

THE PURSUIT OF ALPHA IN A FUND OF HEDGE FUNDS

A Performance Attribution Analysis

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The hedge fund sector has grown at a rapid pace over the last several years. There are a record number of hedge funds, and hedge fund of funds in the marketplace. While investors have considerably more choices, managers strive to clearly differentiate their process and performance versus their peers. As a result, measuring and understanding the differences among funds is as critical as ever.

A measure frequently used to quantify the difference in manager performance is Alpha or, in a nutshell, the value added that a portfolio manager generates. Explaining the sources of alpha in an investment process supports and validates the process by providing facts, credibility, quality control, and relational understanding. These

measurements can be used by investors to evaluate specific decisions made by a manager in an investment process and explain relative performance.

The sources of Alpha in an individual hedge fund's investment process can be identified utilizing direct security analysis, provided the data is available. Performance can be analyzed and attributed to specific decisions made in an investment process such as market exposure, sector allocation, geographic diversification, and individual security selection. This analysis can identify specific areas where a manager demonstrated added value in his or her process.

The sources of alpha in a hedge fund of funds are equally important, however much more challenging to identify. Explaining the sources of alpha and relative

performance is essential to understanding the quality of decisions made by the hedge fund of funds manager. These measurements give insight into the investment process, act as quality control, and can explain relative performance. They are key factors in understanding and quantifying potential for future success.

The purpose of our analysis is to examine the sources of relative performance in a hedge fund of funds. Rather than describe alpha from the traditional capital markets theory perspective, we examine performance from the perspective of the active choices made by a hedge fund of funds manager, including sector/strategy selection and specific performance of underlying managers. While risk-adjusted performance is an

important measure, our discussion focuses on some of the fundamental decisions hedge fund of funds managers make.

The investment management process for a hedge fund of funds combines traditional asset management methodology with analysis specific to the alternatives asset class. The cornerstones of this process are research and portfolio construction. Research seeks to identify the underlying factors that drive the potential performance of a specific hedge fund. Portfolio construction manages the size and exposure of investments to sectors and managers, blending and balancing the relative value of risk versus return. Attribution analysis of the active decisions in an investment process can measure the quality of a hedge fund of funds manager's active decisions and identify the key components that drive performance.

The first active decision, while not usually considered a traditional source of performance attribution, is the choice of a benchmark. One may argue there is no real benchmark for a hedge fund of funds, and may view Labor or some absolute measure of return as the ultimate objective. However, several recognized

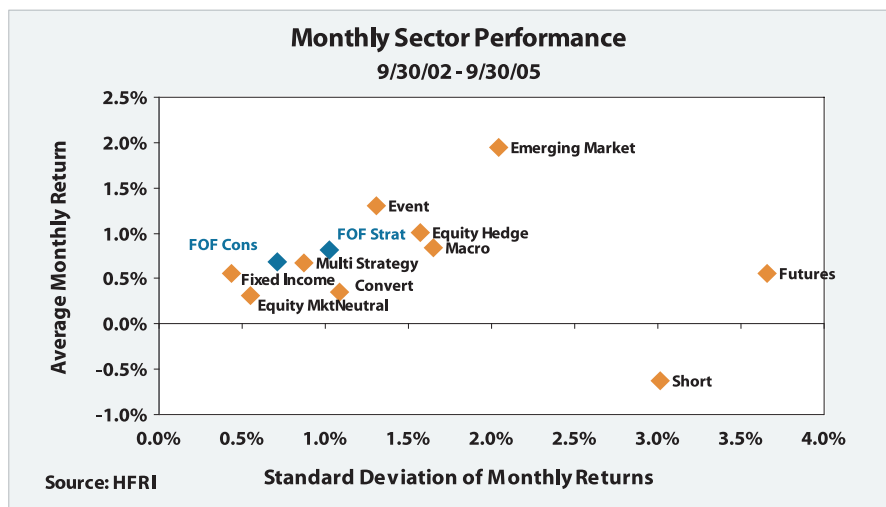
benchmarks are available in the hedge fund of funds universe. Each has advantages and disadvantages but all are designed to be the composite performance of other hedge fund of funds. Ultimately, a fund of funds investor looks for his investment to provide diversification from traditional investment offerings. Each fund of funds benchmark, in its own way, provides a measure of that alternative investment and any diversification that it brings. The fact that some of the benchmarks available are not investable is a problem for the manager, not the investor. Performance attribution performed from the perspective of any of these benchmarks follows from the methods illustrated here.

The next active decision for a hedge fund of funds manager is sector allocation. Several different

fund of funds benchmarks are available, each with a different range of volatility. This difference in volatility comes primarily from the different sectors (or strategies) of the hedge fund universe. The choice of sectors by the manager is a significant source of performance. The charts shown in Figure 1 and Figure 2 emphasize the importance of sector selection by displaying the historical monthly returns and risk of various hedge fund sectors. While the last three years have been very favorable to some sectors such as Event and Emerging Markets, there is certainly no guarantee of stability in this behavior.

A hedge fund of funds provides ample opportunity for risk reduction through sector diversification. This diversification is also the source of significant performance opportunities. As

Figure 1



displayed in Figure 2, the historical average correlation of .4 among hedge fund sectors allows for the construction of various portfolios at targeted differential levels of risk. This is demonstrated by the difference of the (HFRI) Fund of Funds Conservative Index and the (HFRI) Fund of Funds Strategic Index in the historical returns chart illustrated in Figure 1. Each portfolio is targeted at a different risk and return level.

The next active decision in a hedge fund of funds investment process is manager selection. The selection of managers within each sector provides another measure of return attribution. The dispersion of returns within any given sector of the market is quite significant due to varying investment styles and a manager's ability to generate alpha. This helps lower the volatility of

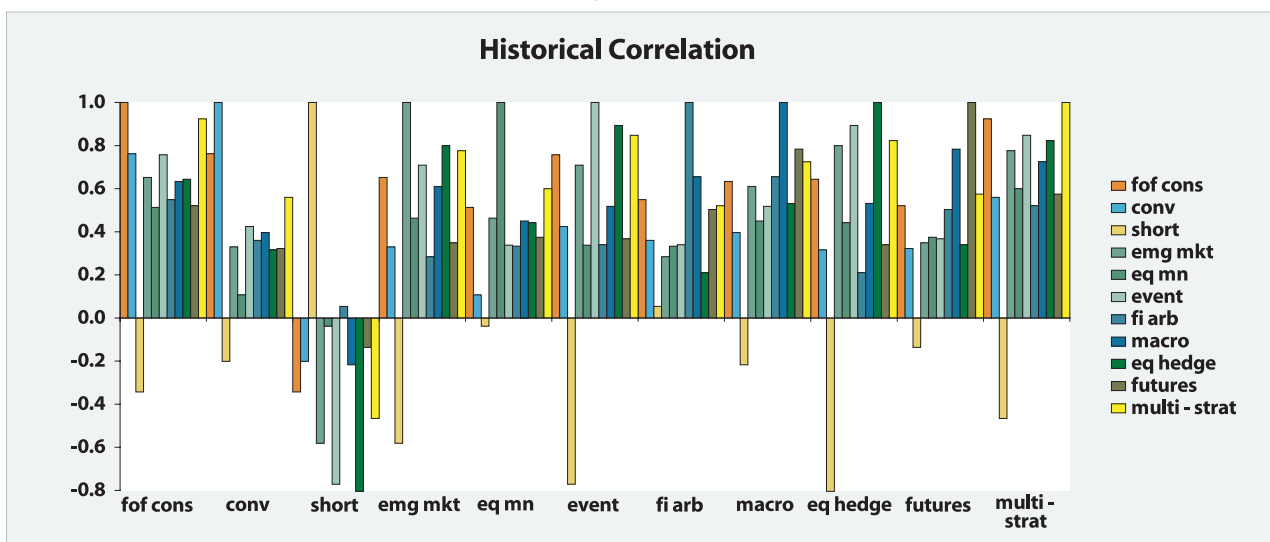
returns coming from a given sector, and adds to the opportunities derived from individual manager choices. Clearly, manager selection plays an important part in a hedge fund of funds investment process and must be measured and analyzed.

A hedge fund of funds investment process that is driven purely by a bottoms-up approach of choosing managers introduces tracking error relative to a benchmark. This is because such an investment process ignores the underlying allocation to sectors within the respective benchmark. Conversely, a top-down approach which chooses to actively manage sector exposure and create an index like return within the sector, introduces tracking error through the differences in the sector allocations as well. All hedge funds of funds are a blend of these

two management methods. Performance attribution can be used to measure the risks inherent in each of these approaches.

The goal of performance attribution is to break down relative performance into the separate active decisions being made by the hedge fund of funds manager. Most notably, these decisions include the strategic allocation to various sectors/strategies and the choice of managers within those sectors. While the methodology that is outlined here to measure those decisions is reasonable, it should be noted that the performance attribution measurements for the hedge fund arena have to address some significant differences from traditional portfolio management and performance attribution methods. Primary amongst those differences are leverage and

Figure 2



lockups.

Different hedge fund managers may and often do employ varying degrees of leverage within each sector. Therefore, their performance in absolute terms or relative to a peer universe may not be accounted for appropriately for the level of assumed risk. In addition, hedge fund investments are not very liquid and commonly have lockups often requiring an investment to be held for at least a full year. Benchmarks on the other hand have a fair amount of turnover that alters the sector allocation on a monthly basis, albeit not very significantly.

The mathematics behind this type of performance attribution is included at the end of the article. For now, we focus on a related application. Our objective here is to use this methodology to explain the difference in returns

between two particular hedge fund of funds, the AIJED Associates (AIJED) and Gordon Associates (GA) funds. We chose these funds because of particular knowledge of their actual holdings. It is also possible to discuss the relative performance of each fund based on their respective HFRI benchmark, though this is not our current focus.

Our interest here is to measure and explain the difference in returns of the two hedge fund of funds. As an application of this methodology, we treated the AIJED fund as the benchmark for the GA fund and analyzed the relative performance from this perspective.

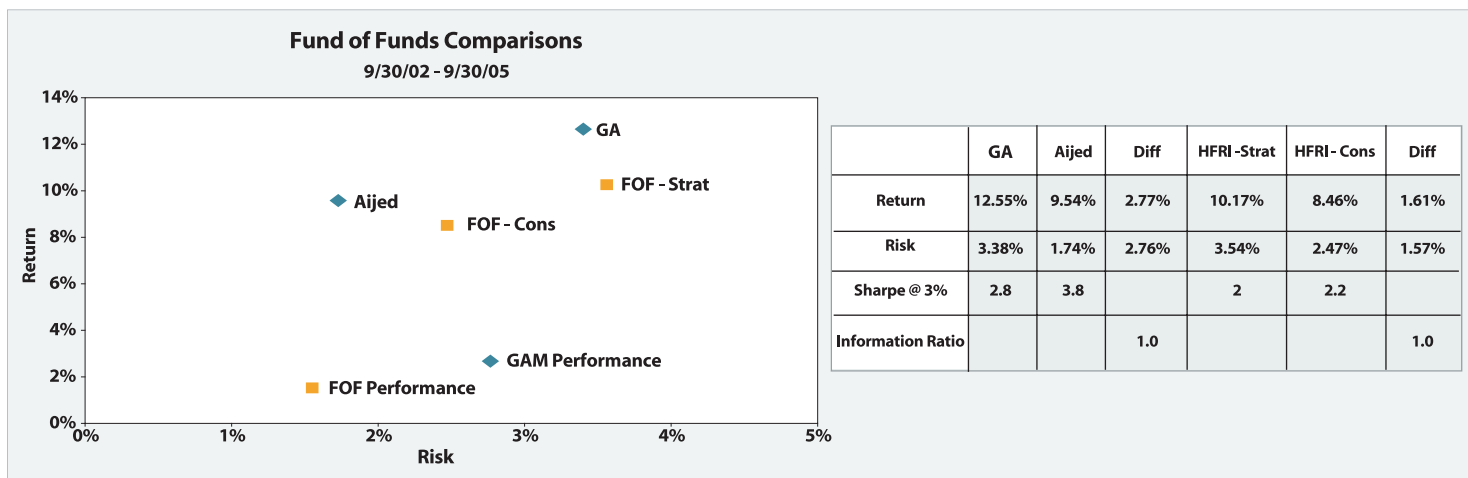
Before delving into the details of the analysis, Figure 3 illustrates the historical performance of the hedge fund of funds along with

the two HFRI benchmarks discussed.

The relationship between the two hedge fund of funds share certain features with the comparison of the HFRI benchmarks. For example, over the relevant time period, the more volatile fund had a higher return. It is interesting to note that the information ratios are identical. While this is a coincidence, it indicates qualitatively the consistency of the performance of these two funds.

In our analysis we examine the active choices made by the manager. This includes the sectors selected, and how they actually performed. It should be noted that the assignment of a hedge fund manager to a specific sector classification is not always as straightforward as one would like. Many managers defy easy

Figure 3



classification. The assignment of a manager to a sector for benchmarking purposes requires a careful analysis of both qualitative as well as quantitative factors.

The starting point of any analysis is performance. The cumulative return for the two hedge fund of funds for the three years ending September 30, 2005 is indicated in Figure 4. The difference between the two funds is due to specific sector and manager choices and is represented by the green line.

For each month, the relative performance is decomposed into a 'sector' component and a 'security' component. The sector component represents the effect of being overweight or underweight in a given sector, combined with how that sector performed relative to the hedge fund universe. There are four possibilities that contribute to performance:

	Overweight Sector	Underweight Sector
Sector Outperforms	Positive	Negative
Sector Underperforms	Negative	Positive

For example, if the portfolio is overweight in a sector that outperforms the broad universe, there will be a positive impact on performance according to this attribution model. Conversely, if an outperforming sector is underweighted, there will be a negative impact attributed to the

Figure 4
Wealth Comparison for Funds

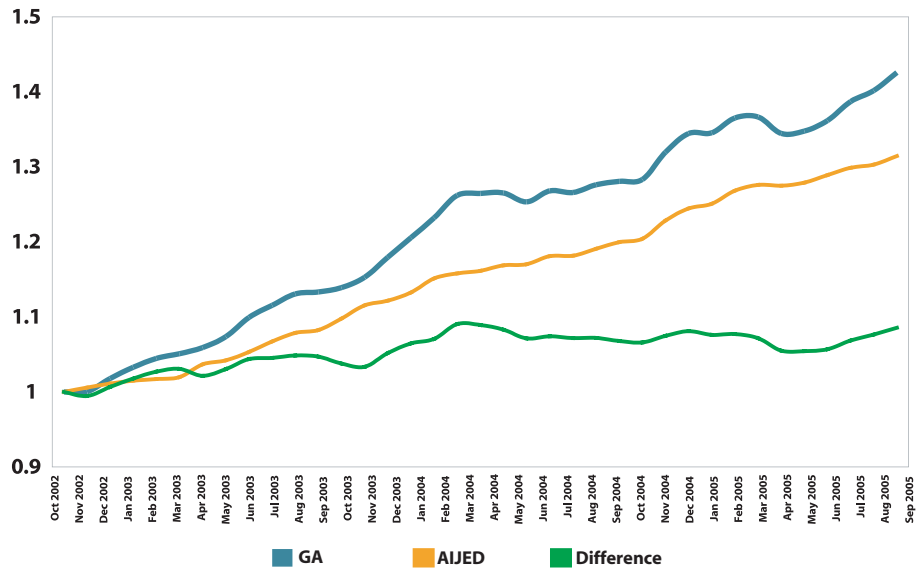
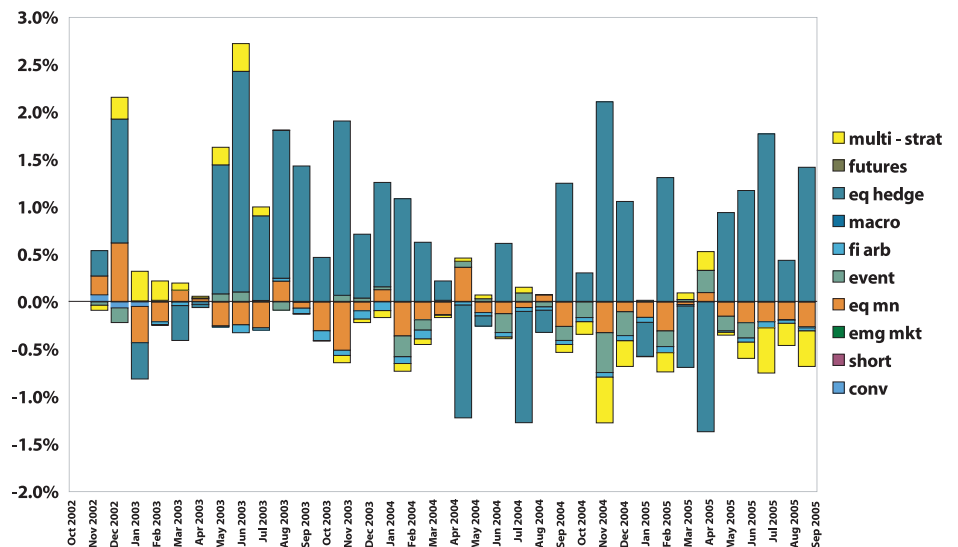


Figure 5
Performance Effect due to Sector Difference



sector policy.

The chart in Figure 5 illustrates the effect of these sector differences. On a monthly basis, sector policy differences have contributed an average of 39 basis points with a standard deviation of 78 basis points.

The security component measures the combined effect of how individual managers perform relative to their peer group. If a manager outperforms his representative sector, there will be a positive contribution to the security component of the attribution. Conversely, if a manager underperforms, the security attribution will be negative.

Figure 6 illustrates the net effect of these security policies for each month. Here, the average monthly result is -16 basis points with a standard deviation of 82 basis

points.

There are two methods to aggregate these results. The first method in Figure 7 combines both components for each sector; the effect of relative weight as well as the respective choices of managers in each sector.

The second method in Figure 8 aggregates the results to produce the combined effect of Sector Policy and Security Selection. This decomposition is very useful because a manager has two primary decisions, in which sectors to invest and what to buy within the given sector. In this respect, hedge fund of funds management is very similar to traditional long only portfolio management, with sector policy and security selection being the dominant drivers in portfolio construction.

We can similarly accumulate these monthly values in Figure 9

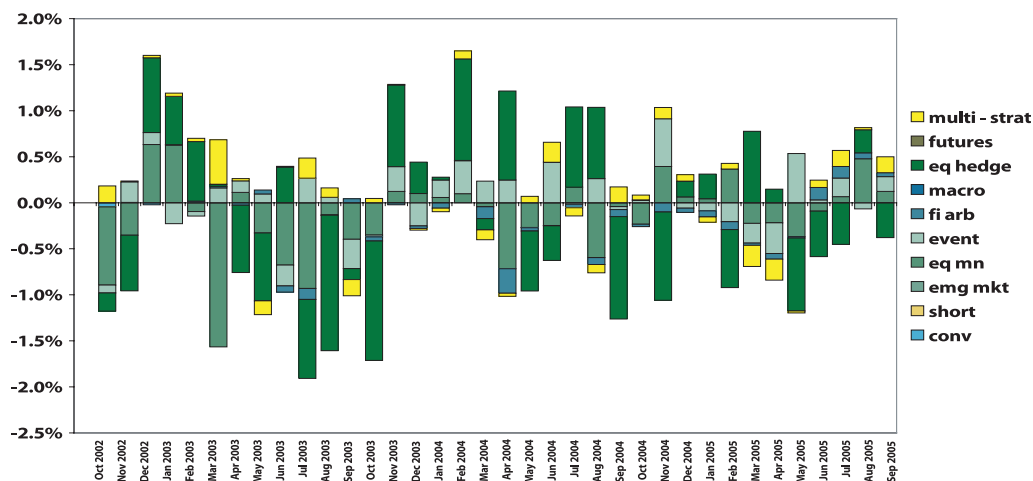
to see trends in the performance due to these factors.

We can now revisit the risk-return chart displayed in Figure 10 with the addition of several new data points. While the relative performance of GA was 2.8%, we see that 4.7% was due to the sector policy of holding more volatile higher performing sectors (with an information ratio of 1.7); and -1.9% (with an information ratio of -0.7) was due to the performance of GA managers as compared to AIJED managers.

Finally, in Figure 11 we illustrate the combined performance by sector due to both Sector Policy and Manager Selection.

This analysis provides a multi-dimensional view into the relative performance of one fund of hedge funds versus another. These exhibits illustrate and quantify the sources of that performance

Figure 6
Performance Effect due to Security Selection



which are ultimately active decisions in a portfolio management process.

This methodology is easily applied to this problem because in this case we know the actual allocations for each of the hedge fund of funds. If this method is to be applied to a more traditional benchmark such as one of the HFRI indices, some insight would be required into how the benchmark was allocated across the sectors of the hedge fund universe. ○

Figure 7 Combined Attribution for each Sector

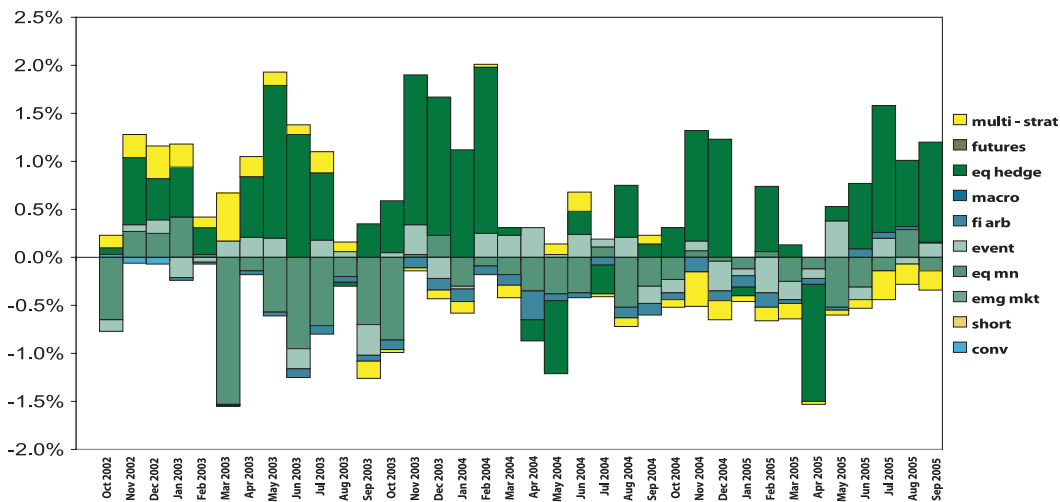


Figure 8 Monthly Attribution

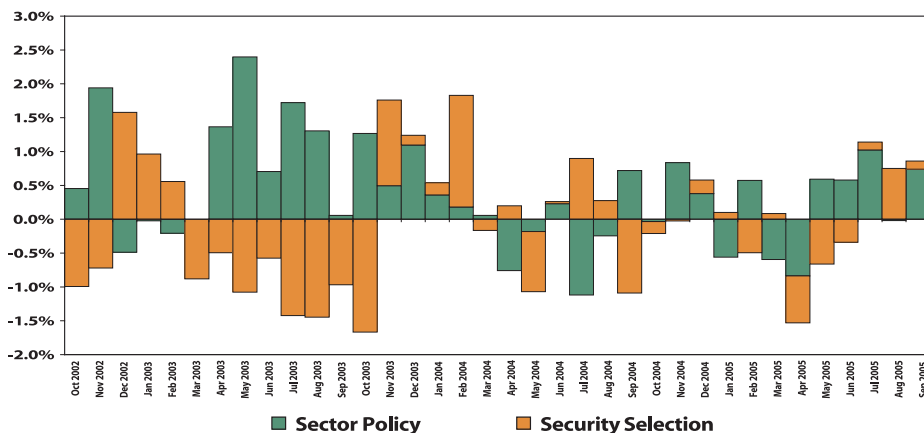


Figure 9 Cummulative Attribution

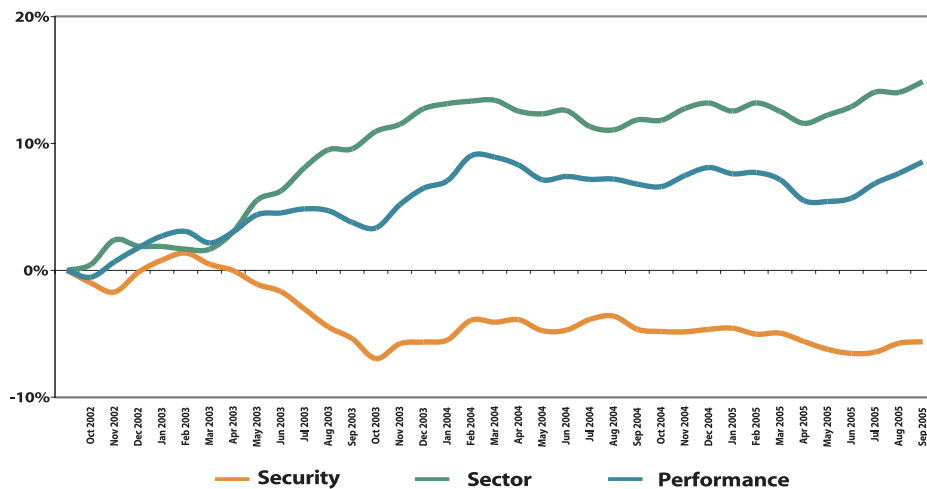


Figure 10

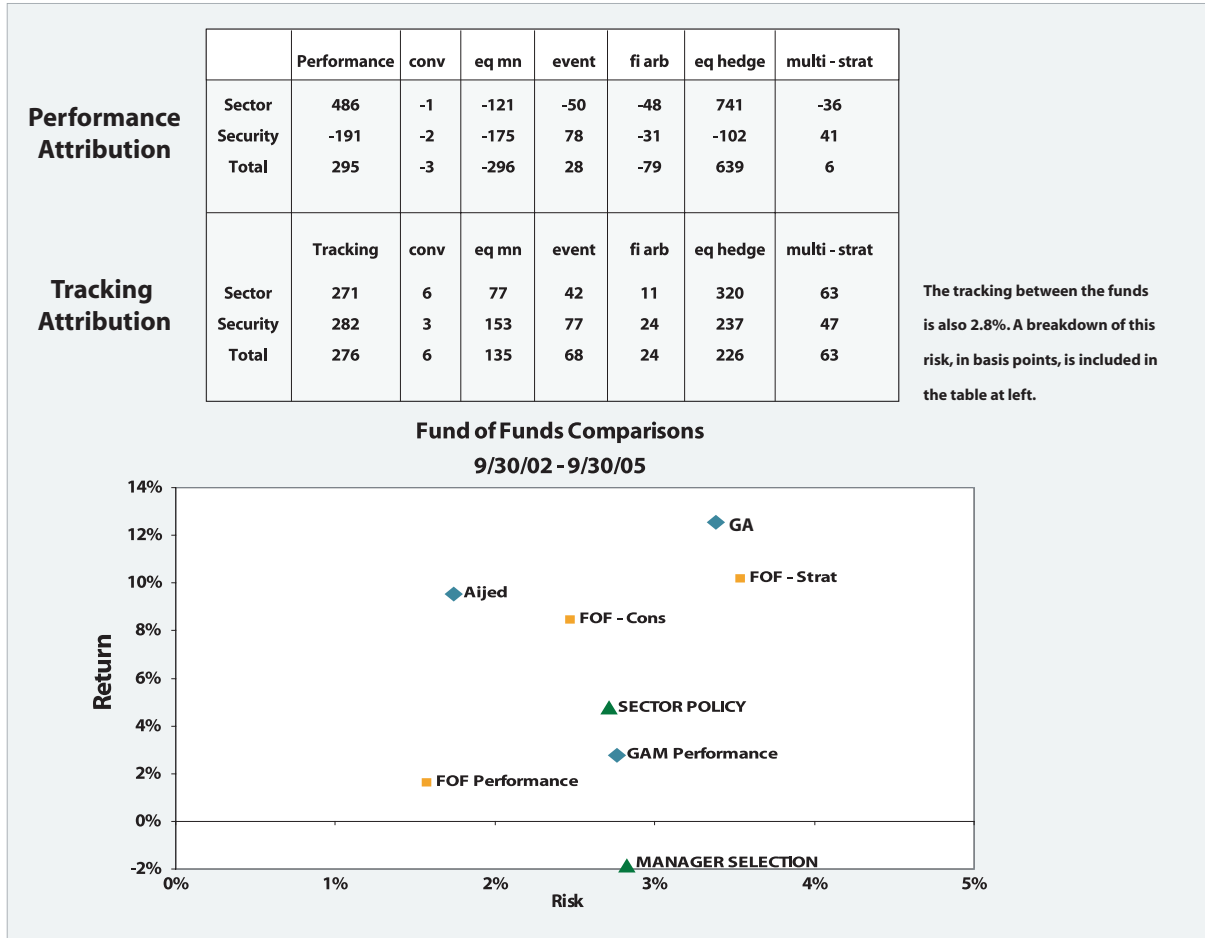
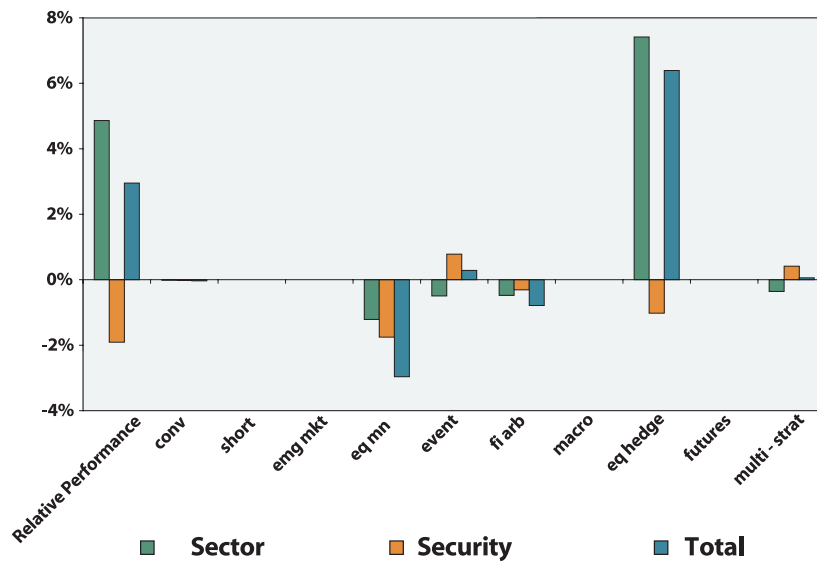


Figure 11



Performance Attribution Methodology

Notation:

w_i	= weight of manager $_i$ in the portfolio
x_j	= weight of sector $_j$ in the benchmark
R_i	= return of manager $_i$
S_j	= return of sector $_j$
R	= portfolio return
S	= Benchmark return

$$\text{Performance} = R - S$$

$$\begin{aligned} &= \sum_i w_i R_i - \sum_j x_j S_j \\ &= \sum_j \sum_{i \in j} w_i R_i - \sum_j x_j S_j \quad \text{where the inner } \sum \text{ on } i \text{ is for those managers in sector } j \\ &= \sum_j \sum_{i \in j} w_i R_i - \sum_j w_j S_j + \sum_j w_j S_j - \sum_j x_j S_j \quad \text{where } w_j = \sum_{i \in j} w_i \\ &= \sum_j (\sum_{i \in j} w_i R_i - w_j S_j) + \sum_j (w_j - x_j) S_j \\ &= \sum_j (\sum_{i \in j} w_i R_i - w_j S_j) + \sum_j (w_j - x_j) (S_j - S) \quad \text{since } \sum_j (w_j - x_j) = 0. \end{aligned}$$

The first term represents the contribution of individual managers to the overall performance. It is positive if a manager outperforms his or her respective benchmark and that performance contributes to the attribution proportionate to the weight in the portfolio.

The second term represents the sector contribution and represents the combination of relative weight and relative performance of the sector holdings. The contribution is positive if either an outperforming sector is over weighted or an underperforming sector is under weighted.