Virgin Islands.

To adjust for risk, I employ an augmented Fung and Hsieh (2004) factor model. Fung and Hsieh (1999, 2000, 2001), Mitchell and Pulvino (2001), and Agarwal and Naik (2004) show that hedge fund returns relate to conventional asset class returns and option-based strategy returns. Building on this, Fung and Hsieh (2004) show that their parsimonious asset-based style factor model can explain up to 80% of the variation in global hedge fund portfolio returns. I augment the Fung and Hsieh factor model with additional equity factors, which are derived from a principal components analysis approach (following Fung and Hsieh 1997). The equity factors used include the excess return on the MSCI Asia ex Japan equity index and the excess return on the Nikkei 225 Japan equity index. In response to concerns that fund returns may resemble the payoffs from writing options on the equity market (Agarwal and Naik 2004), I also include in the augmented model factors derived from call and put options on the Japan Nikkei 225 index. The augmented factor model explains up to 75% of the variation in Asian hedge fund portfolio returns and allows one to abstract from risk in the analysis of geography and hedge fund performance.

This article presents novel results linking distance to hedge fund alpha. In doing so, it builds on several themes. Agarwal and Naik (2004) and Fung and Hsieh (2004) show that fund risk can be explained by loadings on option-like factors. By leveraging on these results, Kosowski, Naik, and Teo (2007) show that top fund risk-adjusted performance cannot be explained by luck, or sample variation. Consistent with this, they find that fund alpha persists over annual horizons. Their results indicate that the top fund managers possess investment skills. My results suggest that part of this skill stems from the ability to take advantage of local information. Funds that invest in nearby markets tend to exhibit greater skill (i.e., alpha) than those that invest in distant markets. French and Poterba (1991), Cooper and Kaplanis (1994), and Tesar and Werner (1995) show that investors severely overweight their portfolios toward domestic assets. The results in this article shed light on this international home bias puzzle.

This article also contributes to a growing literature on distance and investment performance.[3] Pioneering work by Coval and Moskowitz (2001) demonstrates that U.S. mutual fund managers are better at picking stocks of nearby firms than stocks of distant firms. Ivković and Weisbenner (2005) witness a similar pattern with U.S. retail investors. At the same time, Malloy (2005) finds that U.S. equity analysts issue more accurate earnings forecasts for nearby firms

[2] To be sure, the Eurekahedge database indicates that 90% (148 out of 164 funds) of Latin America-focused funds are based in Latin America.

[3] See also Krugman (1991), Lucas (1993), Audretsch and Feldman (1996), Loughran and Schultz (2005), and Becker (2007) for related studies on the economic importance of geography.

than for distant firms. On the international front, Hau (2001) reports, using data on professional traders, that local traders outperform foreign traders in the German market. Choe, Kho, and Stulz (2005) and Dvorak (2005) provide evidence that foreigners underperform other investors in Korea and Indonesia, respectively. Bae, Stulz, and Tan (2008) document, in their sample of thirty-two countries, that local equity analysts issue more accurate earnings forecasts than do foreign analysts. In particular, they find that the accuracy differential is stronger in emerging markets, where less information is disclosed by firms.[4]

However, none of the aforementioned studies investigate the effects of distance on hedge fund performance. While both mutual funds and hedge funds are interested in alpha, hedge funds face fewer constraints in their search for alpha. First, hedge funds can short sell and take full advantage of negative signals on stocks. Second, hedge funds are evaluated on an absolute return basis while mutual funds are evaluated relative to a benchmark. Mutual funds cannot always invest only in nearby stocks; otherwise, their tracking error relative to their benchmark becomes too large. Third, hedge funds with long redemption and lock-up periods can invest in illiquid securities where the information flow is low. Mutual funds cannot invest in such illiquid securities as they have to cater for redemptions at $T+2$. Hence, an analysis of hedge fund performance allows for a more powerful test of the local information advantage hypothesis.

The hedge fund industry is also an interesting laboratory for examining local information effects partly because of its phenomenal growth. A whole cottage industry has emerged to help investors select ex ante the hedge funds that deliver alpha. This industry includes hedge fund databases, hedge fund consultants, and funds of funds. Investment banks are now churning out hedge fund replication products to help investors refocus their attention on alpha.[5] Yet, how hedge funds generate alpha, for the most part, remains a mystery. Given the reasons outlined in the paragraph above, it seems natural that local information should explain some of the alpha. Nonetheless, one could also argue that an influx of nearby funds will quickly erode away any incipient local information advantage. After all, hedge funds are widely thought of as being small, lean, and nimble.

Consistent with the view that mutual funds are constrained and cannot take full advantage of local information, mutual funds that invest more in local stocks do not significantly outperform mutual funds that invest more in distant stocks (see page 823 of Coval and Moskowitz 2001). In contrast, my results

[4] The international evidence is mixed, however. Grinblatt and Keloharju (2000) and Seasholes (2000) argue that foreign investors have access to better resources and expertise than local investors, which may allow them to overcome any local informational advantage. Consistent with this, they show that foreigners outperform locals in Finland and Taiwan, respectively. To the extent that this is true in my sample (i.e., foreign funds are more sophisticated than local funds), it biases the results downward since I compare the performance of nearby local and foreign hedge funds with the performance of distant foreign hedge funds.

[5] See "Cloned strategies offer investors better options," *The Financial Times*, 22 March 2008.

indicate that one can earn significant economic rents by investing in hedge funds that operate near their investment markets. In line with the view that hedge funds are better able to take advantage of local information as they face fewer constraints, the risk-adjusted spread between nearby and distant hedge fund portfolios (5.90% per year) is substantially higher than the risk-adjusted spread between the local and non-local stock portfolios of mutual funds (1.18% per year) and of households (1.08% per year).[6]

The overperformance of hedge funds located near their investment markets provides some justification for the double layer of fees charged by funds of funds (Brown, Goetzmann, and Liang 2004). These pools of hedge funds typically levy a 1% management fee and a 10% performance fee on top of the fees charged by their underlying hedge fund holdings. The additional fees are justified to the extent that the fees allow funds of funds to conduct proper due diligence and monitor their hedge fund investments in distant markets. This is particularly relevant for funds of funds based in developed markets but investing via hedge funds in less developed markets like Asia and emerging markets. By investing through funds of funds, investors from developed markets can get exposure to hedge funds located near their investment markets wherever those investment markets may be. The alternative for individual investors is to invest directly in the underlying hedge funds themselves. However, given the importance of investing in "nearby" funds, the due diligence and monitoring costs involved may be prohibitive for individual investors who lack the economies of scale.

The aforementioned findings also speak to the broader notion that being connected is helpful to investment performance. While the degree of connectedness can be measured by the geographical distance between hedge funds and their investment markets, there are other ways of quantifying connectedness. For example, I show in portfolio sorts that among Japan-focused hedge funds, those with native-speaking fund managers outperform those without them by 4.93% per year after adjusting for risk. Just as geographical distance is important to investment performance, so is language-based distance.

Will the local informational advantage induced by geography be totally eroded away over time by an influx of nearby funds? I find that despite their underperformance, funds with distant head offices, e.g., those based in the United States and the United Kingdom, manage more capital than those with nearby head offices. Moreover, these distant funds charge higher management fees and set longer, more favorable redemption periods than do nearby funds. These results suggest that distant funds, by being close to their investor base in developed markets (large institutions, pension funds, and endowments), trade investment performance for better access to capital. I also note that hedge funds may choose to locate in distant, more developed locations to maintain proximity to their business partners, cultivate relationships with choice prime brokers and administrators, and facilitate the hiring and retention of talent.

[6] See the alpha spreads in Table 1 of Coval and Moskowitz (2001) and Table IX of Ivković and Weisbenner (2005).

The rest of this article is as follows. Section 1 describes the data while Section 2 lays out the framework for analyzing fund risk-adjusted performance. Section 3 presents the results linking geographical distance to fund risk-adjusted performance. Section 4 considers the effects of an alternate measure of distance based on language. A discussion of why the local informational advantage may persist over time follows in Section 5. Section 6 concludes.

1. Data

I merge data on Asian hedge funds from three hedge fund databases: Eurekahedge, Asiahedge, and Hedge Fund Research (henceforth HFR). Eurekahedge is maintained by Eurekahedge Advisors Pte Ltd, while Asiahedge is maintained by Hedge Fund Intelligence Ltd. Both Eurekahedge and Asiahedge include mainly funds that invest a significant portion of their assets in Asian markets. HFR, on the other hand, is a large global hedge fund database. The sample consists of monthly fund return data from January 2000 to June 2006. While HFR and Asiahedge started collecting fund return data from 1994 and 1999, respectively, Eurekahedge only started collecting fund return data from 2000 (but includes fund returns since inception). Hence, I focus on the period from 2000 onward to ameliorate survivorship bias.

The sample also includes data on a host of fund characteristics including management fee, performance fee, redemption frequency, notification period, lock-up period, investment style, investment geographical region, fund location, fund size, and fund minimum investment. These fund characteristics are recorded in year 2006 and I take these characteristics as constant over the sample period.[7] Since minimum investments are sometimes quoted in currencies other than the U.S. dollar, I convert all minimum investments to U.S. dollars using exchange rates on 30 June 2006 so as to facilitate meaningful comparison. Note that unlike Eurekahedge and Asiahedge, which provide explicit information on the fund main investment region, HFR does not. To identify the Asia-focused hedge funds in the HFR database, I use a combination of fund investment region information and fund name. Fund investment region information in HFR is quoted as a percentage of fund exposure. I classify as Asian funds those HFR funds that have greater than 50% exposure to Asian markets. Naturally, the hedge fund sample includes both dead and live funds. Of the 1159 funds with at least one month of return data in the sample period, 183 are dead funds. As such, my dead funds to total funds ratio of about 16% is lower but still comparable to the corresponding 22% ratio for the merged HFR, TASS, CISDM, and MSCI database used by Kosowski, Naik, and Teo (2007). One reason for the lower ratio could be that there are more new funds in the sample than in a global database of hedge funds. Out of the 1159 funds

[7] This assumption seems reasonable for all the fund characteristics except fund size. Consequently, I will avoid making any inferences on fund size in the analysis. I shall revisit this issue later in the paper.

Table 1
Summary statistics

Investment strategy	Total funds	Dead funds	With presence	Without presence	Return months
Panel A: By investment strategy					
Equity long/short	678	126	243	435	21,201
Relative value	59	10	19	40	2,424
Event driven	143	15	83	60	5,205
Macro	26	6	11	15	759
Directional	131	13	53	78	5,599
Fixed income	44	5	17	27	1,381
Managed futures	14	3	7	7	349
Others	64	5	33	31	3,371
Panel B: By investment region					
Asia excluding Japan	176	21	132	44	6,768
Asia including Japan	213	40	118	95	6,618
Japan only	381	77	18	363	12,806
Australia/New Zealand	86	18	77	9	3,135
Emerging markets	173	17	49	124	7,397
Greater China	79	8	57	22	2,256
Korea	11	1	4	7	395
Taiwan	7	1	5	2	264
India	33	0	6	27	650

The sample period is from January 2000 to June 2006. Funds are grouped according to their primary investment strategy (panel A) or according to their primary investment geographical region (panel B). Funds with presence are funds with a physical presence (head office or research office) in their investment geographical region. The total number of funds is 1159. The total number of dead funds is 183. And the total number of fund months with return information is 40,289.

in my sample, 958 funds or 83% of the funds started during the sample period. This is higher than the corresponding 74% number for the entire HFR database (which includes funds investing in non-Asian securities). Clearly, the phenomenal growth in the number of hedge funds in my sample contributes to the lower ratio of dead to live funds.

As mentioned, the data contain information on fund investment region and fund location. In addition, some funds in Eurekahedge and Asiahedge also provide information on the location of their research offices. This allows me to determine whether funds have a physical presence (head or research office) within their investment region. In Table 1, I break down the funds in the sample by investment style and investment region and report the following summary statistics: the total number of funds, the number of dead funds, the number of return months, as well as the number of funds with and without investment region presence.

From the summary statistics, one can see that the sample spans a broad range of investment regions and styles. The funds invest in several geographical regions: Asia excluding Japan, Asia including Japan, Japan only, Australia/New Zealand, emerging markets, Greater China, Korea, Taiwan, and India. There are equity long/short, relative value, event driven, macro, directional, fixed income, and managed futures funds in the sample. Not surprisingly, a vast majority are equity long/short funds. In this article, I focus on this group of funds for the following reasons. First, it is easiest to understand the risks underlying equity long/short funds. For example, the principal components approach of Fung and Hsieh (1997) can be used to uncover additional equity factors. This will allow one to more precisely measure the alpha of equity long/short funds. Second, funds in investment styles like macro and managed futures trade global securities and/or rely on technical trading indicators. It is not clear how local information is relevant to the investment processes of these funds.

I recognize that hedge fund data are susceptible to many biases (Fung and Hsieh 2000). These biases stem from the fact that, due to the lack of regulation among hedge funds, inclusion in hedge fund databases is voluntary. As a result, there is a self-selection bias. For instance, funds often undergo an incubation period where they rely on internal funding before seeking capital from outside investors. Incubated funds with successful track records then go on to list in various hedge fund databases while the unsuccessful funds do not, resulting in an incubation bias. Separate from this, when a fund is listed on a database, it often includes data prior to the listing date. Again, since successful funds have a strong incentive to list and attract capital inflows, these backfilled returns tend to be higher than the nonbackfilled returns. In the analysis that follows, I will repeat the tests after dropping the first twelve months of return data from each fund so as to ensure that the results are robust to backfill and incubation bias.

2. Asset-Based Style Factors for Hedge Fund Returns

Fung and Hsieh (1999, 2000, 2001), Mitchell and Pulvino (2001), and Agarwal and Naik (2004) show that hedge fund returns relate to conventional asset class returns and option-based strategy returns. Building on this pioneering work, Fung and Hsieh (2004) propose an asset-based style (henceforth ABS) factor model that can explain up to 80% of the monthly variation in hedge fund portfolios. Their ABS model avoids using a broad-based index of hedge funds to model hedge fund risk since a fund index can inherit errors that were inherent in hedge fund databases. These problems have been noted by Brown, Goetzmann, and Ibbotson (1999); Fung and Hsieh (2000); and Liang (2000). They include survivorship bias, backfill or instant history bias, selection bias, sampling differences across fund databases, lack of transparency in the construction of fund indexes, and the choice of index weights. Fung and Hsieh (2004) choose their ABS factors by extracting common return components from subgroups of hedge funds that were classified by data vendors as having similar styles. Then, they link those common sources of risk in hedge fund returns to observable market prices.

In this section, I adopt a similar methodology to augment the Fung and Hsieh (2004) model so as to better explain risk in Asian hedge funds. By measuring fund performance relative to the augmented Fung and Hsieh (2004) model, I can abstract from risk when analyzing the relationship between fund performance and fund proximity to investments. To identify additional ABS

Table 2
Explaining hedge fund returns: a principal components analysis

Investment region	Number of funds	Principal components PC1	PC2	PC3	PC4	PC5	PC6	PC7
Asia excluding Japan	105	**0.80**	0.09	0.02	0.00	0.00	0.09	0.01
Asia including Japan	120	**0.54**	0.32	0.00	0.05	0.00	0.00	0.09
Australia/NZ	50	0.33	0.12	0.09	0.07	0.35	0.03	0.00
Emerging markets	43	**0.58**	0.29	0.03	0.01	0.06	0.03	0.00
Greater China	40	**0.85**	0.15	0.00	0.00	0.00	0.00	0.00
India	15	0.12	0.26	**0.62**	0.00	0.00	0.00	0.00
Japan only	296	0.14	0.07	0.00	**0.67**	0.03	0.05	0.03
Percentage of total variance explained		65.49	17.65	7.50	3.46	3.02	2.03	0.85

R-squares from regressions of equity long/short hedge fund region portfolio returns on their principal components. For each region with more than ten funds, the equal-weighted portfolio of the region returns is constructed. Principal components analysis is used to break the returns of the region portfolios into orthogonal principal components. The returns of each region portfolio are then regressed on each principal component, and the *R*-squares from the regressions recorded. PC1 denotes the top principal component; PC2 denotes the second principal component, etc. *R*-squares that are greater than or equal to 0.50 are in boldface for convenience. The sample period is from January 2000 to June 2006.

factors in Asian hedge fund space, I first perform principal components analysis of equity long/short hedge funds grouped by investment region. This is done for all regions with more than ten funds. Table 2 reports the *R*-squares from the regression of fund region returns on each of the principal components, as well as the percentage of the total variation explained by each principal component. It indicates that the first principal component alone can account for about 65.49% of the variation in fund region returns. This compares favorably with Fung and Hsieh (1997), who find that the top five principal components can account for 43% of the variation in offshore and onshore U.S. fund returns.

The *R*-squares in Table 2 reveal that the first principal component is likely to be a broad Asian equity factor since it explains much of the return variation for funds in the equity long/short style across all regions. It is harder to pin down the identity of the second principal component since it has exposure to Asia including Japan funds, emerging market funds, and India funds. Since the second principal component explains only 17.65% of the variation in fund region returns, I focus on linking the first principal component to observable market prices.

In this effort, I compute the correlation between the first principal component and various Asian equity market indices, including the Nikkei 225, the MSCI All Countries Asia, and the MSCI All Countries Asia ex Japan indices. I find that the Asia ex Japan market index achieves the highest correlation of 0.65 with the first principal component. The correlations with the Asia and Japan market indices follow closely at 0.63 and 0.57, respectively. Hence, I augment the Fung and Hsieh (2004) model with two additional factors: the excess return on the MSCI All Countries Asia ex Japan equity market index (henceforth *ASIAMRF*) and the excess return on the Nikkei 225 Japan equity market index[8]

[8] The Japan equity factor (*JAPMRF*) is included to help explain the returns of Japan-focused funds.

(henceforth *JAPMRF*), so as to better explain variation in Asian hedge fund returns.

One concern with the Fung and Hsieh (2004) model is that the factors may not capture the return payoffs of funds engaged in option-based strategies on Asian equity market indices. For instance, Agarwal and Naik (2004) show that the payoffs of many equity hedge funds resemble those from writing naked out-of-the-money (henceforth OTM) put options on the equity market. In response, I also augment the Fung and Hsieh (2004) model with two option-based equity factors.[9] Following Agarwal and Naik (2004), I use OTM European call and put options on the Nikkei 225 traded on the Singapore Stock Exchange. The OTM call option strategy is as follows. On the first day of January, buy an OTM call option on the Nikkei 225 that expires in February. On the first day of February, sell the option bought a month ago (i.e., in January) and buy another OTM call option on the Nikkei 225 that expires in March. Repeat this process every month and record the returns from this strategy. The payoffs for the OTM put option-based strategy are derived using an analogous procedure. I select the OTM call (put) option to be the one with the next higher (lower) strike price relative to the at-the-money call (put) option whose present value of strike price is closest to the current index value.

Next, I evaluate the efficacy of the augmented factor model by regressing the Asian hedge fund portfolio on the factors from the augmented and nonaugmented models, and comparing the adjusted R-squares. The augmented factor model is as follows:

$$\begin{aligned} r_{im} = a_{iM} &+ b_{iM}\, SNPMRF_m + c_{iM}\, SCMLC_m + d_{iM}\, BD10RET_m \\ &+ e_{iM}\, BAAMTSY_m + f_{iM}\, PTFSBD_m + g_{iM}\, PTFSFX_m \\ &+ h_{iM}\, PTFSCOM_m + j_{iM}\, ASIAMRF_m + k_{iM}\, JAPMRF_m \\ &+ o_{iM}\, OTMC_m + p_{iM}\, OTMP_m + \varepsilon_{im}, \end{aligned} \tag{1}$$

where $m = 1, \ldots, M$, r_{im} is the monthly return on portfolio i in excess of the one-month T-bill return, *SNPMRF* is the S&P 500 return minus the risk-free rate, *SCMLC* is the Wilshire small cap minus large cap return, *BD10RET* is the yield spread of the U.S. ten-year Treasury bond over the three-month T-bill adjusted for the duration of the ten-year bond, *BAAMTSY* is the change in the spread of Moody's BAA bond over the ten-year Treasury bond also appropriately adjusted for duration, *PTFSBD* is the bond PTFS, *PTFSFX* currency PTFS, *PTFSCOM* is the commodities PTFS, *OTMC* is the Nikkei 225 OTM call option factor, *OTMP* is the Nikkei 225 OTM put option factor, and where PTFS is primitive trend-following strategy (see Fung and Hsieh 2004; Fung et al. 2008).

[9] I deliberately avoid adding even more factors so as to maintain the parsimony of the factor model and keep the degrees of freedom high in the regressions.

The results in panel A of Table 3 indicate that the augmented model explains the variation in Asian hedge fund returns well. The adjusted R-square for the augmented model is 75% or a meaningful 29% more than that for the nonaugmented model. Also, it is not surprising that the factor loading on *ASIAMRF* is statistically significant at the 1% level (t-statistic = 4.87), given the high correlation of *ASIAMRF* with the important first principal component. Interestingly, the factor loading on the Japan equity factor *JAPMRF* is also of comparable magnitude and statistically significant (t-statistic = 4.83). When I estimate similar regressions for fund portfolios stratified by investment region (for regions with more than forty funds), I find that this is due to the presence of Japanese funds that form the largest group of funds in the sample. The Japan only and the Asia including Japan fund portfolios are the only region portfolios that load significantly on *JAPMRF*. The fund region results also indicate that the augmented model explains at least 50% of the variation in returns for each region. This is due in part to the explanatory power of the Asian equity factors over Asian hedge fund returns. Four of the five regions load significantly on at least one Asian equity factor (*ASIAMRF* and *JAPMRF*). In contrast, only two of the five regions load significantly on at least one U.S. equity factor (*SNPMRF* and *SCMLC*). In general, the Asian option-based factors do not explain as much of the fund region returns as do the Asian equity factors. Still, the *OTMC* and *OTMP* factors explain variation in fund returns for the Japan portfolio and to a lesser extent the emerging markets portfolio. The weaker explanatory power of *OTMC* and *OTMP* may simply reflect the relatively less developed nature of the investment markets in Asia.

3. Geography and Hedge Fund Performance

The discussion thus far lays out the framework for analyzing fund alpha. It remains to investigate the relationship between hedge fund geography and risk-adjusted return or alpha.

3.1 The cross-section of hedge fund alpha

To this end, I estimate cross-sectional regressions of hedge fund alpha, measured relative to the augmented Fung and Hsieh (2004) model, on an indicator variable for investment region presence. Investment region presence is set equal to 1 for hedge funds with a head office or research office in their respective investment regions. Otherwise, investment region presence is set equal to 0. I estimate both a univariate regression and a multivariate regression, where I control for hedge fund characteristics that may affect fund performance.

Following Carhart (1997), I first calculate monthly fund abnormal return or alpha as fund excess returns minus the factor realizations times loadings estimated over the entire sample period (see Equation 5 of Carhart 1997).

Table 3
Explaining hedge fund returns: an augmented Fung and Hsieh (2004) factor model

Portfolio	Return (pct/year)	Alpha (pct/year)	*SNPMRF*	*SCMLC*	*BD10RET*	*BAAMTSY*	*PTFSBD*	*PTFSFX*	*PTFSCOM*	*ASIAMRF*	*JAPMRF*	*OTMC*	*OTMP*	Adj. R^2
					Panel A: All funds									
All funds	9.58	5.89	0.25	0.17	0.07	0.13	0.00	0.00	0.04					0.46
	(3.77)	(2.88)	(5.81)	(3.61)	(0.84)	(0.99)	(0.24)	(0.00)	(3.02)					
All funds	9.58	5.97	0.04	0.05	0.10	−0.03	0.00	0.01	0.01	0.17	0.13	0.00	0.00	0.75
	(3.77)	(4.23)	(1.07)	(1.50)	(1.83)	(−0.27)	(−0.64)	(1.04)	(1.21)	(4.87)	(4.83)	(1.99)	(0.30)	
					Panel B: By investment region									
Asia excluding Japan	14.10	10.29	0.05	0.03	0.09	−0.02	0.01	0.01	0.03	0.37	0.08	0.00	0.00	0.56
	(3.23)	(3.27)	(0.61)	(0.41)	(0.70)	(−0.09)	(0.40)	(0.72)	(1.14)	(4.69)	(1.29)	(0.50)	(−0.79)	
Asia including Japan	6.69	2.91	−0.02	0.01	0.12	−0.05	−0.01	0.01	0.02	0.29	0.11	0.00	0.00	0.65
	(2.19)	(1.46)	(−0.36)	(0.13)	(1.44)	(−0.36)	(−0.95)	(1.31)	(1.39)	(5.87)	(2.72)	(0.93)	(−0.21)	
Japan only	6.73	3.92	−0.04	0.05	0.02	0.01	−0.01	0.01	0.00	0.00	0.22	0.00	0.00	0.52
	(3.04)	(2.32)	(−0.86)	(1.15)	(0.25)	(0.11)	(−0.81)	(0.79)	(−0.05)	(−0.10)	(6.64)	(2.59)	(2.05)	
Australia/New Zealand	13.46	9.52	0.20	0.08	0.09	0.21	0.02	−0.01	−0.01	0.07	0.05	0.00	0.00	0.51
	(4.87)	(4.54)	(3.36)	(1.44)	(1.06)	(1.40)	(1.90)	(−0.94)	(−0.75)	(1.30)	(1.14)	(0.43)	(−0.26)	
Emerging Markets	14.74	9.10	0.21	0.07	0.41	−0.09	−0.01	0.02	0.03	0.40	0.03	0.00	0.00	0.77
	(3.29)	(3.90)	(3.17)	(1.25)	(4.28)	(−0.57)	(−1.05)	(1.46)	(1.80)	(6.92)	(0.63)	(1.60)	(−1.66)	

Hedge fund portfolio performance is estimated relative to the augmented Fung and Hsieh (2004) factors for equity long/short funds. The augmented Fung and Hsieh (2004) factors are S&P 500 return minus the risk-free rate (*SNPMRF*), Wilshire small cap minus large cap return (*SCMLC*), change in the constant maturity yield of the U.S. ten-year Treasury bond adjusted for the duration of the ten-year bond (*BD10RET*), change in the spread of Moody's BAA bond over ten-year Treasury bond appropriately adjusted for duration (*BAAMTSY*), bond PTFS (*PTFSBD*), currency PTFS (*PTFSFX*), commodities PTFS (*PTFSCOM*), MSCI Asia ex Japan index return minus the risk-free rate (*ASIAMRF*), Nikkei 225 index return minus the risk-free rate (*JAPMRF*), the Nikkei 225 out-of-the-money call option factor (*OTMC*), and the Nikkei 225 out-of-the-money put option factor (*OTMP*), where PTFS is primitive trend-following strategy. The sample period is from January 2000 to June 2006.

Hence,

$$\begin{aligned} ALPHA_{im} \equiv r_{im} - (& b_{iM}\, SNPMRF_m + c_{iM}\, SCMLC_m + d_{iM}\, BD10RET_m \\ & + e_{iM}\, BAAMTSY_m + f_{iM}\, PTFSBD_m + g_{iM}\, PTFSFX_m \\ & + h_{iM}\, PTFSCOM_m + j_{iM}\, ASIAMRF_m + k_{iM}\, JAPMRF_m \\ & + o_{iM}\, OTMC_m + p_{iM}\, OTMP_m), \end{aligned} \tag{2}$$

where $i = 1, \ldots, nfunds$, $m = 1, \ldots, M$, $ALPHA_{im}$ is the abnormal return of fund i for month m, r_{im} is fund return in excess of the risk-free rate, and the other variables are as defined in Section 2.

Then, I estimate the following pooled OLS regressions:

$$ALPHA_{im} = a + bPRESENCE_i + \sum_{y=1}^{Y-1} d^y\, YRDUM_m^y + \varepsilon_{im}, \tag{3}$$

and

$$\begin{aligned} ALPHA_{im} = a + & bPRESENCE_i + cPERFFEE_i + dMGTFEE_i \\ & + eREDEMP_i + fMININV_i + gFUNDSIZE_i \\ & + \sum_{y=1}^{Y-1} h^y\, YRDUM_m^y + \varepsilon_{im}, \end{aligned} \tag{4}$$

where *PRESENCE* is investment region presence, *PERFFEE* is fund performance fee, *MGTFEE* is fund management fee, *REDEMP* is fund redemption period, *MININV* is minimum investment amount, *FUNDSIZE* is fund size or assets under management (henceforth AUM), and *YRDUM* is the year dummy. Fund fees and minimum investments may proxy for managerial ability since anecdotal evidence suggests that skilled managers often demand high fees and minimum investments[10] so as to extract rents from investors. Fund size may proxy for the level of resources available to managers. However, the decreasing returns to scale argument advanced in Goetzmann, Ingersoll, and Ross (2003); Berk and Green (2004); and Fung et al. (2008) may apply instead. Finally, as argued by Aragon (2007), funds with longer redemption periods may take on greater liquidity risk and achieve higher expected returns. To facilitate the estimation of fund alpha, I only include results for funds with at least twenty-four months of return data.[11]

[10] For instance, James Simons' extremely successful Renaissance Technologies Medallion fund charges a management fee of 5% and a performance fee of 44% ("Really Big Bucks," *Alpha Magazine*, May 2006).

[11] Similar results are obtained for funds with at least 36 months of return data. Results are available upon request.

Table 4
Cross-sectional regressions on hedge fund performance

Independent variables	Dependent variables: Monthly return		Monthly alpha		Backfill and incubation bias adjusted alpha		Alpha from unsmoothed returns		Pre-fee alpha	
Panel A: Pooled OLS regressions										
Investment region presence	0.40**	0.52**	0.22**	0.31**	0.29**	0.40**	0.21**	0.29**	0.32**	0.45**
	(5.23)	(6.57)	(3.79)	(5.10)	(4.04)	(5.36)	(3.31)	(4.53)	(5.35)	(7.12)
Management fee (%)		0.34**		0.26**		0.23*		0.25**		0.43**
		(3.39)		(3.36)		(2.56)		(3.03)		(5.34)
Performance fee (%)		−0.08**		−0.03**		−0.01		−0.03**		−0.03*
		(−4.26)		(−2.82)		(−0.89)		(−2.62)		(−2.58)
Redemption period (days)		0.00*		0.00		0.00		0.00		0.00
		(2.15)		(0.48)		(1.38)		(0.38)		(1.25)
Minimum investment (US$m)		0.00		0.00		0.01**		0.00		0.00
		(−0.30)		(0.88)		(3.27)		(0.97)		(0.44)
Fund size (US$bn)		0.87**		0.73**		0.77**		0.73**		0.95**
		(7.42)		(9.10)		(8.43)		(8.52)		(11.49)
Panel B: Fama-MacBeth (1973) cross-sectional regressions										
Investment region presence	0.36*	0.49*	0.32*	0.41**	0.34*	0.47**	0.31*	0.40**	0.42**	0.54**
	(2.03)	(2.31)	(2.40)	(2.87)	(2.50)	(2.90)	(2.20)	(2.62)	(3.05)	(3.70)
Management fee (%)		0.45*		0.46**		0.55**		0.45**		0.63**
		(2.58)		(2.85)		(2.65)		(2.63)		(3.88)
Performance fee (%)		−0.05		−0.03*		−0.04*		−0.03*		−0.03*
		(−1.92)		(−2.26)		(−2.42)		(−2.13)		(−2.09)
Redemption period (days)		0.00		0.00		0.01		0.00		0.00
		(1.35)		(1.09)		(1.69)		(0.98)		(1.63)
Minimum investment (US$m)		−0.01		−0.01		0.00		−0.01		−0.02
		(−0.23)		(−0.29)		(0.00)		(−0.18)		(−0.53)
Fund size (US$bn)		0.83**		0.76**		0.78**		0.76**		0.97**
		(5.54)		(6.29)		(5.53)		(5.74)		(7.86)

Pooled OLS regressions and Fama and MacBeth (1973) regressions are estimated on the cross-section of hedge fund performance. The dependent variable is hedge fund monthly return or monthly alpha measured relative to the augmented Fung and Hsieh (2004) factors. The augmented Fung and Hsieh (2004) factors are S&P 500 return minus the risk-free rate (*SNPMRF*), Wilshire small cap minus large cap return (*SCMLC*), change in the constant maturity yield of the U.S. ten-year Treasury bond adjusted for the duration of the ten-year bond (*BD10RET*), change in the spread of Moody's BAA bond over ten-year Treasury bond appropriately adjusted for duration (*BAAMTSY*), bond PTFS (*PTFSBD*), currency PTFS (*PTFSFX*), and commodities PTFS (*PTFSCOM*), MSCI Asia ex Japan index return minus the risk-free rate (*ASIAMRF*), the Nikkei 225 index return minus the risk-free rate (*JAPMRF*), the Nikkei 225 out-of-the-money call option factor (*OTMC*), and the Nikkei 225 out-of-the-money put option factor (*OTMP*), where PTFS is primitive trend-following strategy. The independent variables are hedge fund characteristics such as management fee, performance fee, redemption notification period, minimum investment, fund size, and investment region presence. Investment region presence is an indicator variable that equals 1 when the fund has a physical presence (head office or research office) in the geographical region it invests in and equals 0 otherwise. The *t*-statistics derived from White (1980) standard errors, are in parentheses. The OLS regressions (panel A) also include year dummies. The coefficient estimates on the dummies are omitted for brevity. The sample period is from January 2000 to June 2006. *Significant at the 5% level; **significant at the 1% level.

The results presented in columns 3 and 4 in panel A of Table 4 are striking. The coefficient estimate on the investment region presence variable in the univariate regression (column 3 of panel A, Table 4) suggests that funds with a physical or research presence in their investment region outperform other funds by a risk-adjusted 22 basis points per month or 2.64% per year. After adjusting for the other hedge fund characteristics, the overperformance of funds with investment region presence increases to 3.72% per year. Both these effects are statistically significant at the 1% level (t-statistics = 3.79 and 5.10, respectively). In contrast, the other fund characteristics, save management fee and fund size, do not seem to explain fund alpha. The explanatory power of fund size, which is measured at the end of the sample, may simply reflect the positive relationship between performance and subsequent fund inflow (Agarwal, Daniel, and Naik 2008).[12] Fund fees may be positively associated with risk-adjusted return because good managers (particularly those who have closed their successful funds and started new ones) may charge higher fees to extract more rents from investors. Agarwal, Daniel, and Naik (2008) document a similar relationship. They find that, among hedge funds, persistent winners have higher management fees than persistent losers.

There are concerns that the results may be due to differences in the way backfill and incubation bias affect funds with and without investment region presence. If funds with investment region presence backfill or incubate their returns more often than funds without investment region presence, it may explain the overperformance of the former group of funds. Also, there are concerns that funds with investment region presence may trade more illiquid securities. As a result, for these funds, reported returns tend to be smoother than true economic returns, which understates volatility and overstates the statistical significance of risk-adjusted measures like alpha. To address such concerns, I re-estimate the regressions with backfill and incubation bias-adjusted alpha and with alpha derived from unsmoothed returns using the Getmansky, Lo, and Makarov (2004) correction.[13] As in the previous section, to adjust for backfill and incubation bias, I simply remove the first twelve months of return data from each fund and redo the alpha estimation for funds with at least twenty-four months of remaining return data. Lastly, to ensure that the overperformance of funds with investment region presence is not simply due to lower fees, I also redo the analysis on pre-fee[14] alpha. The results from this robustness analysis are presented in columns 3–8 of panel A, Table 4, and suggest that the overperformance of hedge funds with investment region presence is not simply an artifact of backfill bias, incubation bias, illiquidity, or lower fund fees. The coefficient estimates on the investment region presence variable are statistically and economically significant for all specifications and for both the univariate and multivariate regressions. Since hedge funds claim to focus on absolute returns, it is important to show that the results hold for raw returns

[12] I redo the regressions with one month lagged AUM instead of ex-post AUM for the funds in Eurekahedge and HFR, which have monthly AUM data, and find a statistically insignificant relationship between fund alpha and lagged monthly AUM. The coefficient estimate on the local presence variable remains statistically significant with the inclusion of lagged monthly AUM.

[13] The average values of θ_0, θ_1, and θ_2 for the Asian equity hedge style reported in their Table 8 are used to effect the correction.

[14] Pre-fee alphas are computed from pre-fee returns. I derive pre-fee returns by taking the high watermark and hurdle rate as the T-bill, and assuming that the returns accrue to a first-year investor in the fund.

as well. The coefficient estimates reported in columns 1 and 2 of Table 4 for the regression on raw returns suggest that the results are not artifacts of the risk-adjustment methodology. Nearby hedge funds outperform distant hedge funds whether one compares raw returns or risk-adjusted returns.

Yet another concern is that the pooled OLS regressions do not take into account cross-correlation in residuals. To alleviate this problem, I also report as robustness checks regressions run using the Fama and MacBeth (1973) method. Specifically, I first run cross-sectional regressions for each month. Then, I report the time series averages of the coefficient estimates and use the time-series standard errors of the average slopes to draw inferences. The Fama-MacBeth methodology is a convenient and conservative way of accounting for potential cross-correlation in residuals. According to Fama and French (2002), Fama-MacBeth standard errors are often two to five times the OLS standard errors from pooled panel regressions that ignore cross-correlation. The coefficient estimates and *t*-statistics from the Fama and MacBeth (1973) regressions reported in panel B of Table 4 strongly corroborate the findings with the pooled OLS regressions. In fact, the coefficient estimates on investment region presence from the Fama-MacBeth regressions are higher than the corresponding estimates from the OLS regressions, at least for the risk-adjusted performance measures. According to the Fama-MacBeth regression coefficient estimates, nearby funds outperform distant funds by 3.84% and 4.92% per year in the univariate and multivariate setting, respectively, after adjusting for risk. Since there are more observations in the later part of the sample period, the larger coefficient estimates from the Fama-MacBeth regressions versus those from the OLS regressions suggest that the overperformance of the nearby funds may have attenuated over time. This is not surprising given that the number of Asia-focused funds located in Asia has grown over the sample period.

3.2 Sorts on hedge fund geography

To further gauge the economic relevance of the apparent local informational advantage, I construct portfolios of funds based on fund investment region presence and compare their risk-adjusted performance. Specifically, I form an equal-weighted portfolio of funds with investment region presence (portfolio A) and an equal-weighted portfolio of funds without it (portfolio B). Then, I measure the performance of the spread between portfolios A and B relative to the augmented Fung and Hsieh (2004) model. The alpha of the spread portfolio represents the value added to hedge fund investors (including funds of funds) of investing in funds with investment region presence and avoiding funds without it.

The results from this exercise are displayed in panel A of Table 5 and show that the strategy of buying funds with investment region presence and avoiding funds without it yields a risk-adjusted return of 5.90% per year (t-statistic $= 2.94$). This suggests that astute hedge fund investors can benefit

Table 5
Sorts on hedge fund investment region presence

Portfolio	Mean returns (pct/year)	Standard deviation	*t*-stat of return	Alpha (pct/year)	*t*-stat of alpha	*SNPMRF*	*SCMLC*	*BD10RET*	*BAAMTSY*	*PTFSBD*	*PTFSFX*	*PTFSCOM*	*ASIAMRF*	*JAPMRF*	*OTMC*	*OTMP*	Adj. R^2
Panel A: Raw returns																	
Portfolio A (with presence)	13.65	8.49	4.10	9.74	4.69	0.10	0.03	0.10	−0.05	0.00	0.01	0.02	0.27	0.06	0.00	0.00	0.67
Portfolio B (no presence)	7.34	6.12	3.06	3.84	2.64	0.01	0.07	0.11	0.00	−0.01	0.01	0.01	0.12	0.17	0.00	0.00	0.70
Spread (A-B)	6.31	5.76	2.80	5.90	2.94	0.10	−0.04	0.00	−0.05	0.01	0.00	0.01	0.15	−0.11	0.00	0.00	0.32
Panel B: Adjusted for backfill and incubation bias																	
Portfolio A (with presence)	13.24	9.78	3.45	8.86	3.82	0.14	0.04	0.15	−0.13	0.00	0.01	0.02	0.33	0.04	0.00	0.00	0.69
Portfolio B (no presence)	6.52	6.65	2.50	3.27	2.07	0.02	0.05	0.09	−0.02	−0.01	0.01	0.01	0.15	0.18	0.00	0.00	0.70
Spread (A-B)	6.72	6.63	2.58	5.60	2.55	0.12	0.00	0.06	−0.11	0.01	0.00	0.01	0.19	−0.14	0.00	−0.01	0.39
Panel C: Adjusted for serial correlation																	
Portfolio A (with presence)	13.55	8.95	3.86	9.62	4.40	0.12	0.04	0.12	−0.06	0.00	0.00	0.02	0.28	0.06	0.00	0.00	0.67
Portfolio B (no presence)	7.25	6.52	2.83	3.72	2.36	0.02	0.08	0.12	−0.01	−0.01	0.01	0.01	0.12	0.18	0.00	0.00	0.69
Spread (A-B)	6.30	6.07	2.65	5.90	2.82	0.11	−0.04	0.00	−0.05	0.01	−0.01	0.01	0.16	−0.12	0.00	0.00	0.33
Panel D: Pre-fee returns																	
Portfolio A (with presence)	18.29	8.65	5.39	14.38	6.70	0.11	0.03	0.09	−0.03	0.00	0.01	0.02	0.27	0.06	0.00	0.00	0.66
Portfolio B (no presence)	10.74	6.24	4.39	7.20	4.86	0.01	0.06	0.11	0.01	−0.01	0.01	0.01	0.12	0.17	0.00	0.00	0.70
Spread (A-B)	7.55	5.92	3.25	7.17	3.43	0.10	−0.03	−0.02	−0.04	0.01	0.00	0.01	0.15	−0.11	0.00	0.00	0.30

Hedge funds are sorted based on whether they have a presence in the geographical region they invest in. Portfolio A is the equal-weighted portfolio of funds with investment region presence. Portfolio B is the equal-weighted portfolio of funds without investment region presence. Alpha is estimated relative to the augmented Fung and Hsieh (2004) factors. The augmented Fung and Hsieh (2004) factors are S&P 500 return minus the risk-free rate (*SNPMRF*), Wilshire small cap minus large cap return (*SCMLC*), change in the constant maturity yield of the U.S. ten-year Treasury bond adjusted for the duration of the ten-year bond (*BD10RET*), change in the spread of Moody's BAA bond over ten-year Treasury bond appropriately adjusted for duration (*BAAMTSY*), bond PTFS (*PTFSBD*), currency PTFS (*PTFSFX*), and commodities PTFS (*PTFSCOM*), MSCI Asia ex Japan index return minus the risk-free rate (*ASIAMRF*), Nikkei 225 index return minus the risk-free rate (*JAPMRF*), the Nikkei 225 out-of-the-money call option factor (*OTMC*), and the Nikkei 225 out-of-the-money put option factor (*OTMP*), where PTFS is primitive trend-following strategy. The sample period is from January 2000 to June 2006.

from the apparent local informational advantage of funds with investment region presence. To be sure, since one cannot short sell hedge funds, I evaluate the performance of the local fund portfolio (portfolio A) after discounting the 1% management fee and 10% performance fee charged by the typical fund of funds. I find that after fees, the hypothetical fund of funds portfolio comprising local hedge funds delivers an alpha of 7.11% per year, which is both economically and statistically significant (t-statistic = 3.41). To check that the spread between the nearby and distant portfolios is not driven by the risk adjustment methodology, I also report results from the t-test of the differences in raw mean returns in Table 5. The raw return spread of 6.31% per year is statistically significant at the 1% level (t-statistic = 2.80).

Consistent with the cross-sectional regression results, the findings are robust to adjustments for backfill and incubation bias, serial correlation in returns, and fund fees. All the spread alphas in panels B, C, and D of Table 5 are comfortably above 5% per year and statistically significant at the 5% level. It is reassuring to note that the portfolio returns (portfolios A and B) are well explained by the augmented Fung and Hsieh (2004) factor model. All of the adjusted R-squares for portfolios A and B are greater than 60%. In addition, the loadings on the Asia ex Japan equity market factor are economically and statistically significant (at the 5% level)[15] for all A and B portfolios, attesting to the explanatory power of the Asia ex Japan equity market factor.

Figure 1 complements the results from Table 5. It illustrates the monthly cumulative average residuals (henceforth CARs) from the portfolio of funds with investment region presence (portfolio A) and the portfolio of funds without it (portfolio B). CAR is the cumulative difference between a portfolio's excess return and its factor loadings (estimated over the entire sample period) multiplied by the augmented Fung and Hsieh (2004) risk factors. The CARs in Figure 1 indicate that portfolio A consistently outperforms portfolio B over the entire sample period and suggest that the effects of investment region presence are not peculiar to a particular year.[16]

To check whether the overperformance of the nearby funds is due to asset selection skills or to market timing abilities, I plot the spread portfolio returns against the excess return on the market for the S&P 500, the MSCI Asia ex Japan, and the Nikkei 225 indices. I find, based on a cubic polynomial fitting, no evidence to suggest that when markets returns are high, spread returns are higher. In fact, there is a concave relationship between spread returns and excess returns on the MSCI Asia ex Japan index, unlike that observed by Chen and Liang (2007) for market timing hedge funds (see their Figure 1). Nearby funds appear to outperform less in up markets and more in down markets. This

[15] The t-statistics on the Asian equity factor loadings are omitted for brevity and are available upon request.

[16] A plot of the cumulative raw returns for the nearby and distant portfolios delivers similar results. The cumulative raw return plot is available upon request.

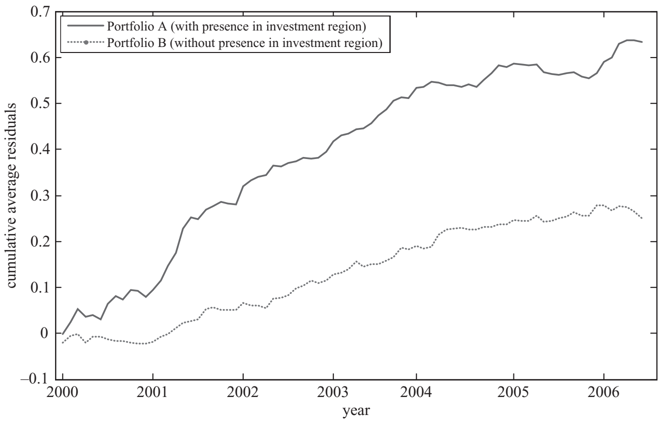

Figure 1
Cumulative average residuals of hedge funds with presence in investment region versus hedge funds without presence in investment region
Equal-weighted portfolios of equity long/short hedge funds are constructed by sorting funds on whether they have a physical presence (head office or research office) in the geographical region they invest in. Cumulative average residual is the difference between a portfolio's excess return and its factor loadings multiplied by the augmented Fung and Hsieh (2004) risk factors. Factor loadings are estimated over the entire sample period. The sample period is from January 2000 to June 2006.

suggests that, relative to the distant funds, nearby funds excel not so much in market timing but rather in selecting the right stocks to buy and short sell.

It will also be interesting to measure separately the alphas for the local headquarters and the local research office portfolios. I find that the portfolio of funds with local headquarters achieves an alpha of 8.92% per year, which is 4.70% per year higher than the portfolio of funds without local headquarters. Since the alpha of the local headquarters portfolio is less than that of portfolio A in panel A, Table 5, it must be that having a local research office helps investment performance for funds that are not headquartered locally. Indeed, the portfolio of funds with a local research office attains an alpha of 10.18% per year. To the extent that fund size is a good proxy for past fund cumulative performance, this is not simply due to the fact that successful funds are more likely to set up local offices ex post. I find, in a Fama-MacBeth multivariate regression setting (analogous to panel B, Table 4), that both the indicator variable for a local headquarters and that for a local research office have statistically significant explanatory power on the cross-section of fund alpha after controlling for ex post fund size.

There are concerns that the overperformance of the nearby portfolio may be mechanically driven by nearby funds' greater use of leverage. To check, I compute the information ratio (alpha divided by tracking error) of the portfolios in panel A of Table 5. The annualized information ratios for portfolio A, portfolio B, and the spread are 2.14, 1.20, and 1.34, respectively. Since the information ratio adjusts for the additional volatility that leverage induces, the superior information ratio of the nearby portfolio indicates that its overperformance is not due simply to leverage.

Yet another concern is that the results may be a byproduct of pseudo cross-region effects. Suppose funds investing in region A consistently outperform, on a risk-adjusted basis, funds investing in region B. In addition, funds investing in region A typically have offices in region A while funds investing in region B typically do not set up local offices. Then, this could generate the results in Tables 4 and 5 even though no local informational advantage exists. Related to this, Table 1 indicates that all funds investing in Australia/New Zealand almost always have a presence in those markets. Instead of a local informational advantage, the results may well be capturing the overperformance of funds investing in Australia/New Zealand and the underperformance of funds investing elsewhere.

Moreover, if the overperformance of funds with investment region presence stems from a local informational advantage, then it must be that the overperformance is greater for regions where firms disclose less public information and where the local informational advantage is large. Extant research has shown that the local/foreign informational asymmetry is particularly severe in emerging markets (Choe, Kho, and Stulz 2005; Dovrak 2005; Bae, Stulz, and Tan 2008). Hence, one expects the overperformance of funds with investment region presence to be greater for emerging markets than for other regions.

To address these issues, I break down the analysis in Table 5 by geographical region for regions (excluding Australia/New Zealand) with more than forty funds. The results in Table 6 clearly indicate that the overperformance of funds with investment region presence is not driven by pseudo cross-region effects. For each major geographical region, funds with investment region presence outperform funds without it. The alpha for the spread portfolio is consistently above 2.80% per year for all four investment regions. With the reduced sample size, some of the within region spread alphas are no longer statistically significant. Nonetheless, the spread alphas for Asia excluding Japan and for emerging markets are statistically significant at the 10% level. Indeed, the spread alpha is highest for emerging markets (9.97% per year). This dovetails with the a priori intuition that the local informational advantage should be strongest in emerging markets, where firms disclose less public information.

One can argue that another group of stocks where less information is disclosed is illiquid stocks. Because illiquid stocks are thinly traded there is less price revelation. Moreover, many illiquid stocks are small stocks with little analyst coverage. Hence, illiquid stocks appear to be a good place to search for effects of a local information advantage. To proxy for funds with high exposure to illiquid stocks, I follow Aragon (2007) and use fund share restrictions. In the spirit of Aragon (2007), I take the presence of a low redemption frequency, a lengthy redemption notice period, and a lock-up period as indicators of fund exposure to illiquid stocks. Then, I compare the risk-adjusted performance of the spread between nearby and distant funds with such share restrictions to that

Table 6
Sorts on hedge fund investment region presence by investment region

Portfolio	Mean returns (pct/year)	Standard deviation	Alpha (pct/year)	*t*-stat of alpha	*SNPMRF*	*SCMLC*	*BD10RET*	*BAAMTSY*	*PTFSBD*	*PTFSFX*	*PTFSCOM*	*ASIAMRF*	*JAPMRF*	*OTMC*	*OTMP*	Adj. R^2
Panel A: Asia excluding Japan (105 funds)																
Portfolio A (with presence)	14.94	11.44	11.21	3.47	0.06	0.04	0.07	−0.04	0.00	0.01	0.03	0.37	0.08	0.00	0.00	0.56
Portfolio B (no presence)	9.85	8.47	5.34	2.03	−0.05	−0.02	0.01	0.17	0.01	0.02	0.00	0.31	0.02	0.00	0.00	0.48
Spread (A-B)	5.09	8.16	5.87	1.75	0.11	0.06	0.07	−0.21	0.00	−0.02	0.03	0.05	0.07	0.00	0.00	0.06
Panel B: Asia including Japan (120 funds)																
Portfolio A (with presence)	8.14	7.91	4.54	2.20	0.01	−0.04	0.10	−0.07	−0.01	0.02	0.01	0.27	0.13	0.00	0.00	0.63
Portfolio B (no presence)	5.15	8.44	1.36	0.57	−0.05	0.05	0.12	−0.06	−0.01	0.01	0.03	0.31	0.08	0.00	0.00	0.57
Spread (A-B)	2.99	5.04	3.18	1.51	0.06	−0.09	−0.02	−0.01	0.00	0.01	−0.02	−0.05	0.05	0.00	0.00	0.03
Panel C: Japan only (296 funds)																
Portfolio A (with presence)	9.22	7.83	6.66	2.10	−0.04	−0.06	0.00	−0.13	−0.03	−0.02	0.02	−0.03	0.13	0.00	0.00	0.11
Portfolio B (no presence)	6.59	5.70	3.77	2.22	−0.04	0.05	0.02	0.02	−0.01	0.01	0.00	0.00	0.22	0.00	0.00	0.52
Spread (A-B)	2.63	7.67	2.89	0.94	0.01	−0.11	−0.02	−0.15	−0.02	−0.02	0.02	−0.02	−0.09	0.00	−0.01	0.11
Panel D: Emerging Markets (43 funds)																
Portfolio A (with presence)	23.41	17.00	17.01	3.18	0.32	−0.08	0.62	0.05	−0.01	0.02	0.02	0.43	−0.03	0.01	−0.01	0.45
Portfolio B (no presence)	12.70	10.90	7.04	3.44	0.18	0.14	0.36	−0.11	−0.02	0.02	0.04	0.38	0.04	0.00	0.00	0.81
Spread (A-B)	10.72	12.08	9.97	2.02	0.14	−0.22	0.25	0.16	0.01	0.01	−0.01	0.04	−0.07	0.00	−0.01	0.07

Hedge funds are sorted based on whether they have a presence in the geographical region they invest in. Portfolio A is the equal-weighted portfolio of funds with investment region presence. Portfolio B is the equal-weighted portfolio of funds without investment region presence. Alpha is estimated relative to the augmented Fung and Hsieh (2004) factors. The augmented Fung and Hsieh (2004) factors are S&P 500 return minus the risk-free rate (*SNPMRF*), Wilshire small cap minus large cap return (*SCMLC*), change in the constant maturity yield of the U.S. ten-year Treasury bond adjusted for the duration of the ten-year bond (*BD10RET*), change in the spread of Moody's BAA bond over ten-year Treasury bond appropriately adjusted for duration (*BAAMTSY*), bond PTFS (*PTFSBD*), currency PTFS (*PTFSFX*), and commodities PTFS (*PTFSCOM*), MSCI Asia ex Japan index return minus the risk-free rate (*ASIAMRF*), Nikkei 225 index return minus the risk-free rate (*JAPMRF*), the Nikkei 225 out-of-the-money call option factor (*OTMC*), and the Nikkei 225 out-of-the-money put option factor (*OTMP*), where PTFS is primitive trend-following strategy. The sample period is from January 2000 to June 2006.

for funds without such share restrictions. The results in Table 7 broadly support the view that the effects of a local information advantage are amplified for funds trading illiquid stocks. Nearby funds with low redemption frequencies, lengthy redemption notice periods, and lock-up periods strongly outperform distant funds with similar share restrictions. Conversely, nearby funds without such share restrictions only modestly outperform similarly liquid distant funds. For example, nearby funds with a long redemption notice period (fund redemption notice period greater than the median redemption notice period of thirty days) outperform distant funds with a long redemption notice period by 11.18% per year after adjusting for return covariation with the augmented Fung and Hsieh (2004) factors. In contrast, nearby funds with a short redemption notice period only outperform distant funds with a short redemption notice period by 4.68% per year after adjusting for risk.

The results in Table 6 remain qualitatively unchanged when I apply the Getmansky, Lo, and Makarov (2004) correction for illiquidity-induced serial correlation. To the extent that the aforementioned correction adjusts for illiquidity exposure, the results do not imply that the nearby hedge funds are trading on a stock illiquidity premium. Rather, they suggest that within the group of funds that do trade illiquid stocks, nearby funds perform significantly better than distant funds.

I focus on equal-weighted portfolios as opposed to value-weighted portfolios as hedge fund AUM data are more prone to reporting errors than are hedge fund return data. Moreover, Asiahedge does not provide monthly AUM data. Nonetheless, I also compute the value-weighted version of the spread reported in panel A of Table 5. Because all funds in Asiahedge do not report monthly AUM data and not all funds in Eurekahedge and HFR report monthly AUM data, this reduces the number of funds in the portfolios by about 31%. The value-weighted alpha spread is 5.05% per year and is statistically significant at the 5% level (t-statistic $= 1.99$). It is not surprising that the spread in the value-weighted analysis is lower than that for the equal-weighted analysis. Funds that invest in smaller, less liquid, emerging market securities are most likely to benefit from any local informational advantage since the information flow for these securities is low (see panel D of Tables 6 and 7). Constrained by the nature of their investments, such funds are also likely to deploy less capital.

The analysis thus far has centered on comparing the risk-adjusted returns of funds with and without investment region presence. One can fine-tune the analysis further for funds investing in narrowly defined geographical regions, such as Japan. Specifically, there are many Japan-focused funds that are based in the nearby Asian financial hubs of Tokyo, Hong Kong, Singapore, and Sydney. Yet at the same time there are also Japan-focused funds that operate from faraway financial centers, such as the United States and the United Kingdom. It will be interesting to compare the performance of Japan funds based in the nearby Asian financial centers to the performance of Japan funds based in the distant U.S. and U.K. financial centers. In that effort, I construct portfolios

Table 7
Sorts on hedge fund investment region presence for funds stratified by share restrictions

Portfolio	Mean returns (pct/year)	Standard deviation	Alpha (pct/year)	t-stat of alpha	*SNPMRF*	*SCMLC*	*BD10RET*	*BAAMTSY*	*PTFSBD*	*PTFSFX*	*PTFSCOM*	*ASIAMRF*	*JAPMRF*	*OTMC*	*OTMP*	Adj. R^2
Panel A: Redemption frequency																
Funds with high redemption frequency, spread	3.71	6.83	3.13	1.54	0.09	−0.11	0.03	−0.05	0.01	0.00	0.00	0.23	−0.11	0.00	−0.01	0.50
Funds with low redemption frequency, spread	14.54	11.67	13.59	2.83	0.25	0.40	−0.01	−0.45	0.00	−0.04	0.04	−0.14	−0.17	0.00	0.00	0.06
Panel B: Redemption notice period																
Funds with short notice period, spread	5.65	6.35	4.68	2.14	0.12	0.01	0.00	−0.03	0.01	−0.01	0.01	0.15	−0.12	0.00	0.00	0.34
Funds with long notice period, spread	8.80	12.09	11.18	2.67	0.06	−0.44	0.19	−0.54	0.02	0.03	−0.03	0.36	−0.08	0.00	−0.01	0.33
Panel C: Lock-up period																
Funds with no lock-up period, spread	5.41	6.42	4.93	2.36	0.11	−0.05	0.03	−0.09	0.01	0.00	0.00	0.19	−0.10	0.00	0.00	0.41
Funds with lock-up period, spread	10.12	7.51	10.60	3.44	−0.06	−0.05	−0.22	0.17	0.00	0.00	0.03	−0.03	−0.10	0.00	0.00	0.06

Hedge funds are sorted based on whether they have a presence in the geographical region they invest in. The spread portfolio is the difference between the equal-weighted portfolio of funds with investment region presence and the equal-weighted portfolio of funds without investment region presence. Alpha is estimated relative to the augmented Fung and Hsieh (2004) factors. The augmented Fung and Hsieh (2004) factors are S&P 500 return minus the risk-free rate (*SNPMRF*), Wilshire small cap minus large cap return (*SCMLC*), change in the constant maturity yield of the U.S. ten-year Treasury bond adjusted for the duration of the ten-year bond (*BD10RET*), change in the spread of Moody's BAA bond over ten-year Treasury bond appropriately adjusted for duration (*BAAMTSY*), bond PTFS (*PTFSBD*), currency PTFS (*PTFSFX*), and commodities PTFS (*PTFSCOM*), MSCI Asia ex Japan index return minus the risk-free rate (*ASIAMRF*), Nikkei 225 index return minus the risk-free rate (*JAPMRF*), the Nikkei 225 out-of-the-money call option factor (*OTMC*), and the Nikkei 225 out-of-the-money put option factor (*OTMP*), where PTFS is primitive trend-following strategy. In panel A, funds are further sorted based on whether they have a low or high redemption frequency, relative to the median fund. A fund is defined as having a high redemption frequency if its redemption frequency is higher than the median fund redemption frequency. Otherwise, it is classified as having a low redemption frequency. In panel B, funds are further sorted based on whether they have a short or long redemption notice period relative to the median fund. A fund is defined as having a long notice period if its notice period is greater than the median notice period. Otherwise, it is classified as having a short notice period. In panel C, funds are further sorted based on whether they impose a lock-up period. The sample period is from January 2000 to June 2006.

of Japan-focused hedge funds based on where their headquarters are located. I do so for funds located in Japan, Hong Kong, Singapore, Australia, the United States, and the United Kingdom. Next, I evaluate the spread between the nearby[17] portfolios (funds based in Japan, Hong Kong, Singapore, and Australia) with the distant portfolios (funds based in the United States and the United Kingdom). The results reported in Table 8 suggest that Japan funds based in each of the four nearby Asian hubs outperform Japan funds based in the United States and the United Kingdom. The risk-adjusted spreads between the Asia-based fund portfolios and the combined U.S. and U.K. fund portfolio range from 2.25% per year to 11.70% per year and are statistically significant at the 5% level for Singapore- and Australia-based funds. This provides additional evidence to suggest that local information is helpful to hedge fund investment performance.

4. Distance and Hedge Fund Performance

Ostensibly, the message in this article has been that geographical distance matters to the performance of hedge funds. Yet, geographical distance is but one example of the different measures of distance that could potentially capture information asymmetry and hence affect investment performance. One can speak to the broader notion of distance by examining the effects of other measures of distance on the investment performance of hedge funds.

An example of distance is that defined by language. Fund managers who are native speakers in their investment markets are closer to their investments than fund managers who are non-native speakers. This is particularly relevant in markets like Japan where many people only speak the native language. Just as I have compared the difference in performance between nearby and distant funds, I can compare the performance of the native speakers with the performance of the non-native speakers.

In Table 9, I compare the performance of native speakers versus non-native speakers among Japan-focused funds. I classify funds with at least one native Japanese-speaking manager as native speakers, and all other funds as non-native speakers. I assume that all fund managers with Japanese names are native speakers. The sort results with this language-based distance measure echo those with the geography-based distance measure. I find that native-speaking fund managers outperform non-native-speaking fund managers in the Japanese markets by 4.93% per year after adjusting for risk. The two-pass sorts on geographical distance and language distance indicate that if you are a non-native speaker, it is very helpful to be geographically nearby, and if you are a geographically distant fund, it is highly advantageous to be a native speaker. See spread E–F and spread D–F in panel B of Table 9, which

[17] Hitherto, Japan-focused funds based in Singapore, Hong Kong, or Australia, and who do not have a research office in Tokyo, have been classified as distant funds.

Table 8
Sorts on hedge fund location for Japan-focused funds

Portfolio	Mean returns (pct/year)	Standard deviation	Alpha (pct/year)	t-stat of alpha	*SNPMRF*	*SCMLC*	*BD10RET*	*BAAMTSY*	*PTFSBD*	*PTFSFX*	*PTFSCOM*	*ASIAMRF*	*JAPMRF*	*OTMC*	*OTMP*	Adj. R^2
Panel A: Nearby funds																
Portfolio A1 (Japan based)	7.59	5.18	4.59	2.76	−0.02	0.08	−0.03	−0.09	0.00	0.00	0.00	−0.03	0.19	0.00	0.00	0.44
Portfolio A2 (Hong Kong based)	6.75	6.06	4.46	2.18	−0.02	−0.02	0.04	−0.02	−0.02	0.01	0.02	0.03	0.19	0.00	0.00	0.39
Portfolio A3 (Singapore based)	15.75	12.39	13.91	2.71	0.03	0.00	−0.04	0.19	−0.03	0.02	−0.01	−0.22	0.17	0.01	0.01	0.03
Portfolio A4 (Australia based)	9.89	11.60	8.52	2.48	0.06	0.04	0.09	−0.11	0.00	0.03	−0.01	0.00	0.43	0.01	0.01	0.51
Portfolio A5 (JP/HK/SG/AU based)	8.24	6.28	5.99	3.06	0.01	0.03	0.02	−0.05	−0.01	0.01	0.00	−0.02	0.24	0.00	0.00	0.47
Panel B: Distant funds																
Portfolio B1 (US based)	5.88	6.24	2.48	1.24	−0.02	0.05	0.06	−0.07	−0.01	0.00	0.00	0.00	0.21	0.00	0.00	0.45
Portfolio B2 (UK based)	5.56	6.25	2.19	1.09	−0.12	0.08	−0.09	0.22	−0.02	0.01	0.00	−0.03	0.21	0.00	0.00	0.43
Portfolio B3 (USA/UK based)	5.52	5.63	2.21	1.32	−0.07	0.07	−0.01	0.06	−0.01	0.01	0.00	−0.01	0.22	0.00	0.00	0.53
Panel C: Nearby-distant fund spreads																
Spread A1-B3	2.07	3.61	2.38	1.57	0.05	0.02	−0.02	−0.14	0.01	−0.01	0.00	−0.02	−0.03	0.00	0.00	0.01
Spread A2-B3	1.24	3.48	2.25	1.61	0.05	−0.09	0.05	−0.08	0.00	0.00	0.02	0.05	−0.03	0.00	0.00	0.10
Spread A3-B3	10.24	11.71	11.70	2.43	0.11	−0.07	−0.03	0.14	−0.02	0.01	−0.01	−0.20	−0.06	0.00	0.01	0.06
Spread A4-B3	4.37	7.95	6.30	2.31	0.13	−0.02	0.10	−0.16	0.01	0.02	−0.01	0.01	0.21	0.00	0.01	0.34
Spread A5-B3	2.72	3.24	3.78	2.82	0.08	−0.04	0.03	−0.10	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.04

Japan-focused equity long/short hedge funds are sorted based on the location of their main office. Portfolio A is the equal-weighted portfolio of nearby funds. Portfolio B is the equal-weighted portfolio of distant funds. Alpha is estimated relative to the augmented Fung and Hsieh (2004) factors. The augmented Fung and Hsieh (2004) factors are S&P 500 return minus the risk-free rate (*SNPMRF*), Wilshire small cap minus large cap return (*SCMLC*), change in the constant maturity yield of the U.S. ten-year Treasury bond adjusted for the duration of the ten-year bond (*BD10RET*), change in the spread of Moody's BAA bond over ten-year Treasury bond appropriately adjusted for duration (*BAAMTSY*), bond PTFS (*PTFSBD*), currency PTFS (*PTFSFX*), and commodities PTFS (*PTFSCOM*), MSCI Asia ex Japan index return minus the risk-free rate (*ASIAMRF*), Nikkei 225 index return minus the risk-free rate (*JAPMRF*), the Nikkei 225 out-of-the-money call option factor (*OTMC*), and the Nikkei 225 out-of-the-money put option factor (*OTMP*), where PTFS is primitive trend-following strategy. The sample period is from January 2000 to June 2006.

Table 9
Sorts on native versus non-native-speaking Japanese fund managers

Portfolio	Mean returns (pct/year)	Standard deviation	Alpha (pct/year)	*t*-stat of alpha	*SNPMRF*	*SCMLC*	*BD10RET*	*BAAMTSY*	*PTFSBD*	*PTFSFX*	*PTFSCOM*	*ASIAMRF*	*JAPMRF*	*OTMC*	*OTMP*	Adj. R^2
Panel A: Native vs. non-native Japanese speakers																
Portfolio A (native)	10.79	5.79	8.69	3.98	0.00	0.06	−0.06	−0.08	0.00	0.00	0.00	−0.07	0.17	0.00	0.00	0.21
Portfolio B (nonnative)	6.41	5.84	3.76	2.17	−0.04	0.03	0.03	0.01	−0.01	0.01	0.00	0.00	0.23	0.00	0.00	0.52
Spread A-B	4.39	3.77	4.93	3.30	0.05	0.03	−0.09	−0.09	0.00	−0.01	0.00	−0.07	−0.06	0.00	0.00	0.13
Panel B: Two-pass sort, nearby vs. distant and native vs. non-native Japanese speakers																
Portfolio C (nearby, native)	9.25	5.49	7.16	3.70	0.01	0.06	−0.07	−0.03	0.00	0.00	0.00	−0.07	0.19	0.00	0.00	0.31
Portfolio D (distant, native)	11.25	7.58	8.74	2.73	−0.11	−0.05	−0.07	−0.07	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.03
Portfolio E (nearby, nonnative)	8.28	8.02	6.07	2.52	0.01	0.02	0.10	−0.05	−0.01	0.01	0.01	0.02	0.29	0.00	0.00	0.51
Portfolio F (distant, nonnative)	5.75	5.43	2.89	1.76	−0.07	0.04	−0.03	0.03	−0.01	0.01	−0.01	−0.02	0.23	0.00	0.00	0.51
Spread C-E (nearby, native vs. nonnative)	0.97	5.07	1.09	0.62	0.00	0.04	−0.16	0.02	0.01	−0.01	−0.01	−0.09	−0.10	0.00	0.00	0.32
Spread D-F (distant, native vs.nonnative)	5.50	6.36	5.85	2.28	−0.04	−0.08	−0.04	−0.10	0.00	−0.01	0.00	0.02	−0.11	0.00	0.00	0.09
Spread C-D (nearby vs. distant, native)	−1.99	6.97	−1.58	−0.56	0.12	0.10	0.00	0.04	0.00	0.01	0.00	−0.07	0.07	0.00	0.01	0.07
Spread E-F (nearby vs. distant, nonnative)	2.53	4.37	3.18	1.96	0.08	−0.02	0.13	−0.09	0.00	0.01	0.01	0.04	0.07	0.00	0.00	0.23

Alpha is estimated relative to the augmented Fung and Hsieh (2004) factors. The augmented Fung and Hsieh (2004) factors are S&P 500 return minus the risk-free rate (*SNPMRF*), Wilshire small cap minus large cap return (*SCMLC*), change in the constant maturity yield of the U.S. ten-year Treasury bond adjusted for the duration of the ten-year bond (*BD10RET*), change in the spread of Moody's BAA bond over ten-year Treasury bond appropriately adjusted for duration (*BAAMTSY*), bond PTFS (*PTFSBD*), currency PTFS (*PTFSFX*), and commodities PTFS (*PTFSCOM*), MSCI Asia ex Japan index return minus the risk-free rate (*ASIAMRF*), Nikkei 225 index return minus the risk-free rate (*JAPMRF*), the Nikkei 225 out-of-the-money call option factor (*OTMC*), and the Nikkei 225 out-of-the-money put option factor (*OTMP*), where PTFS is primitive trend-following strategy. The sample period is from January 2000 to June 2006. In panel A, funds are sorted based on the native language of the principal. Native speakers are funds with at least one native Japanese-speaking fund manager. We assume that managers with Japanese names are native speakers. In panel B, we sort funds based on whether they are nearby (based in Japan, Singapore, Hong Kong, and Australia) or distant (based in USA and UK) and on whether their managers are native or non-native speakers.

Table 10
Cross-sectional regressions on fund characteristics

	Independent variable		
Dependent variables	Investment region presence	Investment region head office	Investment region head office (Funds with hq in Asia, the USA, or the UK)
Management fee (%)	−0.059	−0.102**	−0.086**
	(−1.84)	(−3.26)	(−2.74)
Performance fee (%)	0.139	0.263	0.333
	(0.51)	(1.00)	(1.16)
Redemption period (days)	−0.989	−3.001	−4.891*
	(−0.50)	(−1.58)	(−2.35)
Minimum investment (US$m)	−0.383	−0.289	0.066
	(−1.15)	(−0.83)	(0.81)
Fund size (US$bn)	−0.033	−0.046*	−0.059**
	(−1.76)	(−2.48)	(−2.78)

Univariate OLS regressions are estimated on the cross-section of measures of investment region presence. The dependent variables are hedge fund characteristics, such as management fee, performance fee, redemption notification period, minimum investment, and fund size. The independent variable is either investment region presence or investment region head office. Investment region presence is an indicator variable that equals 1 when the fund has a physical presence (head office or research office) in the geographical region it invests in, and equals 0 otherwise. Investment region head office is an indicator variable that equals 1 when the fund has its head office in the geographical region it invests in, and equals 0 otherwise. The rightmost column reports regression coefficient estimates for funds with headquarters in Asia, USA, and UK only. The *t*-statistics derived from White (1980) standard errors are in parentheses. The sample period is from January 2000 to June 2006.
*Significant at the 5% level; **significant at the 1% level.

suggest that geographical distance and language distance are substitutes, insofar as helping fund investment performance is concerned. By speaking the native language, Japan-focused fund managers can tap into local information networks even though they may be geographically distant. Overall, these results linking language to investment performance lend weight to the broad theme of the article, i.e., that hedge funds benefit from being close to their investments.

5. Why Does the Local Informational Advantage Persist?

Why does the overperformance of nearby funds continue to persist over time? In other words, why do all funds not choose to operate from nearby locations given the investment performance advantage of being close by? The answer may lie in the ease of raising capital from distant locations like the United States and the United Kingdom.[18] It is in these countries that the investor base for hedge funds, i.e., large institutions, pension funds, and endowments, resides. Hence, it is plausible that funds continue to operate from such locations to maintain proximity to their investors.

To test this, in Table 10, I estimate univariate OLS regressions on the cross-section of hedge fund characteristics. The explanatory variable is some measure of investment region presence. Specifically, I test for differences in management fees, performance fees, minimum investments, redemption periods, and size for

[18] I thank the anonymous referee for this insightful suggestion.

funds with and without investment region presence, for funds with head offices in nearby versus distant locations, and for funds with head offices in nearby locations versus the United States and the United Kingdom. I focus on head office information when distinguishing between nearby versus distant funds because the head office (as opposed to the research office) is more relevant for capital raising activities. I separately analyze distant funds with head offices in the United States and the United Kingdom because the hedge fund investor base is concentrated in those developed markets.

The coefficient regression estimates in Table 10 suggest that the ease of raising capital explains at least partly why funds continue to operate from distant locations. I find that at the end of the sample period, funds with distant head offices are US$46 million larger than funds with nearby head offices. This difference in size is statistically significant at the 5% level (t-statistic = 2.48) despite the fact that distant funds underperform nearby funds. I note that the average size of the funds in the sample is US$147 million. Consistent with the intuition that U.S.- and U.K.-based funds have better access to capital, the mean size difference between the nearby fund and the U.S. and U.K. distant fund samples is even larger at US$59 million.

Further, funds located in distant regions appear to have greater bargaining power relative to their investors and are able to charge higher fees. Funds with distant head offices charge management fees that are on average ten basis points per year higher than funds with nearby head offices. This difference is statistically significant at the 1% level (t-statistic = 3.26). There is also evidence to suggest that distant funds set longer redemption periods than do nearby funds, at least for nearby versus U.S. and U.K. headquartered funds. These distant funds set redemption periods that are on average almost a week (4.89 business days) longer than those set by nearby headquartered funds.

Overall, the empirical evidence suggests that access to capital is an important consideration for funds located in distant places. A single optimal industry structure for hedge funds is unlikely to exist given the multitude of factors like the ready supply of skilled labor, prime brokerage, and fund administration services that affect hedge fund location. Nonetheless, to satisfy the dual needs of raising capital and improving investment performance, hedge funds may wish to base their head offices in distant locations close to investors, and set up research offices near their investment markets.

6. Conclusion

The results in this article tell a consistent story. Hedge funds with a physical presence in their investment region outperform funds without a physical presence on a risk-adjusted basis. The difference in performance manifests in the cross-section of fund alpha and in fund portfolio sorts. The superior performance of nearby funds is not simply a byproduct of fund fees, backfill bias, incubation bias, or illiquidity. This overperformance is also not due to cross-region effects. Within each major investment region, funds with a local presence outperform other funds. Moreover, the overperformance is exceptionally strong for funds focusing on investment regions (e.g., emerging markets) where the local/foreign information asymmetry is likely to be acute, and for funds trading in stocks (e.g., illiquid stocks), where an informational advantage is likely to matter most. Collectively, these results suggest that nearby hedge funds enjoy a local informational advantage. Going forward, it is unlikely that this local informational advantage will be completely eroded away by an influx of nearby funds. I find that distant funds, especially those based in developed markets, raise more capital and charge higher fees, despite their underperformance. It appears that distant funds trade investment performance for better access to capital.

These results contribute to our understanding of hedge fund alpha and are particularly relevant to fund managers and to fund investors like funds of funds. Moreover, the overperformance of nearby hedge funds provides some justification for the fund of funds' practice of charging a double layer of fees. For funds of funds focused on distant markets, the additional layer of fees allows them to conduct extensive due diligence on hedge funds located in those markets so as to take advantage of the local informational advantage documented in this study.

Finally, the findings resonate with the broader notion that information asymmetry affects investment performance. I find evidence to suggest that language proficiency (as defined by native-speaking ability among fund managers) can also help investment performance. I argue that native speakers are better able to take advantage of information asymmetry. While this article has focused on information asymmetry related to geography, going forward, researchers may find analyzing the effects of other forms of information asymmetry on investment performance fruitful.

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