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Asian Hedge Funds: A Tale of Three Cities

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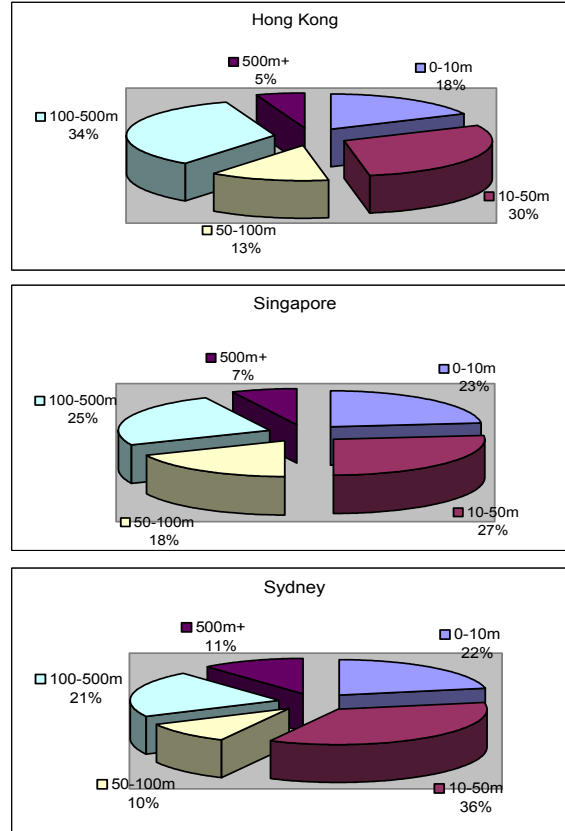*Singapore Management University*, melvynteo@smu.edu.sg

Asian Hedge Funds: A Tale of Three Cities

MELVYN TEO[1]

The hedge fund industry in Asia is dominated by a trio of financial centres: Hong Kong, Singapore, and Sydney. In this inaugural issue of the statistical digest, we provide a broad overview of the hedge fund industry in Asia and zero in on issues relevant to investors. Our analysis will be organized along the lines of manager location. Accordingly, we ask the following questions: How are hedge fund assets deployed across the three centres? What investment strategies do these assets partake in? Does the risk-adjusted performance of those assets differ across centres? To shed light on these issues, we employ fund return, assets under management, and characteristics data from the merged May 2007 Eurekahedge and Asiahedge database[2].

I. SIZE, STYLE, AND INVESTMENT REGION DISTRIBUTION

Figure 1: Size (AUM) distribution of funds

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[2] There are 888 live and dead Asian focused funds (Asia ex Japan, Asia incl Japan, Japan, Australia/New Zealand, Greater China, India, Korea, and Taiwan) in the May 2007 Eurekahedge database. By merging with the Asiahedge database, we include an additional 293 Asian focused funds. The characteristics data, e.g., size and fees, are valid as of April 2007. Future issues of the digest will analyze hedge fund data from other data sources as well.

To get the ball rolling, we plot in Figure 1 the distribution of hedge funds by assets under management[3] (henceforth AUM) for the three financial centres.[4] We group funds into the following US dollar size categories: 0-10m, 10-50m, 50-100m, 100-500m, and 500m+. Clearly from Figure 1, the size distribution is fairly similar across centres. The main difference is that Singapore and Sydney attract a larger proportion of smaller funds (0-10m and 10-50m funds) while Hong Kong draws a larger proportion of bigger funds (100-500m funds). That said, Sydney has the highest proportion of funds in the largest size category (500m+ funds) reflecting the significant variation in the size of hedge funds managed from Sydney. The difference in size distribution between Hong Kong and Singapore hedge funds is consistent with the regulatory differences between the two countries.

Figure 2: Distribution of funds by investment style

Hong Kong

Event Driven 1%
Others 23%
L-S Equities 58%
CTA 2%
Macro 3%
Multi-Strategy 13%

Singapore

Others 31%
L-S Equities 43%
Event Driven 4%
CTA 3%
Macro 9%
Multi-Strategy 10%

Sydney

Others 13%
Event Driven 5%
CTA 13%
L-S Equities 51%
Macro 5%
Multi-Strategy 13%
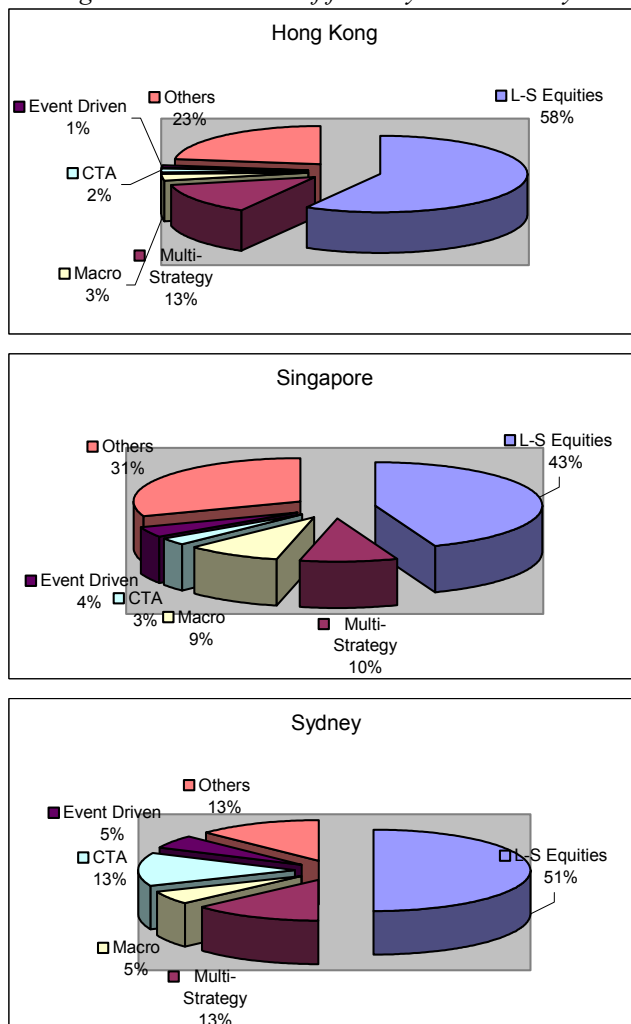
There are also interesting differences in the investment style distribution of funds across centres. In Figure 2, we plot the distribution of hedge funds according to investment style. We find that in Hong Kong, most

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[3] To the extent that funds list on databases for marketing reasons, all commercial databases (including Eurekahedge and Asiahedge) are likely to underestimate the number of very large funds.

[4] We assume that funds managed from Australia are managed from Sydney. In reality funds managed from Australia are located mostly in Sydney and Melbourne. Funds in Sydney comprise about three-quarters of all funds managed from Australia (according to the Asiahedge database). Unlike Asiahedge, Eurekahedge does not include city information in the manager location field.

of the funds (58%) are Equity Long/Short funds. In contrast, there is a greater diversity of funds in Singapore and Sydney. Specifically, Sydney has a preponderance of CTA funds, while Singapore has a disproportionate number of Macro funds. These results reflect the presence of significant opportunities for Equity Long/Short funds in the Greater China market, the importance of commodities to the Australian economy, and the dominance of Singapore as a currency trading hub.

Figure 3: Distribution of funds by investment geography
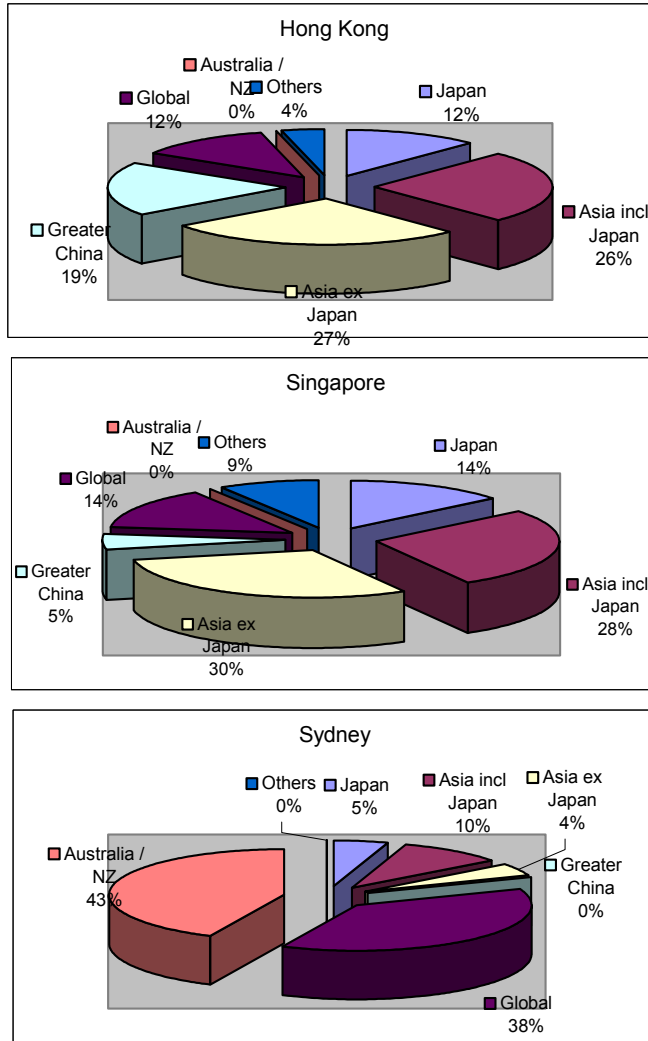
To further investigate their investment opportunity set, we also stratify funds by investment geography. The pie chart in Figure 3 presents the distribution of funds based on the location of their investment markets. Not surprisingly, for geographical proximity reasons, we find that most hedge funds investing in Greater China are managed from Hong Kong and all funds investing in Australia/New Zealand are managed from Sydney. Sydney also has the highest proportion of Global funds (38%) while Singapore has the highest proportion of Japan funds (14%). The higher proportion of Japan funds operating from Singapore versus Hong Kong seems puzzling given the proximity of the latter to Tokyo. One view is that married Japanese expatriates are attracted to the family friendly living conditions in Singapore.

II. FACTOR AND CORRELATION ANALYSIS

Figure 4: Heat map of hedge fund portfolio and principal component R-squares
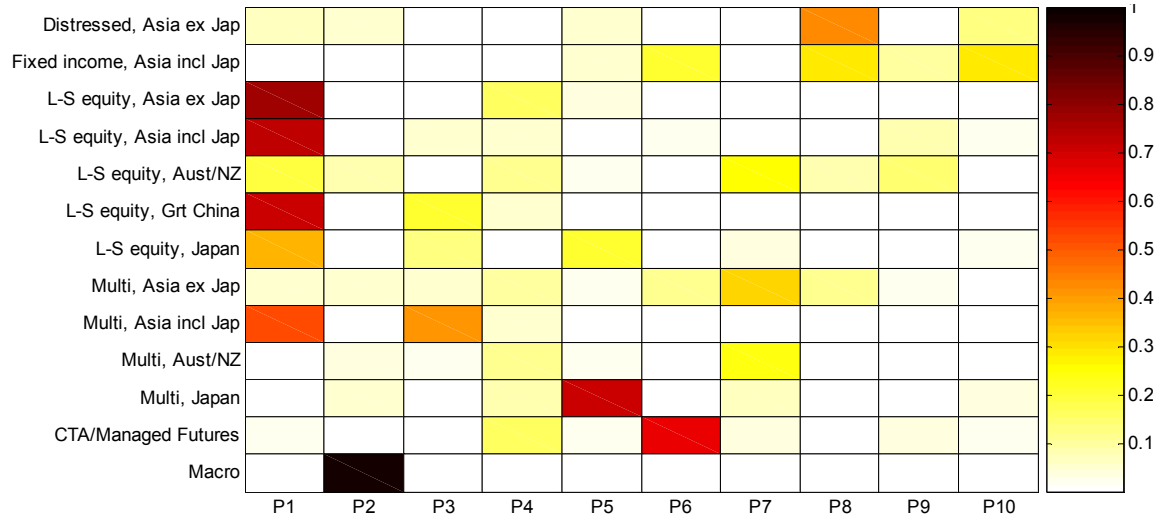

Next we probe deeper and investigate the drivers underlying hedge fund returns and whether those drivers vary for funds operating in the same investment style and geography, but managed from different centres. Principal components analysis is a convenient tool for summarizing the main factors driving portfolio returns. We use principal components analysis to derive the main components or factors driving hedge fund portfolios. To start, the equity-weighted hedge fund portfolios we analyze are investment style and geography intersections (e.g., Equity Long/Short, Asia ex Japan). Altogether we have 11 style and geography intersections with sufficient funds to form portfolios. To these we add the group of CTAs and Macro funds managed from the three centres. With the 13 hedge fund portfolios[5], we can derive 13 principal components or factors.

The heat map in Figure 4 illustrates the R-squares of the top ten components (based on explanatory power) relative to the hedge fund portfolios. That is, the heat map shows how well each component explains the variation in returns for each hedge fund style/geography portfolio in a linear regression setting. A darker cell in Figure 4 indicates that the principal component better explains variation in the corresponding hedge fund portfolio's returns.

The colors of the cells in Figure 4 suggest that return variation in hedge funds is driven more by investment style than investment geography. For instance, the principal component that best explains Equity Long/Short funds is P1 regardless of the geographical region. P2, P6, and P8 are the factors driving Macro, CTA, and distressed funds, respectively. Only multi-strategy funds seem to be explained by a variety of factors corresponding to different investment markets.

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[5] The sample period is from January 1998 to March 2007, unless noted otherwise.

Figure 5: Heat map of hedge fund portfolio and benchmark correlations
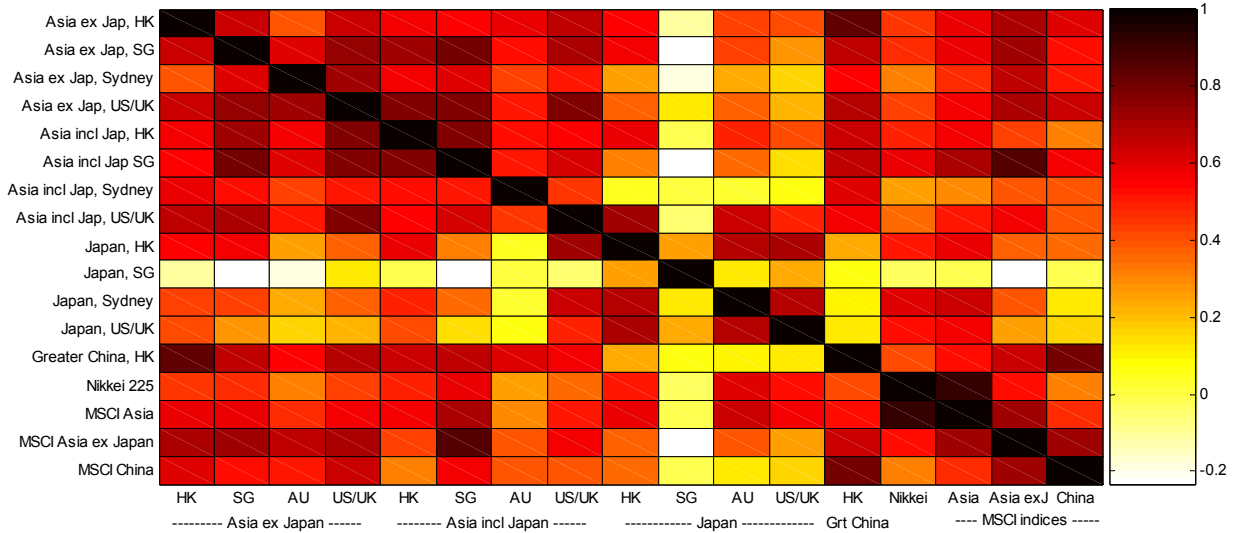
Having analyzed the broad differences in factors across investment style/geography intersections, we now turn to differences *within* those intersections. Given the preponderance of Equity Long/Short funds in the region, we focus on this investment style to ensure that each style/geography/manager location intersection has sufficient funds for the construction of portfolio returns. We report in heat map form the correlations between hedge fund portfolios. We also report the correlations of those portfolios with various equity benchmarks: Nikkei 225, MSCI Asia, MSCI Asia ex Japan, and MSCI China.

The heat map in Figure 5 depicts a rich pattern of correlations. It indicates that Asia ex Japan and Asia incl Japan hedge funds managed from Sydney are less correlated than their hedge fund counterparts managed from Singapore and Hong Kong. The same can be said of Japan hedge funds managed from Singapore. One reason for this, at least for Asia incl Japan hedge funds managed from Sydney and Japan hedge funds managed from Singapore, is that they are less exposed to their corresponding equity markets, i.e., as proxied by the MSCI Asia and Nikkei 225 indices, respectively. Overall, based on the correlations between the Equity Long/Short hedge fund portfolios and equity benchmark returns, Equity Long/Short hedge funds seem fairly well-explained by their respective equity benchmarks. This also suggests that the P1 principal component featured in Figure 4, which well-explains Asian Equity Long/Short style returns, is an Asian equity factor.

III.   PERFORMANCE ANALYSIS

Next, to compare hedge fund alpha of Equity Long/Short funds, we measure performance relative to the corresponding equity indices: Nikkei 225, MSCI Asia, and MSCI Asia ex Japan.[6] We exclude Greater China funds from the analysis since there are no Equity Long/Short Greater China funds in Singapore and Sydney. We also include funds from US/UK to explore the return differential between Asian funds investing from Asia and Asian funds investing from distant locations (US and UK). For robustness, we investigate both the cross-sectional distribution of hedge fund alpha as well as the performance of fund portfolios stripped of their return covariation with equities. [7]

Figure 6 graphs the distribution of fund alpha for Equity Long/Short funds with at least 30 months of return observations. The funds are grouped by manager location. The difference in alphas between nearby (Hong Kong, Singapore, and Sydney) and distant (US and UK) funds is highly suggestive of a local informational advantage. On average Asian Equity Long/Short funds managed from the US/UK underperform Asian Equity Long/Short funds managed from Hong Kong, Singapore, and Sydney by about 6.79% per year or 0.494% per month. This difference is statistically significant at the 1% level. Within Asian managed funds, Hong Kong and Sydney funds seem to deliver somewhat superior performance due to the presence of some stellar funds in the right tail of the alpha distribution. However the difference in performance between Hong Kong (or Sydney) managed funds and Singapore managed funds is statistically insignificant at the 5% level.

Figure 6: Cross-sectional distribution of
*Equity Long/Short fund alpha by manager location*

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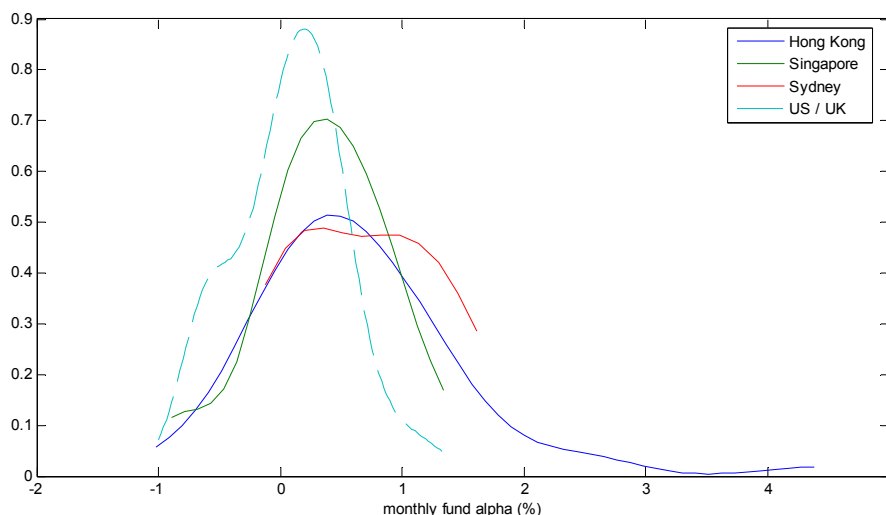
[6] The factor model that we use to adjust for risk is the CAPM. The market factors we use for Japan, Asia ex Japan, and Asia incl Japan funds are the return on the Nikkei 225 Index, the return on the MSCI Asia ex Japan index, and the return on the MSCI Asia index, respectively. To find beta, the excess return on the fund portfolio is regressed on a constant and the excess return on the market. Excess returns are returns in excess of the risk free rate which is taken off Kenneth French's website.

[7] Note that hedge fund returns from databases are likely to be affected by various database induced biases including survivorship bias, backfill bias, incubation bias, and liquidation bias. Since our data samples include both dead and live funds, survivorship bias is minimized. Our results on a local information advantage hold to the extent that these biases affect both the nearby and distant fund portfolios equally.

In Figure 7, we breakdown the analysis by investment geography (Asia ex Japan, Asia incl Japan, and Japan) and plot the cumulative risk-adjusted returns of the style/geography/manager location intersections. We find that the underperformance of US/UK funds persists for all three geographical regions. The equal-weighted portfolio of funds managed from Hong Kong, Singapore, and Sydney outperforms the equal-weighted portfolio of funds managed from the US/UK by 3.90%, 2.22%, and 3.55% per year for funds investing in Asia ex Japan, Asia incl Japan, and Japan, respectively. Further, the difference in means is statistically significant at the 5% level for funds investing in Asia ex Japan and Japan.

Also, within Asia, the over performance of Hong Kong funds is confined to the Asia ex Japan and Asia incl Japan regions. One view is that the geographical proximity of Hong Kong to mainland China allows Asia focused funds in Hong Kong to better take advantage of the attractive investment opportunities in China, a large emerging economy. For example, fund managers based in Hong Kong can better gauge the economic prospects of Chinese firms by visiting upstream (suppliers) and downstream firms (consumers) in China.

Figure 7: Cumulative market-adjusted returns by manager location
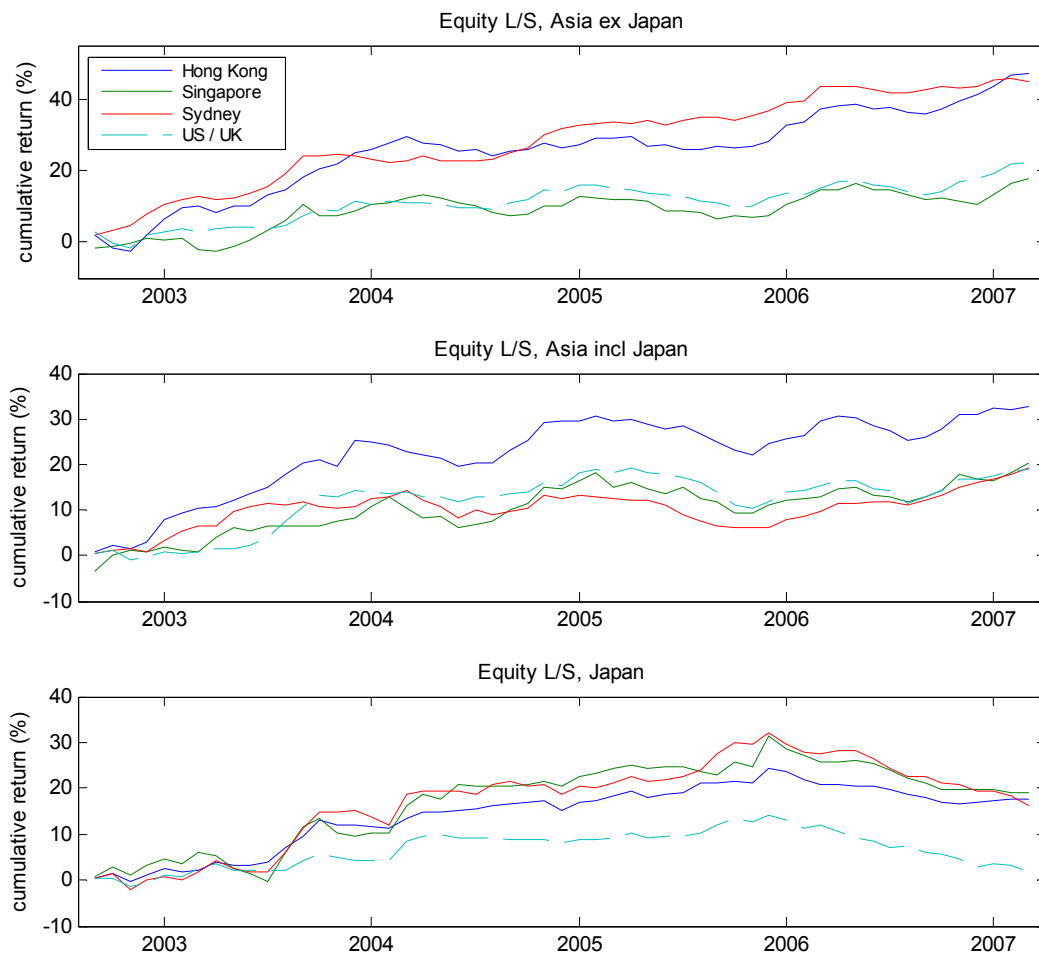
IV.   SUMMARY

In this issue of the statistical digest, we have used a fairly unique lens to view hedge funds: manager location. We uncover differences in size, investment strategies, and investment geography between funds managed from Hong Kong, Singapore, and Sydney. Funds managed from Hong Kong tend to be Equity Long/Short funds between US$100m to US$500m in size. Funds in Singapore tend to be smaller while funds in Sydney demonstrate significant variation in assets under management. Sydney attracts a disproportionate number of CTA funds while Singapore attracts a disproportionate number of Macro and Japan focused funds.

We also show that there are systematic differences in risk exposures between funds managed from the three centres. Asia ex Japan and Asia incl Japan Equity Long/Short funds managed from Sydney tend to have lower market exposures relative to other Asian funds. Similarly, Japan focused Equity Long/Short funds managed from Singapore tend to have a lower exposure to the Nikkei 225 index relative to other Japan focused funds.

Finally, our performance analysis reveals that funds managed from Asia outperform funds managed from the US and the UK. A local informational advantage manifests in Asia and this translates to differences in risk-adjusted returns between nearby and distant fund portfolios of around 2 and 4% per year.[8] While Asian Equity Long/Short funds managed from Hong Kong outperform those managed from Singapore and Sydney, we hypothesize that some of the over performance may be driven by Hong Kong's geographical proximity to China. These results are relevant to hedge fund investors considering an allocation to Asia.

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[8] Note that our results cannot be explained by the effects of AUM on fund returns. Some industry practitioners argue that diseconomies of scale exist in the hedge fund industry. We have monthly AUM information for the Eurekahedge database and can empirically test this hypothesis for Eurekahedge Asian Equity Long/Short hedge funds. We estimate a Fama and MacBeth (Journal of Political Economy, 1973) cross-sectional regression of month t fund returns (dependent variable) on month t-1 fund AUM (independent variable) and a constant, and find that fund AUM has statistically insignificant (at the 10% level) explanatory power on future fund returns.