

# Emerging Hedge Funds: A Source of Alpha

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# Emerging Hedge Funds: A Source of Alpha

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## Executive Summary

The vast majority of recent net flows into hedge funds have gone to the largest funds. We show that investors can improve the risk-return profile of their hedge fund portfolios by shifting some of their allocations from large, established hedge funds to young, emerging hedge funds.

According to Hedge Fund Research (HFR), more than 90% of the net capital flows into hedge funds during 2010 have gone to funds with more than \$5 billion under management. These very large funds represent less than 3% of the universe of active hedge funds.

We show that large funds have generated mediocre performance relative to hedge funds in the same strategy. In particular, large funds have generated basically zero alpha relative to an appropriate strategy index.

In contrast, we show that young, emerging hedge funds have generated 130bps per year of alpha relative to peer funds in the same strategy over the last seven years. Our analysis carefully controls for the instant-history bias, which arises when successful emerging funds decide to report their previous success to hedge fund databases, and the liquidation bias, which arises when unsuccessful funds decide to stop reporting their poor performance to hedge fund databases.

It seems reasonable to conjecture that emerging funds take more risk in order to generate their higher returns. Yet, the opposite is true: emerging funds have experienced lower return volatility than their large peers. In part due to the lower risk, emerging funds suffered lower drawdowns than large funds during periods of stress, like 2008. During 2008, emerging funds outperformed their large peers by more than 5 percentage points. If investors are seeking safety in large hedge funds, these funds appear to be failing their clients precisely during the periods when safety is most valuable.

Even though emerging funds have generated more attractive returns than large funds, institutional investors in particular favor the largest hedge fund firms. This preference for large funds may be driven by investor concerns about the higher return dispersion among emerging funds or infrastructure and operational risks at the emerging funds. Given the performance differences, investors may wish to consider ways to overcome these concerns in order to benefit from the performance differential. For example, separate accounts at emerging managers affiliated with a larger, experienced hedge fund group providing infrastructure and risk oversight may offer an attractive combination of emerging manager returns and an institutional-quality organization.

Institutional investors may be able to derive even better performance from an emerging hedge fund manager seeding program. The current mismatch between ample supply of emerging manager talent and lack of capital for emerging hedge funds presents an opportunity for investors to further enhance returns (alpha) through fee discounts or shared revenues in an emerging manager in exchange for seed capital. The estimates we provide here do not include these additional benefits. Under such seed arrangements, emerging hedge funds become even more attractive than we demonstrate here.

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The views expressed in this paper are those of the authors and do not necessarily reflect the position of Investcorp. We thank John Franklin for valuable comments.

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## 1. Introduction

There is a general perception that the hedge fund industry is a fragmented industry of many relatively small hedge funds, each following its idiosyncratic trading strategy. Contrary to this perception, large established funds attract the vast majority of capital flows, especially from institutional investors. According to Hedge Fund Research (HFR), more than 92% of the net capital flows in 2010 have gone to funds with more than \$5 billion under management.<sup>1</sup> We call funds managing more than \$5 billion “large funds”. Despite attracting the lion share of net flows, these large funds represent less than 3% of the active number of hedge funds.

Unfortunately, large funds find it difficult to add alpha relative to other hedge funds in the same strategy. The median performance for large funds has been close to the peer group return. This is not a mechanical result since the strategy index returns are not asset weighted. Over the last 7 years, the average alpha of large funds relative to an appropriate strategy index is basically zero.

In sharp contrast, during the first three years following their inception, hedge funds have generated 130 bps per year of alpha relative to strategy peers. We call funds younger than three years “emerging funds”.

Strikingly, emerging funds generate their higher alpha at lower risk than large, established funds. The lower risk contributes to lower drawdowns during periods of stress, like 2008. During 2008, emerging fund returns were 5 percentage points higher than those of large funds.

The returns for emerging funds are potentially subject to large reporting biases. Posthuma and van der Sluis (2003) show that average returns for emerging funds contain a large instant-history bias because many successful funds initiate their reports to databases with their entire, successful return history. In contrast, unsuccessful funds often decide not to report their returns to databases. Like Aggarwal and Jorion (2010), we carefully control for the instant-history bias by excluding most returns preceding the date when the fund first reported to the database. Ignoring the instant-history bias dramatically raises the alpha estimates but also makes it unlikely that investors could have realized the additional alpha.

It is important to note that there is a large number of emerging hedge funds. During our sample period, roughly one third of all funds were less than 3 years old. Hence, emerging funds are not hard to find, do not require choosing from a limited pool of funds, and offer the potential for diversification across emerging funds.

Institutional investors may prefer larger funds due to concerns about higher return dispersion among emerging managers or infrastructure and operational risks at smaller, emerging funds. Emerging funds may be able to mitigate these investor concerns by partnering with larger, established hedge fund institutions. Such partnerships can enable emerging funds to offer investors institutional-quality infrastructure like separate accounts and risk oversight.

Institutional investors may be able to generate even more attractive returns from an emerging hedge fund manager seeding program. We currently observe a mismatch between an ample supply of emerging manager talent and a dearth of capital for emerging funds. This imbalance presents an opportunity for investors who provide seed capital to further enhance returns (alpha) through fee discounts or shared revenues in an emerging manager. The estimates we provide here do

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<sup>1</sup> Taub (2010) and Unmack (2010) report similar facts about flows to large funds.

not include these additional benefits. Under such seed arrangements, emerging hedge funds become even more attractive than we demonstrate here.

The remainder of the paper proceeds as follows. Section 2 describes our estimation methodology and the main findings for the performance of emerging hedge funds and large hedge funds. Section 3 provides some technical details of our empirical methodology and describes robustness checks for the main results. Section 4 offers some concluding comments.

## 2. Methodology and Results

We first show that emerging funds have generated attractive returns relative to appropriate hedge fund strategy indexes. We estimate that emerging funds have averaged 130bps of alpha over seven years ending in March 2010. We derive this result while carefully controlling for potential biases in reported returns for emerging managers and appropriately adjusting returns for strategy-specific components. We then show that the performance of large hedge funds is average relative to appropriate hedge fund strategy returns. Finally, we confirm that both large and emerging funds have low exposures to traditional asset returns and have earned attractive returns relative to traditional assets. From this evidence, we conclude that emerging funds have a more attractive risk and return profile than large funds.

### *Performance of emerging funds*

We classify hedge funds up to 3 years old as “emerging funds”. By construction, the universe of emerging funds is constantly changing. In order to measure the performance of emerging funds over an extended period, we carefully create strategy-specific monthly return indexes for these funds.

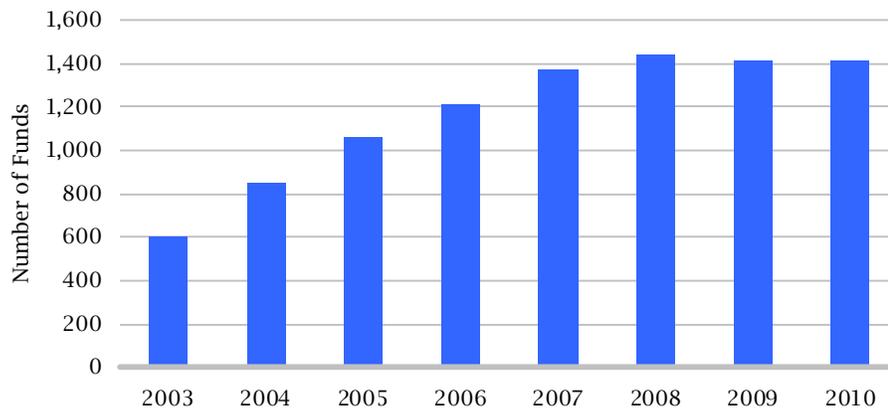
We work with a universe of hedge funds that we have classified into 14 strategy-specific peer groups of funds.<sup>2</sup> The two main advantages of this universe are that we carefully remove duplicate funds and we, not hedge fund managers, perform the strategy classification. We initially created these peer groups in 2003 by classifying funds that were active in 2003. We use only returns from 2003 onward in order to avoid survivorship bias in the returns prior to that period. This gives us a little more than 7 years of clean return history.

Most commercial databases include duplicate entries for the same investment strategy because a hedge fund manager enters performance for different share classes in different currencies or at different leverage levels, for example. We choose a single fund as the “flagship” product for each hedge fund manager and strategy and omit the other versions of the funds offered by the same manager.

Most commercial classifications allow the funds to self-select into the strategy of their choice. Because funds have different interpretations of the classifications, this gives rise to inconsistent strategy classifications. More importantly, funds have incentives to misrepresent their investment strategy in order to display better performance relative to other funds in the same strategy. This gives rise to biased classifications. Since we perform the strategy classifications, our peer group classification avoids these problems.

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<sup>2</sup> Appendix 1 lists all of the strategies.

**Figure 1: Total Number of Funds**

The bars show the total number of hedge funds in our sample. Each bar shows the average number of funds in the sample for a calendar year. The bar for 2010 shows data until March 2010.

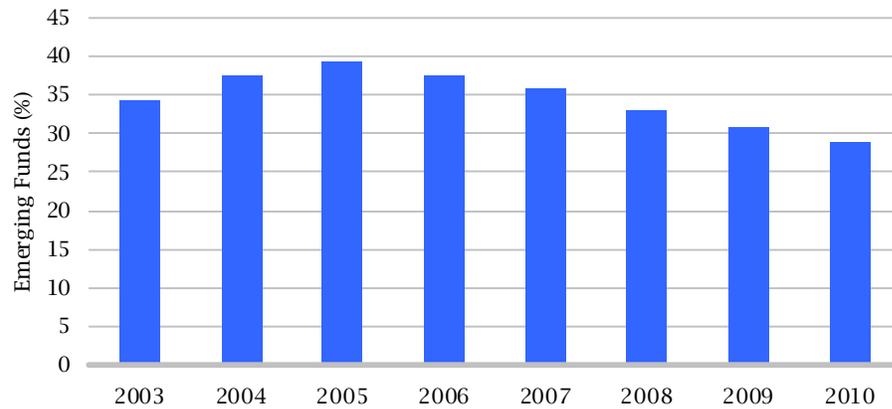
Source: Investcorp.

Posthuma and van der Sluis (2003) point out that successful funds are more likely to start reporting their returns to databases. When the funds first report to a database, they often add several months or years of successful history to the database. This instant-history bias is likely to be most severe for young funds because the instant history forms a large fraction of their entire return history. Like Aggarwal and Jorion (2010), we deal with the instant-history bias in fund returns by excluding the returns preceding the date when a fund first reported to the database. Hedge Fund Research (HFR) provides us with hedge fund return data along with the date when a fund first started reporting to the database. We merge our peer group with HFR data to obtain the date when the funds started reporting to the database. In order to account for processing delays at the fund manager and the database vendor, we include up to 6 monthly returns prior to this date.

Figure 1 shows that this sample selection leaves us with a substantial number of funds. The initial growth and recent decline in the sample size roughly mirror growth patterns for hedge funds overall. The pattern is not driven by sample selection. During the last 5 years, the sample size averages more than 1,200 funds.

Figure 2 shows that our sample selection also produces a large number of emerging funds. Emerging funds up to 3 years old constitute 30% - 40% of the total sample. This number is high due to substantial turnover among hedge funds. Since there are a large number of emerging funds, they are not hard to find and investing in emerging funds offers significant potential for diversification across funds. The recent declines in figures 1 and 2 show that there has been a net reduction in the total number of funds accompanied by a more than proportional decline in new fund entries.

We also deal with potential liquidation bias in the fund returns. Liquidation bias occurs when poorly performing funds decide not to report their final returns before closing. We control for liquidation bias by including funds at the bottom of their peer group for up to 3 months after they stop reporting data to the database vendor.

**Figure 2: Emerging Hedge Funds as a Fraction of Total Funds**

The graph shows average number of emerging funds considered per year as percentage of total funds. The year 2010 represents data until March 31, 2010.

Source: Investcorp.

To form the index for the emerging funds in a strategy, we compute the median return for all emerging funds in that strategy each month. We compute the median instead of the mean to accommodate our correction for liquidation bias.

In order to evaluate the performance of emerging funds, we compute the returns of our emerging fund index for a particular strategy in excess of the beta-adjusted strategy index. These excess returns are alphas, of course. Appendix 1 lists the strategy index used for each hedge fund strategy. We estimate betas strategy by strategy in order to accommodate different betas across strategies. The detailed results in appendix 2 confirm that emerging funds display material variations in beta across strategies although the betas are typically less than 1.

Although we provide detailed, strategy-by-strategy estimates in appendix 2, our main presentation focuses on the results for an overall composite in order to conserve space. Table 1 shows summary results for the full seven-year sample and for a subsample consisting of the most recent five years. The table shows results based on separate regressions for 14 style indexes or based on a single regression using the HFRI Fund-Weighted Composite index.

Our preferred method runs separate regressions in each of our 14 strategies in order to accommodate different betas and different residual volatilities in the different strategies. Section 3 provides additional details. We compute alphas in three steps. First, we estimate a separate beta for the emerging funds index in each strategy. All regressions use returns in excess of the risk-free rate. In order to account for potentially stale prices or return smoothing by the fund managers, we use the estimation method proposed by Dimson (1976). Next, we compute the monthly beta-adjusted excess returns, or alphas, for emerging funds in each strategy. Third, we form a weighted average of the monthly alphas with weights proportional to the number of emerging funds in each strategy for that month.<sup>3</sup> The table shows statistics for this time-series of composite alphas. Panel A of table 1 shows that, over our 7-year sample period, the composite alphas average 130bps per year.

<sup>3</sup> One can interpret the number of funds as a crude indication of capacity. In that case our weights make sure we don't overemphasize strategies with limited capacity. In addition, our strategy-specific estimates are more precise for strategies with more funds. Our weights help to increase the precision of our overall estimates.

**Table 1: Alpha of Emerging Hedge Funds**

Benchmark	Alpha	Tracking Error	IR	<i>t</i> -Stat	<i>P</i> -Value	Beta
Panel A: April 2003 to March 2010						
Style Indexes	1.3%	1.0%	1.3	3.7	0.0%	0.57
HFRI Composite	0.7%	1.2%	0.5	1.6	6.0%	0.59
Panel B: April 2005 to March 2010						
Style Indexes	0.8%	1.0%	0.8	1.8	3.7%	0.55
HFRI Composite	0.6%	1.3%	0.5	1.1	14.2%	0.53

The table shows statistics for emerging hedge fund alphas. We compute the alphas as beta-adjusted excess returns relative to an appropriate strategy index for 14 separate hedge fund strategies. The table presents summary statistics for weighted average alphas, where the weights are proportional to the number of emerging funds in each strategy.

The table shows the average alpha, its standard deviation (tracking error), and the ratio of the two (IR). The *t*-statistic is the ratio of alpha and its standard error. The associated *P*-Value shows the probability of randomly estimating an alpha that equals or exceeds the reported value even though the true alpha is zero. The last column shows the weighted average beta estimates for reference.

Separately, we also aggregate returns of emerging hedge funds across strategies into a fund-weighted composite return. Once again, we weight each strategy in proportion to the number of emerging funds in that strategy. We then use this composite to estimate a single beta from a regression on the HFRI Fund-Weighted Composite.

Panel A shows results for 84 months ending in March 2010. Panel B shows results for 60 months, also ending in March 2010.

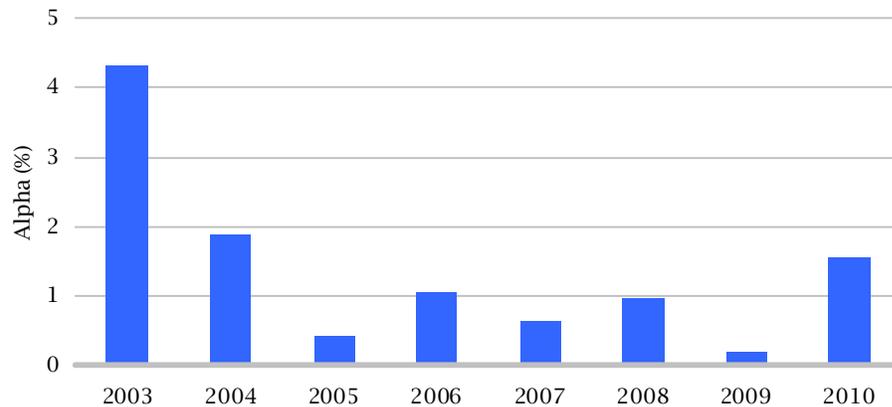
Source: Investcorp.

We can also estimate the time-series standard deviation of the alphas, which is commonly interpreted as a tracking error. For the emerging funds, the tracking error averaged 1.0% per annum over our 7-year sample period. The ratio of alpha to tracking error forms the information ratio, IR, of emerging funds. Emerging funds generated an IR of 1.3 during our full sample period. We interpret the combination of 130bps of alpha with a tracking error of only 100pbs as outperformance with high economic significance.

Finally, we can assess the statistical significance of the estimates. We can calculate the Student *t*-statistic as the average alpha divided by its standard error.<sup>4</sup> We use the *t*-statistic in order to conduct a one-sided test of whether alpha is positive. The *P*-value in the table strongly rejects the hypothesis that the true alpha is zero (or negative). According to the one-sided *t*-test, the probability of estimating an alpha of 130pbs (or more) when the true alpha is zero is much less than 1%. Hence, our alpha estimates are highly statistically significant.

For simplicity, we also estimate alphas from a single regression. For this regression, we first compute a composite return for emerging funds. As before, we weight the strategy-specific emerging fund returns in proportion to the number of emerging funds in each strategy in a particular month. We then regress the emerging fund composite returns on returns to the HFRI Fund-Weighted Composite index. Table 1 also shows results for the monthly alphas from this analysis.

<sup>4</sup> The standard error of the mean is equal to the standard deviation divided by the square root of the number of observations.

**Figure 3: Emerging Hedge Fund Alpha over Time**

The bars show realized alphas of emerging hedge funds. We compute the alphas as beta-adjusted returns relative to an appropriate strategy index. The graph displays composite alpha. Each strategy in the composite is weighted in proportion to the number of emerging funds in that strategy. The alpha for 2010 in the graph is an annualized figure based on the period January to March.

Source: Investcorp.

It is important to recognize that the weighting across strategies implies an asset allocation to the strategies. Our emerging manager composite almost certainly uses different strategy allocations than the HFRI Composite index. Consequently, the results from the single regression are likely contaminated by these asset allocation differences. Our main analysis, however, proceeds strategy by strategy in order to properly control for strategy-specific returns. Although the mismatch in strategy allocations between our emerging funds composite and the HFR composite partially obscures the analysis, the basic results carry over, i.e. emerging funds have substantial alpha.

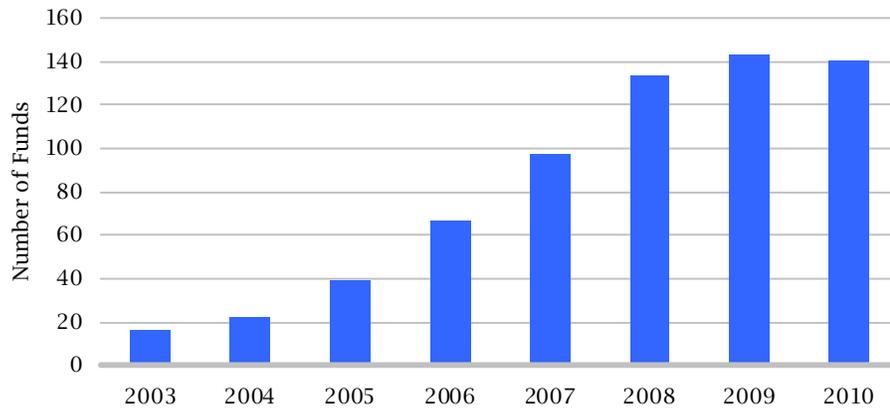
In addition to the overall averages, we can also compute performance over time. Figure 3 shows the weighted average alpha for emerging funds by calendar year. Although there is some variation over time, emerging funds have outperformed their beta-adjusted hedge fund strategy indexes every year in our sample period.

#### *Performance of large funds*

Having established that emerging hedge funds have generated unusually attractive returns, we now show that large hedge funds have generated ordinary performance relative to their hedge fund peers. We conclude that investors are attracted to large funds for reasons other than exceptional returns.

We are not the first to point out that, as funds grow in assets, their performance relative to other funds decreases. Jones (2007/2009) argues that performance of funds is inversely related to asset size.

We call hedge fund firms with at least \$5 billion in assets under management “large funds”. At the beginning of each calendar year, we use the list of large hedge fund managers compiled by InvestHedge to identify large fund firms for the next 12 months. This procedure avoids the look-ahead bias associated with

**Figure 4: Number of Large Hedge Funds**

The bars show the average number of large funds in our sample for each calendar year. The bar for 2010 is based on data until March 2010.  
Source: Investcorp.

measuring performance for funds that turned out to be large at the end of the performance period. One reason why funds become large is good past performance. That's very different from believing that large funds will deliver good future performance. We use assets by firm because data for assets by fund are not reliable.

Each year, we use the largest hedge fund firms to find all of their associated funds in our database. Although some funds offered by large firms may have relatively small assets under management, we have no reliable way of identifying large and small funds. As before, we remove duplicate entries if a firm offers the same strategy in multiple share classes. However, we retain all strategies offered by each large firm. Because a large firm may manage funds in more than one strategy, we use our sector classifications for each fund separately.

In contrast to emerging funds, large funds form a small part of the hedge fund universe. Over the last 7 years, large funds never account for more than 3% of the total active funds in our overall fund universe. Figure 4 shows the average number of large funds for each of the last 7 years.

Having identified the large funds for each period, we proceed exactly as we did with the emerging funds. For each month, we compute the median return across large funds in a strategy. For each of these 14 large-fund strategy indexes, we estimate a separate beta relative to the appropriate hedge fund strategy index. Based on these estimates, we compute the beta-adjusted excess returns for large funds in each strategy. Finally, we form the weighted average of the large-fund alphas for each month. We weight the large-fund alphas in proportion to the number of *emerging* funds in order to use the same asset allocation for both sets of funds.

Table 2 summarizes our estimates for large hedge funds. We estimate that large funds have generated 40bps of annualized alpha over the last 7 years. This is substantially less than the 130bps we estimate for emerging hedge funds.

**Table 2: Alpha of Large Hedge Funds**

Benchmark	Alpha	Tracking Error	IR	<i>t</i> -Stat	<i>P</i> -Value	Beta
Panel A: April 2003 to March 2010						
Style Indexes	0.4%	1.9%	0.2	0.7	23.7%	0.70
HFRI Composite	-0.1%	1.9%	-0.1	-0.0	NA	0.61
Panel B: April 2005 to March 2010						
Style Indexes	-1.0%	1.8%	-0.5	-1.2	NA	0.69
HFRI Composite	-1.1%	1.8%	-0.6	-1.4	NA	0.62

The table shows statistics for alphas of large hedge funds. We compute the alphas as beta-adjusted excess returns relative to an appropriate strategy index for 14 separate hedge fund strategies. The table presents summary statistics for weighted average alphas, where the weights are proportional to the number of emerging funds in each strategy.

The table shows the average alpha, its standard deviation (tracking error), and the ratio of the two (IR). The *t*-statistic is the ratio of alpha and its standard error. The associated *P*-Value shows the probability of randomly estimating an alpha that equals or exceeds the reported value even though the true alpha is zero. The last column shows the weighted average beta estimates for reference.

Separately, we also aggregate returns of large hedge funds across strategies into a fund-weighted composite return. Once again, we weight each strategy in proportion to the number of emerging funds in that strategy. We then use this composite to estimate a single beta from a regression on the HFRI Fund-Weighted Composite.

Panel A shows results for 84 months ending in March 2010. Panel B shows results for 60 months, also ending in March 2010.

Source: Investcorp.

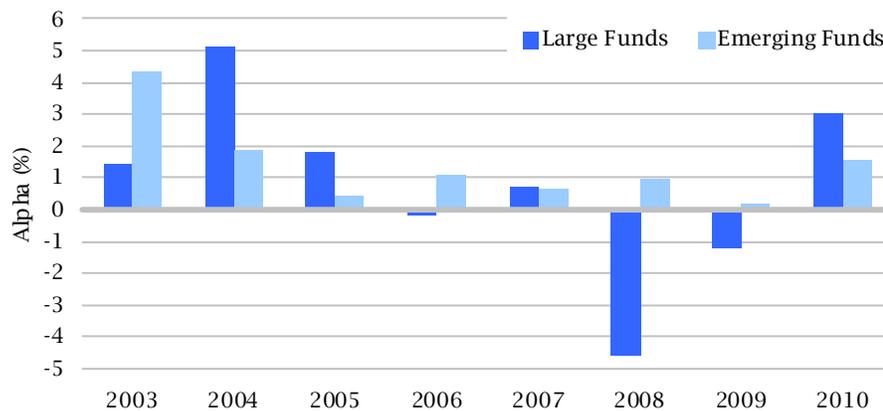
Moreover, the alpha estimate for large funds is not statistically significant. There is a substantial probability that the true alpha is zero. In fact, the other alpha estimates in table 2 are all negative. The alpha estimate over 5 years ending in March 2010 is -100bps. Similarly, the simple estimates based on a single regression of the large-fund composite on the HFRI Fund-Weighted Composite are negative.<sup>5</sup> Because the one-sided *t*-tests of positivity of alpha do not apply to negative alpha estimates, we have marked these tests as NA.

It is also instructive to compare the beta estimates across tables 1 and 2: Large funds have slightly higher strategy betas than emerging funds. Since hedge fund strategy indexes are generally fund-weighted, not asset-weighted, this is not a mechanical result.<sup>6</sup> For asset-weighted indexes, there is a close similarity between the index and its largest constituents. This is not the case for the fund-weighted indexes we use. Large funds receive the same index weight as small funds.

The combination of lower alphas and higher betas clearly means that, relative to their hedge fund strategy peers, large funds are more ordinary than emerging funds.

<sup>5</sup> Appendix 2 shows detailed strategy-by-strategy results on performance of large funds relative to strategy returns.

<sup>6</sup> The dearth of asset weighted hedge fund indexes presumably indicates that most index providers share our concerns about the reliability of the assets under management data.

**Figure 5: Alpha of Large Hedge Funds over Time**

The bars compare realized alphas for large hedge funds and emerging hedge funds. We compute the alphas as beta-adjusted returns relative to an appropriate strategy index. The graph displays composite alphas. Each strategy in the composite is weighted in proportion to the number of emerging funds in that strategy. The alpha for 2010 in the graph is an annualized figure based on the period January to March.

Source: Investcorp.

Finally, figure 5 compares the alphas of large hedge funds and emerging hedge funds over time. Although the figure confirms that large funds have lower average alpha than emerging funds, it highlights that much of this performance differential occurred during the financial crisis of 2008 and 2009. If investors are seeking safety in large hedge funds, these funds appear to be failing their clients precisely during the periods when safety is most valuable.

#### *Performance relative to traditional assets*

Although large funds have ordinary returns relative to their hedge fund peers in the same strategy, they have attractive returns relative to traditional assets like equities. Table 3 shows that emerging funds and large funds have low exposure, beta, to traditional assets like equities. Moreover, both emerging funds and large funds generate significant alpha relative to equities. The low beta and high alpha relative to equities make emerging funds and large funds attractive diversifying additions to portfolios dominated by traditional assets. Table 3 also confirms that the exceptional performance of emerging funds is not derived from unusual exposures to traditional assets. Compared to large funds, emerging funds have lower beta and higher alpha with respect to equities.

#### *Risk*

We have demonstrated that emerging funds have generated higher alpha than large funds. Table 4 shows that emerging funds also have lower risk than large funds. The annualized volatility of our emerging funds composite over our 7-year sample is 3.8%. For the same period, our large funds composite has volatility of 4.9%.

**Table 3: Performance Relative to Equities**

Benchmark	Alpha	Tracking Error	IR	<i>t</i> -Stat	<i>P</i> -Value	Beta
Panel A: Emerging Funds						
S&P 500	3.3%	2.6%	1.3	3.5	0.0%	0.20
Panel B: Large Funds						
S&P 500	2.3%	3.5%	0.6	1.9	2.9%	0.25

The table shows annualized alphas of emerging hedge funds and large hedge funds to S&P 500. We compute the alphas as beta-adjusted returns relative to S&P 500. The statistics are for composite alphas. We compute alphas for each of the emerging funds indexes which are then aggregated into a fund-weighted composite alpha. Each strategy in the composite is weighted in proportion to the number of emerging funds in that strategy. The *t*-statistic tests the hypothesis of alpha greater than zero at a 95% confidence level. The table shows performance for the 7-year period ending in March 2010.

Source: Investcorp.

Higher strategy betas result in higher risk and the risk estimates in table 4 align closely with our estimates of strategy betas for emerging and large hedge funds. This also says that our index of large hedge funds contains enough large funds to diversify away most idiosyncratic fund risk. The fact that we observe higher risk for large funds than emerging funds is not a consequence of less diversification due to the smaller number of large funds.

Standard risk estimates may underestimate the true volatility of hedge fund returns if the funds use stale prices for illiquid instruments or deliberately smooth reported returns. We investigate whether these effects are larger for small, emerging funds than for large funds by re-estimating all of the volatilities in table 4 using the Newey and West (1987) volatility estimator. The estimator raises all four of the volatility estimates in the table – including the estimate for the S&P500 – by about 30%. There is no evidence that emerging fund risk is artificially low.

Partly due to the lower risk, emerging funds also exhibit lower drawdowns than large funds during periods of market stress, like 2008. Table 4 shows that, during 2008, the return for our emerging funds composite was more than 5 percentage points higher than for our large fund composite. Interestingly, large funds have lower risk than the HFRI Composite index. Their risk-adjusted performance during 2008, however, is the same as for the HFRI Composite: Both earned returns 2.8 standard deviations below zero.

In summary, we show that investors could have improved the risk-return profile of their hedge fund portfolios by shifting some of their allocations from large, established hedge funds to young, emerging hedge funds.

A natural hypothesis explaining the higher returns earned by emerging managers is that emerging managers take more risk. Our evidence on risk and drawdowns shows that this is not the case. There are at least two other natural hypotheses for why emerging funds outperform their strategy peers in general and large funds in particular.

**Table 4: 2008 Drawdowns and Total Risk**

	Total Return in 2008	Risk
Emerging Funds	-8.0%	3.8%
Large Funds	-13.7%	4.9%
HFRI Fund-Weighted Composite	-19.0%	6.7%
S&P 500	-37.0%	14.8%

The table shows total returns during 2008 for our composites of emerging hedge funds and large hedge funds. For comparison, we show the performance of the HFRI Fund-Weighted Composite index and S&P 500.

The table also shows annualized volatility for all four return series. The volatility estimates are based on the full sample of monthly returns from April 2003 to March 2010.

We compute returns for each of the emerging funds indexes which are then aggregated into a fund-weighted composite return. Similar to emerging funds we also compute returns for large funds which are then aggregated into a fund weighted composite return. Each strategy in the composite is weighted in proportion to the number of emerging funds in that strategy.

Source: Investcorp.

First, hedge fund managers may have limited capacity in their best trading strategies. If emerging funds manage fewer assets than large firms, emerging funds can allocate a higher fraction of assets to their best trading strategies. We attribute the return differential implied by tables 1 and 2 in part to the size differential between emerging and large funds. As large funds grow larger, they find it increasingly difficult to add alpha. They may have limited alpha opportunities that they have to spread across a large asset base, or they may not be nimble enough to capture transient alpha opportunities.

Second, emerging managers may have especially high incentives to succeed. The principals at many emerging hedge funds are faced with the alternative of losing most of their wealth if the fund fails or multiplying their wealth if the fund succeeds. At more established funds, even managers who continue to invest a significant fraction of their assets in the fund may have taken out substantial amounts of money over time. They could remain wealthy even if the fund were to fail. Unfortunately, we don't have data on manager wealth and motivation that would allow us to test this hypothesis.

#### *Investor concerns and mitigants*

Institutional investors may shy away from emerging funds because they have difficulty realizing the higher performance associated with emerging funds.

First, emerging funds could be so small that an institutional investor who does not wish to double or triple a fund's existing assets under management with a single allocation, would have to split their large allocations across dozens of funds. This could create large administrative costs. Since fully a third of all hedge funds are young, emerging funds, our experience suggests that there is substantial variation in fund size within emerging funds, so that there are many emerging funds with meaningful assets. Unfortunately, the data on assets under management are not sufficiently reliable to provide solid evidence on this issue.

Second, even if an institutional investor can find emerging funds of sufficient size, the investor may be concerned that return dispersion within emerging funds is higher than return dispersion within large funds. In fact, this is true. The monthly cross-sectional inter-quartile range of alphas averages 3% for all of the emerging funds in our sample and 2.3% for the large funds in our sample. In the

absence of persistent performance differences, these values annualize to 10.4% and 8%, respectively. Although this is not a large difference, it raises the possibility that any one of the emerging funds may have higher tracking error than our indexes of emerging funds or large funds. An institutional investor who allocates to a large number of funds, however, should not be concerned about slightly higher idiosyncratic risk at some managers since idiosyncratic risk diversifies very quickly.

Third, an institutional investor may have concerns about infrastructure and operational risks at smaller, emerging funds. Emerging funds may be able to mitigate these investor concerns by partnering with larger, established hedge fund institutions that offer investors institutional-quality infrastructure like separate accounts and risk oversight.

Finally, institutional investors may benefit from establishing an emerging hedge fund manager seeding program, either directly or partnering with firms that have a proven track record of seeding emerging hedge funds. The current mismatch between ample supply of emerging manager talent and limited capital for emerging funds presents an opportunity for investors to further enhance returns (alpha) through fee discounts or shared revenues in an emerging manager in exchange for seed capital. Our estimates do not include these additional benefits. Under such seed arrangements, emerging hedge funds become even more attractive than we demonstrate here.

### 3. Methodology Details and Robustness Checks

Perhaps, one surprisingly complex aspect of our work is the estimation of the strategy-specific betas and subsequent aggregation of alphas. We prefer to estimate betas strategy by strategy in order to accommodate different strategy indexes, variations in betas across strategies, and different return dispersions within strategies. If emerging funds had identical betas across all strategies, we could simply form a composite index of emerging managers and then use the same weights to create a weighted average of the strategy indexes. Appendix 2 shows, however, that our beta estimates for emerging managers vary from 0.2 to 1.1.

A simple two-strategy example can illustrate the complication arising from weighting multiple benchmarks with different betas. If we have indexes of returns for emerging managers in two strategies, we think of their returns as

$$\begin{aligned}(r_1 - r_f) &= \alpha_1 + \beta_1(r_{s,1} - r_f) + \varepsilon_1 \\ (r_2 - r_f) &= \alpha_2 + \beta_2(r_{s,2} - r_f) + \varepsilon_2,\end{aligned}$$

where  $r_i$  is the return to our emerging manager index in strategy  $i$ ,  $r_{s,i}$  is the return to the hedge fund index for strategy  $i$ ,  $r_f$  is the risk-free rate of interest,  $\alpha_i$  and  $\beta_i$  are parameters, and  $\varepsilon_i$  is an error term. A weighted average of these two strategy returns is

$$\begin{aligned}\omega_1(r_1 - r_f) + \omega_2(r_2 - r_f) &= \omega_1\alpha_1 + \omega_2\alpha_2 + \\ &\quad \omega_1\beta_1(r_{s,1} - r_f) + \omega_2\beta_2(r_{s,2} - r_f) + \\ &\quad \omega_1\varepsilon_1 + \omega_2\varepsilon_2.\end{aligned}$$

The main complication is that the “natural” weighted average of the two strategy indexes,  $\omega_1(r_{s,1} - r_f) + \omega_2(r_{s,2} - r_f)$ , is not appropriate on the right-hand side of this

regression unless the strategy betas are equal or the strategy indexes are the same.

It is the latter case we commonly encounter when we regress different asset returns on a common market return. In that case, the right-hand-side return is the same for all assets and the beta for a weighted average portfolio of assets equals the weighted average of the individual betas.

Given the different right-hand-side indexes and different betas, we have two obvious choices in order to correctly estimate betas and alphas. We can regress the emerging manager composite on all 14 strategy indexes at once. Or, we can separately regress the emerging manager index for a strategy on the appropriate strategy index and then aggregate the results across the 14 strategies. We run separate regressions for each strategy in order to minimize statistical problems arising out of correlations across the strategy indexes and in order to accommodate different residual volatility for each strategy.

Although our discussion focuses on what we consider the best estimates of excess returns for hedge funds, we also conducted a wide range of robustness checks. These alternative estimation methods leave our main conclusions qualitatively unchanged.

#### *Definition of emerging funds*

We considered different definitions of “emerging” hedge funds. We alternatively define funds as emerging if they are less than 1, 2, 3, 4 or 5 years old. We find that emerging funds produce positive alpha for all of these ages. However, the alpha declines with the age of the fund. We conclude that emerging funds generate maximum alpha in their early years and then gradually revert to the norm. This result is consistent with Aggarwal and Jorion (2010). We report results for emerging funds up to 3 years old in order to have reasonable sample sizes, allow investors time to find and invest in emerging funds, and allow investors to hold the investments for a realistic time period.

We also experimented with defining the fund age based on the first included return or based on the date a fund first reported to the database. Because we don't include returns more than 6 months prior to the date a fund first reported to the database, the window of included returns is fairly similar. Hence, the effects on the results are minor.

#### *Instant-history bias adjustments*

Hedge funds often wait several months – or years – after the fund launch to see if the initial performance is good before reporting data to hedge fund databases. If poorly performing funds decide not to report at all, this introduces upward bias into the hedge fund returns on the database.<sup>7</sup> Without any adjustments for instant-history bias, emerging funds in particular appear to have very high alpha over strategy returns. It is not clear how an investor would earn these very high returns. Hence, we don't report results for returns without instant-history bias adjustments. Excluding all returns prior to the date a fund first reported to the database slightly reduces our sample size but leaves our main conclusions in tact. We consider the 6-month window a reasonable allowance for administrative delays at the fund or the database.

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<sup>7</sup> Samples with this feature, missing observations on adverse early adverse outcomes, are sometimes called left truncated. See Maddala (1983).

### *Liquidation bias adjustments*

We use the median return across hedge funds in a particular strategy in order to adjust for liquidation bias.<sup>8</sup> We retain funds that stopped reporting returns within the previous 3 months and presume the funds stopped reporting due to poor returns. By including the "unreported" returns at the bottom of the distribution, we can calculate a median return that corrects for the liquidation bias without assigning particular values to the unreported returns. We cannot, however, calculate means while making this kind of simple adjustment. When we compute means of the reported returns, the computed alphas for emerging funds (and to a lesser extent for large funds) rise. While this does not change our main conclusion - that emerging funds have generated better performance than large funds - we find the estimates including the liquidation bias adjustment more credible.

### *Strategy weights in the composite*

When we aggregate the strategy-specific results into overall composites, we weight each strategy in proportion to the number of emerging funds in the strategy. We prefer this weighting method for two reasons. First, it has a natural portfolio interpretation: invest more into strategies where there are more opportunities. Second, the weighting has an attractive statistical interpretation: assign more weight to more precise estimates based on a larger number of observations. Nonetheless, we have conducted the analysis using equal weights for all strategies. Although the equal weights imply different strategy allocations, our regression approach attempts to remove strategy-specific components. As a result, the equally-weighted estimates provide results similar to the values we report.

## **4. Conclusions**

We show that young, emerging hedge funds have generated strong positive alpha relative to their strategy peers. Over the last 7 years, funds up to 3 years old generated an annualized alpha of 130 bps relative to an appropriate hedge fund strategy index. We estimate this alpha while carefully controlling for the instant-history bias in emerging fund returns.

In contrast, large hedge funds generate returns that are typical for their strategy. For large funds, our alpha estimate relative to strategy peers is close to zero and statistically insignificant.

Moreover, emerging funds generate their higher alphas with lower volatility than their large peers. In part due to this lower risk, emerging funds suffered lower drawdowns than large funds during periods of stress, like 2008. During 2008, emerging funds outperformed their large peers by 5 percentage points.

Despite these large performance differences, institutional investors appear to favor the largest hedge fund firms. This preference for large funds may be driven by investor concerns about infrastructure and operational risks at the emerging funds. Emerging funds can mitigate investor concerns by partnering with large institutions. The right partner can enable emerging funds to offer investors institutional-quality infrastructure like separate accounts and risk oversight.

Relative to traditional assets like equities, both large and emerging hedge funds have generated substantial alpha with low beta. While that makes large funds attractive investments, we demonstrate that the performance of emerging

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<sup>8</sup> In technical terms, samples with liquidation bias suffer from right censoring.

funds has been even better. We think that the smaller size of emerging funds gives them a structural advantage in generating alpha. Hence, investors may benefit from shifting a part of their hedge fund allocation from large funds to emerging funds – especially if they can do so without lowering their standards for the funds' operations, infrastructure, and oversight.

Our estimates do not include additional benefits large institutions may be able to obtain by closely partnering with emerging managers in a seeding relationship. In these arrangements, the seed investor typically obtains improved terms in the form of fee discounts or shared revenues. Under such seed arrangements, emerging hedge funds become even more attractive than we have demonstrated here.

## 5. References

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## 6. Appendix 1: Hedge Fund Strategy Indexes

Table 5 shows a list of hedge fund strategies and benchmarks indexes that we use in our analysis. The custom short sellers index is an index created by us. Like the other indexes, it consists of an equally-weighted average of fund returns. In this case, we choose which short-selling hedge funds to include in the index. The custom Global index monthly return is the average of the monthly return of the four L/S equity indices for US, Europe, Japan and Asia.

**Table 5: Strategies and Benchmarks**

Strategy	Benchmark Index
<b>Event Driven Strategies</b>	
Distressed	HFRI ED: Distressed/Restructuring Index
Event Driven	HFRI Event-Driven (Total) Index
<b>Relative Value Strategies</b>	
Convertible Arbitrage	HFRI RV: Fixed Income-Convertible Arbitrage Index
Equity Market Neutral	HFRI EH: Equity Market Neutral Index
Fixed Income/Relative Value	Morningstar MSCI Fixed Income Arbitrage
Multi Strategy	HFRI RV: Multi-Strategy Index
<b>L/S Equities</b>	
US	Morningstar MSCI Security Selection North America
Europe	Morningstar MSCI Security Selection Europe
Japan	Morningstar MSCI Security Selection Japan
Asia	Eurekahedge Asia ex Japan L/S Equities
Global	Custom Global Index
<b>Macro</b>	
Macro Discretionary	Morningstar MSCI Discretionary Trading
Macro Systematic	Morningstar MSCI Systematic Trading
<b>Portfolio Insurance</b>	Custom Short Sellers Index

## 7. Appendix 2: Detailed Results

Table 6 shows alpha of emerging funds and large funds relative to strategy indices for each individual strategy over the last 7 years. Emerging funds exhibit lower beta to appropriate strategy index than large funds for all strategies except hedge equities. Emerging funds within distressed, convertible arbitrage and multi-strategy show strong absolute alpha of more than 400 bps relative to appropriate hedge fund strategy index.

**Table 6: Alpha of emerging hedge funds and large funds to individual strategy indices over last 7 years**

	Emerging Funds				Large Funds			
	Alpha	Beta	Tracking Error	Information Ratio	Alpha	Beta	Tracking Error	Information Ratio
Distressed	5.7%	0.5	2.2%	2.6	-0.5%	0.6	2.8%	-0.2
Event Driven	-1.1%	0.7	2.7%	-0.4	0.4%	0.9	2.9%	0.1
Convertible Arbitrage	4.7%	0.2	3.8%	1.2	-2.3%	1.0	3.7%	-0.6
Equity Market Neutral	-0.7%	0.8	1.6%	-0.4	0.4%	0.9	4.5%	0.1
Fixed Income / Relative Value	-2.2%	0.4	6.9%	-0.3	-0.9%	0.7	3.9%	-0.2
Multi-Strategy	4.2%	0.5	4.1%	1.0	1.0%	0.8	2.8%	0.4
Hedge Equities US	2.4%	0.6	1.9%	1.2	0.2%	0.7	3.8%	0.0
Hedge Equities Europe	0.0%	0.9	2.4%	0.0	2.8%	0.5	3.3%	0.8
Hedge Equities Global	3.6%	0.8	3.9%	0.9	-0.5%	0.6	5.8%	-0.1
Hedge Equities Asia	-7.0%	0.8	3.6%	-1.9	-2.5%	0.6	3.6%	-0.7
Hedge Equities Japan	-5.1%	1.1	5.1%	-1.0	-2.2%	1.0	4.3%	-0.5
Macro Discretionary	1.7%	0.2	2.1%	0.8	3.6%	0.5	5.5%	0.7
Macro Systematic	1.3%	0.3	2.2%	0.6	-0.8%	0.6	4.3%	-0.2
Portfolio Insurance	0.9%	0.5	7.7%	0.1	0.9%	1.4	10.3%	0.1

The table shows annualized average alphas of emerging hedge funds and large hedge funds. For each strategy, we compute the alpha as beta-adjusted returns relative to the appropriate strategy index. The tracking error is the annualized standard deviation of the monthly alphas. The information ratio shows the ratio of alphas and tracking errors. The table shows performance for the 7-year period ending March 2010.

Source: Investcorp.

Table 7 shows alpha of emerging funds and large funds relative to S&P 500 index for each individual strategy over the last 7 years. Emerging funds generate significant alpha relative to equities for all hedge fund strategies except equity market neutral, fixed income relative value, hedge equities Japan and portfolio insurance. The outperformance is significant and more than 400 bps for distressed, convertible arbitrage, hedge equities US and hedge equities global. Large funds also generate significant alpha to S&P 500 across all strategies except convertible arbitrage, hedge equities Japan and portfolio insurance. Emerging funds show almost no beta to S&P 500 for relative value and macro strategies.

**Table 7: Alpha of emerging hedge funds and large funds to S&P 500 index over last 7 years**

	Emerging Funds				Large Funds			
	Alpha	Beta	Tracking Error	Information Ratio	Alpha	Beta	Tracking Error	Information Ratio
Distressed	8.3%	0.3	3.8%	2.2	3.0%	0.2	4.8%	0.6
Event Driven	2.0%	0.3	4.3%	0.5	5.3%	0.4	4.8%	1.1
Convertible Arbitrage	5.0%	0.0	3.3%	1.5	-1.9%	0.3	9.4%	-0.2
Equity Market Neutral	-0.3%	0.0	2.4%	-0.1	0.9%	0.0	5.2%	0.2
Fixed Income / Relative Value	-1.4%	0.0	7.8%	-0.2	0.0%	0.1	6.0%	0.0
Multi-Strategy	5.6%	0.1	3.9%	1.4	2.4%	0.2	4.8%	0.5
Hedge Equities US	4.4%	0.3	3.4%	1.3	2.1%	0.4	4.9%	0.4
Hedge Equities Europe	3.8%	0.2	4.7%	0.8	4.4%	0.1	4.7%	0.9
Hedge Equities Global	7.7%	0.4	5.3%	1.5	2.0%	0.4	6.6%	0.3
Hedge Equities Asia	1.3%	0.5	8.1%	0.2	2.6%	0.4	5.6%	0.5
Hedge Equities Japan	-2.9%	0.3	8.2%	-0.3	-4.6%	0.3	6.4%	-0.7
Macro Discretionary	2.3%	0.0	2.4%	1.0	5.2%	0.1	6.1%	0.9
Macro Systematic	2.6%	0.0	3.5%	0.7	1.1%	0.1	5.8%	0.2
Portfolio Insurance	-0.6%	-0.7	6.5%	-0.1	-5.5%	-1.3	10.7%	-0.5

The table shows annualized average alphas of emerging hedge funds and large hedge funds. For each strategy, we compute the alpha as beta-adjusted returns relative to the S&P 500 index. The tracking error is the annualized standard deviation of the monthly alphas. The information ratio shows the ratio of alphas and tracking errors. The table shows performance for the 7-year period ending March 2010.

Source: Investcorp.

Tables 6 and 7 show statistics based on our full 7-year sample. We also repeat this analysis for the 5-year periods ending March 2010. Tables 8 and 9 show the detailed results for the more recent period and confirm that the primary conclusions are the same.

**Table 8: Alpha of emerging hedge funds and large funds to individual strategy indices over last 5 years**

	Emerging Funds				Large Funds			
	Alpha	Beta	Tracking Error	Information Ratio	Alpha	Beta	Tracking Error	Information Ratio
Distressed	6.4%	0.5	2.1%	3.0	0.8%	0.9	2.1%	0.4
Event Driven	-1.5%	0.6	3.0%	-0.5	0.4%	1.0	2.8%	0.2
Convertible Arbitrage	4.1%	0.1	3.2%	1.3	-2.0%	1.0	4.2%	-0.5
Equity Market Neutral	-0.4%	1.0	1.9%	-0.2	-0.9%	0.9	3.2%	-0.3
Fixed Income / Relative Value	-4.5%	0.4	8.1%	-0.6	-2.3%	0.8	3.6%	-0.6
Multi-Strategy	5.2%	0.5	3.9%	1.3	1.7%	0.7	3.2%	0.5
Hedge Equities US	2.0%	0.5	2.1%	0.9	-3.3%	0.9	4.0%	-0.8
Hedge Equities Europe	0.3%	0.9	2.5%	0.1	2.5%	0.5	3.4%	0.7
Hedge Equities Global	2.5%	0.9	2.7%	0.9	-0.7%	0.6	4.7%	-0.1
Hedge Equities Asia	-8.4%	0.8	3.6%	-2.3	-4.9%	0.6	3.7%	-1.3
Hedge Equities Japan	-5.6%	1.1	4.5%	-1.2	-3.1%	1.0	5.1%	-0.6
Macro Discretionary	1.5%	0.2	2.4%	0.6	0.6%	0.4	4.7%	0.1
Macro Systematic	-1.1%	0.3	1.2%	-0.9	-0.1%	0.5	4.2%	0.0
Portfolio Insurance	5.9%	0.5	7.8%	0.8	1.3%	1.4	12.2%	0.1

The table shows annualized average alphas of emerging hedge funds and large hedge funds. For each strategy, we compute the alpha as beta-adjusted returns relative to the appropriate strategy index. The tracking error is the annualized standard deviation of the monthly alphas. The information ratio shows the ratio of alphas and tracking errors. The table shows performance for the 5-year period ending March 2010.

Source: Investcorp.

**Table 9: Alpha of emerging hedge funds and large funds to S&P 500 index over last 5 years**

	Emerging Funds				Large Funds			
	Alpha	Beta	Tracking Error	Information Ratio	Alpha	Beta	Tracking Error	Information Ratio
Distressed	7.9%	0.3	4.0%	2.0	3.2%	0.3	5.5%	0.6
Event Driven	0.5%	0.3	4.7%	0.1	3.5%	0.4	5.0%	0.7
Convertible Arbitrage	4.6%	0.0	2.9%	1.5	0.6%	0.4	10.3%	0.1
Equity Market Neutral	-0.5%	0.0	2.7%	-0.2	-0.9%	0.0	4.3%	-0.2
Fixed Income / Relative Value	-4.2%	0.0	9.2%	-0.5	-1.8%	0.1	7.6%	-0.2
Multi-Strategy	5.9%	0.1	4.4%	1.3	2.4%	0.3	5.3%	0.5
Hedge Equities US	3.5%	0.3	3.5%	1.0	-0.8%	0.5	4.9%	-0.2
Hedge Equities Europe	3.6%	0.2	5.1%	0.7	4.5%	0.1	4.9%	0.9
Hedge Equities Global	6.3%	0.4	4.9%	1.3	1.6%	0.2	6.1%	0.3
Hedge Equities Asia	0.3%	0.5	8.8%	0.0	1.5%	0.4	6.5%	0.2
Hedge Equities Japan	-6.2%	0.4	8.2%	-0.8	-6.4%	0.3	7.5%	-0.9
Macro Discretionary	2.1%	0.0	2.7%	0.8	2.1%	0.1	5.4%	0.4
Macro Systematic	0.7%	0.0	2.6%	0.3	2.4%	0.0	5.7%	0.4
Portfolio Insurance	3.4%	-0.6	6.3%	0.5	-7.6%	-1.3	12.6%	-0.6

The table shows annualized average alphas of emerging hedge funds and large hedge funds. For each strategy, we compute the alpha as beta-adjusted returns relative to the S&P 500 index. The tracking error is the annualized standard deviation of the monthly alphas. The information ratio shows the ratio of alphas and tracking errors. The table shows performance for the 5-year period ending March 2010.

Source: Investcorp.