# Traditional investment versus absolute return programmes

*Hilary Till* and *Joseph Eagleeye* argue that the differences between the hedge-fund and traditional-investment industries arise from competing views of the key sources of investment returns.



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Given the ongoing stock-market downdraft since March 2000, US mutual fund inflows have dramatically slowed while hedge fund investing has exploded, as pointed out in Till (2002a). As a matter of fact according to Galbraith and Viviano (2002) of Morgan Stanley, net hedge fund inflows grew to the same size as net mutual fund inflows in 2001.

Some have argued that there is an accelerating convergence between the hedge-fund industry and traditional institutional fund management. This article will argue the opposite: that in a very fundamental way, these two investment industries are still quite distinct. The article will assert that the differences between traditional investment programmes, which are designed around outperforming benchmarks, and alternative investment programmes, which are designed to deliver absolute returns, mainly result from competing views on sources of investment returns.

These competing views then result in differing:
- investment processes;
- risk management practices; and
- roles for financial service providers.

This article will also maintain that the differing types of absolute-return programmes result from varying investor preferences in return-to-risk trade-offs.

One can summarize the competing views on sources of investment returns as follows:
- asset allocation is the dominant performance driver;
- absolute returns should be expected from each investment; and
- a hybrid view.

## 1. Asset allocation and bench-marked-based management

The view that the dominant source of investment returns is from asset allocation has resulted in benchmark-based management.

### Performance attribution studies

Performance attribution studies have historically shown that the decision by an institutional investor on how to allocate among stocks, bonds and cash has been the key performance driver.

This view was originally derived from studies by Brinson *et al* (1986, 1991). In the 1986 study, the researchers looked at the returns of 91 large pension plans and found that 93.6% of the total variation in actual plan results could be attributed to the asset-allocation decision. In contrast, less than 5% of the returns were due to security selection. In the updated 1991 study, the authors found that asset allocation policy explained 91.5% of the variation in returns.

As a result, the idea that asset allocation is more important than security selection has been very well ingrained in the minds and practices of traditional investment practitioners.

For example, as discussed in a Harvard Business School (1992) case study, the *main* issue for a university endowment to resolve is what the very long-run 'policy portfolio' should be. The case study notes that the long-run expected returns from reasonable asset allocations are expected to equal the long-run average spending rate, which would then result in maintaining the real value of the endowment over very long periods of time.

### Capital asset pricing model

Under the capital asset pricing model (CAPM), in equilibrium all assets and portfolios have the same return after adjusting for risk. This model was justified for a quarter of a century by empirical studies.

Given that markets have been thought to be highly efficient, investors have been wary about the ability of investment managers to add value beyond a benchmark. Under CAPM, one would expect that, in the main, the only way to earn more returns is to take on more market risk.

### Long-term structural returns

The long-term average rate of return of the US equity market has been very attractive. From 1927 to 2001, the average return of return for the S&P 500 has been 12.7% per year. With rates of return of this magnitude, there has been very little incentive to allow investment managers too much discretion beyond equity benchmarks.

### Industry organization

The investment industry is currently orga-

nized around the idea that asset allocation is the most important investment decision and that individual managers should be allowed limited discretion around investment benchmarks.

Pension fund consultants and financial planners advise institutional and retail clients respectively on the most appropriate long-term asset allocation mix. These intermediaries assign benchmarks for each asset class within the overall recommended portfolio.

These consultants also recommend particular funds or managers to carry out a particular mandate with a specific benchmark. The chosen funds are then responsible for providing investment results that are relative to their benchmark.

The asset allocation choice and its benchmark are the investor's responsibility. *Importantly, the investor owns the risk of the benchmark's results.*

*Investment process*
The investment process is centred around ensuring that any deviation from the benchmark is an active decision. Furthermore, the scaling of all active bets should correspond to the degree of confidence in the bet. Figure 1 illustrates the investment process for benchmark-based traditional investments.

*Risk measurement and monitoring*
The risks that are monitored in traditional asset management are style drift, tracking error and maverick risk.

In the event of style drift, the overall asset allocation model could be invalidated. This would be very troublesome since it is this plan, which is regarded as the dominant return driver, as previously noted.

The structural returns due to the benchmark are sufficient, so it is not advantageous to allow a manager too much discretion. Therefore, managers are limited in the amount of tracking error with respect to the benchmark that they are allowed.

Notably, the total risk of a manager's portfolio is not measured: *the manager's risk is always viewed in relative terms.*

*Consequences*
One consequence of the way that traditional asset management has evolved is that it can be acceptable for a US mutual fund to lose over 50% of its market value. This has been defensible as long as these losses are consistent with the performance of its bench-
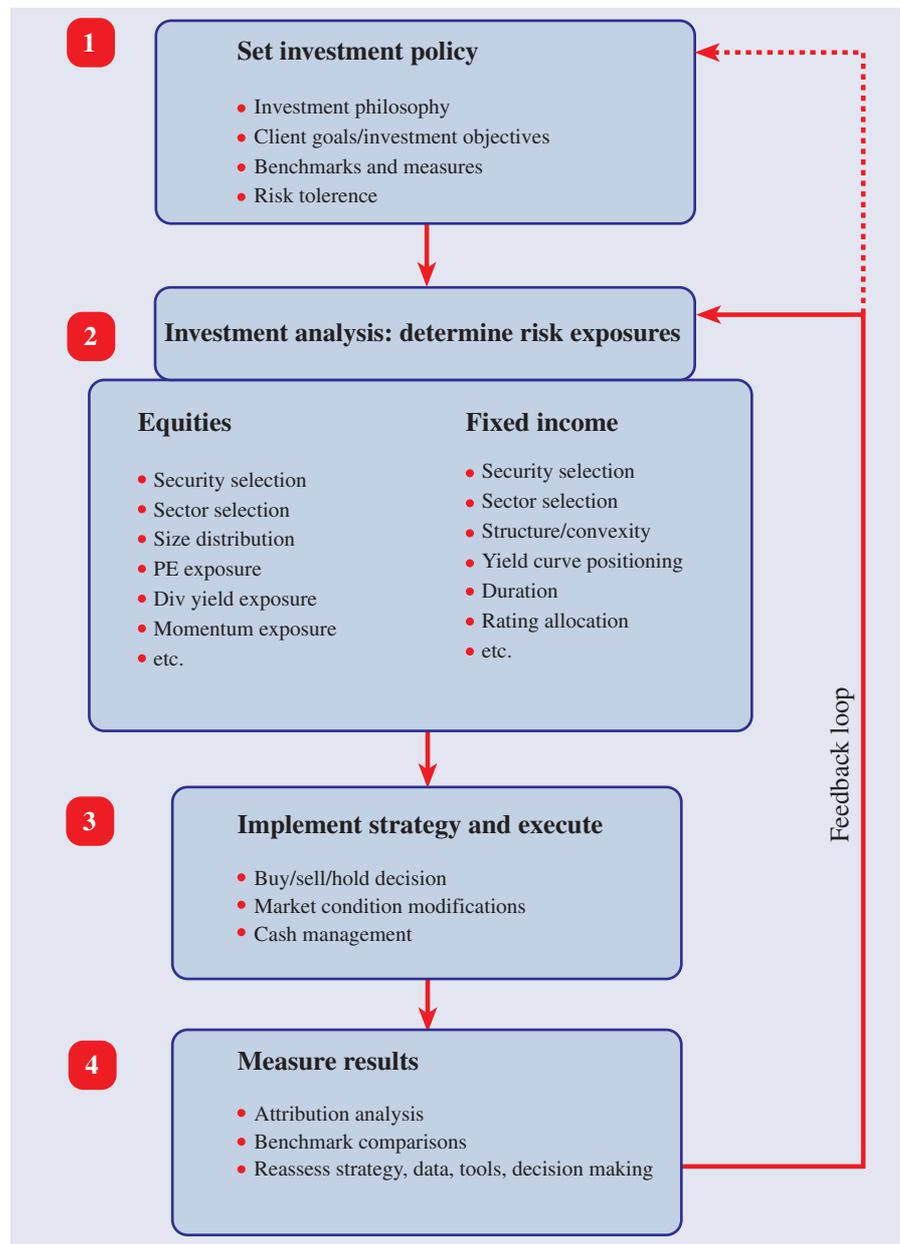


**Figure 1.** General institutional investment process flow (reproduced from Kuenzi (2003), exhibit 1).

mark or product category. In 2001, this was the case for the aggressive equity-growth style.

The manager can note that the performance of the fund is a result of its particular design and also note that it will continue offering the product. Press articles on the manager are broadly sympathetic to the fund manager, noting the discipline it takes for a manager to be faithful to the concept of 'style purity' through market cycles.

## 2. Absolute returns
The post-2000 view is starting to depart from the assumptions noted above, which

has consequences for the investment industry's organization, investment processes, risk management and monitoring, and public expectations for managers.

*Long-term view on structural returns has been shaken*
It may be the case that the long-term average returns in the US equity market have been above 10% annually since 1927. But there have been long periods of time where one had to be very patient, as shown in table 1.

*Performance attribution studies questioned*
It may be the case that institutional investors

**Table 1.** Dow Jones industrial average (excerpt from Mr Buffett on the Stock Market 1999)).

| | |
|---|---|
| 31 December 1964 | 874.12 |
| 31 December 1981 | 875.00 |

**Table 2.** Hierarchy of global choices (reproduced from Kritzman and Page (2002), table 6).

| Relative value of exchange options[a] | |
|---|---|
| Security selection | 3.82 |
| Country sector allocation | 2.85 |
| Country allocation | 2.54 |
| Global sector allocation | 1.58 |
| Asset allocation | 1.00 |

[a] The value of the asset allocation option is normalized to equal 1.00.

**Table 3.** Comparison of wealth creation in biotechnology (source Ineichen (2003), exhibit 9).

| | AMEX Biotechnology—Pharmaceuticals | HFRI Healthcare/Biotechnology |
|---|---|---|
| Initial investment | 100 | 100 |
| December 1997 | 113 | 101 |
| December 1998 | 122 | 108 |
| December 1999 | 274 | 159 |
| December 2000 | 442 | 240 |
| December 2001 | 420 | 246 |
| July 2002 | 252 | 194 |
| Return 1997–1999 | 174% | 59% |
| Return 2000–2002 | −8% | 22% |
| Under water | −43% | −21% |
| Loss recovery return[a] | 75% | 27% |
| Recovery at 8% pa | November 2009 | September 2005 |

[a] Return required to recover losses.

**Table 4.** Comparison of wealth creation in financials (source Ineichen (2003), exhibit 14).

| | NYSE financials | HFRI financials |
|---|---|---|
| Initial investment | 100 | 100 |
| December 1997 | 141 | 149 |
| December 1998 | 148 | 131 |
| December 1999 | 147 | 129 |
| December 2000 | 184 | 176 |
| December 2001 | 169 | 207 |
| July 2002 | 151 | 209 |
| Return 1997–1999 | 47% | 29% |
| Return 2000–2002 | 3% | 63% |
| Under water | −18% | 0% |
| Loss recovery return[a] | 22% | 0% |
| Recovery at 8% pa | February 2005 | Index at peak level |

[a] Return required to recover losses.

have indeed chosen asset allocation as the key area to exercise investment discretion. But, as argued by Kritzman and Page (2002), it may be that the 'natural opportunity set presented by the capital markets' could be far greater than what is offered through discretion in asset allocation.

The authors simulate thousands of portfolios to determine the natural dispersion of performance arising from five different investment activities, including security selection, country sector allocation, country allocation, global sector allocation and asset allocation. Their proposition is that if investors have skill, the most important investment areas are the ones that have the greatest dispersion of results from which to exploit opportunities.

As shown in table 2, Kritzman and Page found that skill in security selection dominated all other investment activities with skill in asset allocation providing the least benefit, given the possible investment opportunities in each investment area.

*Downside risk protection*
Once one no longer has faith in equity benchmarks providing target returns, downside risk management becomes crucial.

Ineichen (2003) noted that:
'Investors are not indifferent whether an active manager simply captures the premium of the asset class or whether he or she tilts the return distribution of the portfolio to the right'.

The author notes that long-short equity-sector hedge funds have opportunity sets that are correlated to their respective sectors, resulting in the active sector funds having returns that are correlated to their sector

indices. But even so, the hedge funds control their downside risk so that ultimately their returns compound at a higher rate than their respective sector indices.

Ineichen contends that long-term superiority in investing is due to balancing investment opportunities with *total* risk.

Two illustrations of this point are shown in tables 3 and 4. Each example shows that the recovery to peak investment levels is considerably briefer with an active sector hedge fund than with its corresponding sector index.

*Consequences*
Once one expects absolute returns from each investment, one correspondingly expects their investment managers to keep losses under control. *Specifically, it is unacceptable for a manager to lose more than 50% of market value.*

Therefore when a hedge fund loses more than 50% of market value, it closes down

and liquidates all of its positions, as was the case in the fall of 2002 with the fixed income arbitrage funds operated by Beacon Hill Asset Management.

*Event risk: individual managers*
Since it is unacceptable for a manager to have large losses, individual hedge fund managers pay particular attention to event risks. An example of an 'event risk' analysis for a total-return portfolio is as follows.

This example portfolio consists of a long Russell 2000 versus short S&P 500 futures trade and a long Municipal Bond versus short Long-Bond futures trade. These trades are normally unrelated. During a scenario test of the portfolio's sensitivity to event risk, one finds that the combination of these two strategies results in an exposure to a liquidity shock, as shown in table 5.

The short legs of each spread are the more liquid of the pair. As a result, both of these trades are at risk to a flight-to-quality event

**Table 5.** Evaluation of portfolio event risk.

| Event | Maximum loss |
|---|---|
| October 1987 stock market crash | –4.11% |
| Gulf War in 1990 | –4.12% |
| **Autumn 1998 bond market debacle** | **–6.42%** |
| Aftermath of September 11 attacks | –3.95% |
| Worst-case event | Maximum loss |
| Autumn 1998 bond market debacle | –6.42% |
| Value-at-risk based on recent volatility and correlations | 3.67% |

Source: Premia Capital Management LLC.

as happened in the autumn of 1998. The scenario tests also show that the autumn of 1998 scenario is the worst case.

One response to a concentrated risk to a liquidity shock has been to purchase out-of-the-money fixed-income calls. These hedges would cushion the portfolio in the event of another liquidity crisis.

*Event risk: funds of hedge funds*
Similarly, fund of hedge fund managers attempt to model their portfolio's return distribution when all the strategies are influenced by a dominant event.

As explained in Till (2002a), an investor frequently uses the normal distribution to represent returns of a diversified portfolio since one assumes that it is acceptable to use the central limit theorem. Under this theorem, as the number of randomly distributed independent variables becomes large, the distribution of the collection's mean approaches normality.

This would be fine for a portfolio's return if its individual strategies were never influenced by a dominant event. But in practice this does not happen, as seen during the October 1987 stock-market crash, the autumn of 1998 bond debacle, and during the aftermath of the September 11 terrorist attacks.

Johnson *et al* (2002) recommend addressing this problem by representing an investment's distribution as a combination of two distributions: one for peaceful times and one for eventful times. The distribution during eventful times would not just include higher volatility, but also the greater correlation among strategies that occurs during crises. A risk manager would explicitly determine the proportion of crisis returns in the combined distribution.

*Extreme risk*
As summarized in Till (2002b), Agarwal and Naik (2003) recommend applying the conditional value-at-risk (CVaR) framework to hedge funds. They advocate replacing value-at-risk (VaR), which has been popular among traditional asset managers. The authors explain that;

'[Whereas] VaR measures the maximum loss for a given confidence interval, … CVaR corresponds to the expected loss conditional on the loss being greater than or equal to the VaR'.

If an investor's goal is to create portfolios for which the magnitude of extreme losses is kept under control, then that investor should consider using CVaR as their risk constraint.

## 3. Hybrid view
A third view on the sources of investment returns blends both the asset allocation and absolute-return approaches.

Under this view, which is based on Cochrane (1999):
- markets are largely efficient;
- the average investor must hold the market portfolio;
- some investors can achieve extra returns by in effect selling insurance to other investors.

Those institutional investors who are *not* constrained by market segmentation issues and liquidity concerns can take advantage of niche opportunities. But their main source of returns still derives from their asset allocation decision.

*Risk premia*
The latest stream of thought by financial economists is that there are actually multiple sources of risk besides the market risk factor, which can produce high average returns. If an investor passively bears any of these risks, that investor will earn a return which is not conditional upon superior information.

Frequently, there may be large losses from bearing one of these risk factors, resulting in a short-option-like return distribution, but the returns over time are sufficient to make the activity profitable. These returns are called 'risk premia'.

This section will cover the unique investment processes, performance metrics, risk management, and industry organization considerations for niche, risk premia investment programmes.

*Investment process for risk premia strategies*
In risk premia investment programs, an investment manager must decide how much to leverage the strategy, and whether to give up any of its returns to hedge out the strategy's extreme risks.

When one earns a risk premium, an investor is implicitly short options and is therefore exposed to asymmetric payoffs. During portfolio construction, one should use a risk metric that takes into consideration the potential asymmetry of an investment's distribution.

In addition to CVaR, Signer and Favre (2002) propose another risk measure that takes into consideration the skewness and kurtosis of a distribution, as noted in Till (2002b). Skewness describes how asymmetric a distribution is. Kurtosis describes how fat the tails of the distribution are. The authors' new measure is 'modified VAR'. The authors examine how the efficient frontier is affected when using modified VaR rather than VaR as the risk constraint. They find that the benefits of hedge funds are represented too positively when not taking into consideration the extra moments of the investment's return distributions.

*Performance metrics*
Due care must be used in relying on the Sharpe ratio as a performance metric for risk premia strategies.

Four Yale University professors have derived an optimal strategy for maximizing the Sharpe ratio. The optimal strategy has a truncated right tail and fat left tail, as shown in figure 2. Furthermore, this strategy can be very nearly achieved by selling certain ratios of calls and puts against a core equity market holding, as illustrated in figure 3.

*Risk management*
Risk measures tend to solely focus on end-period losses. But with the ability to leverage, one must also ensure that investors can tolerate the potential within-period losses. As a result, Kritzman and Rich (2002) advocate the use of the risk measure, 'within-period probability of loss', which is illustrated in figure 4.

*Industry organization*
Under the view that a number of hedge fund strategies are in fact risk premia strategies, one can make the following predictions about the hedge fund industry:
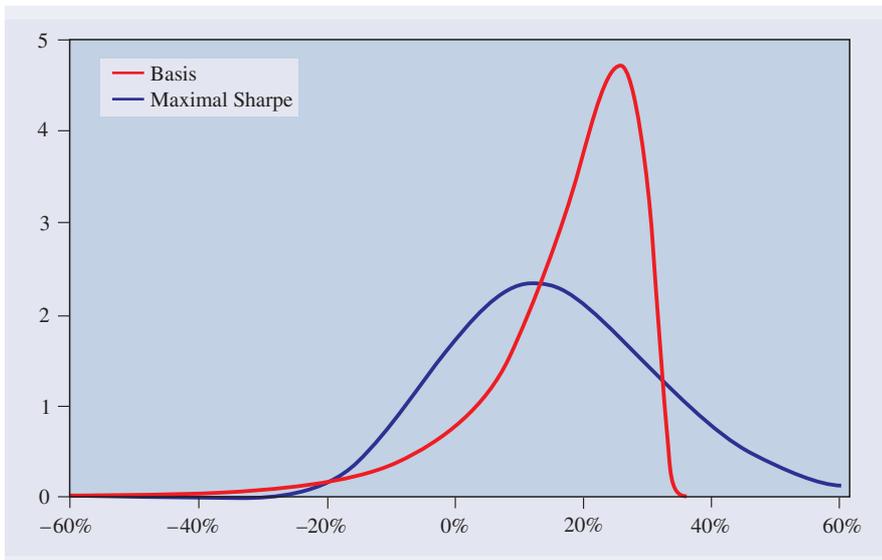
**Figure 2.** The distribution of the Sharpe ratio maximizing portfolio (reproduced from Goetzmann et al (2002), figure 2).
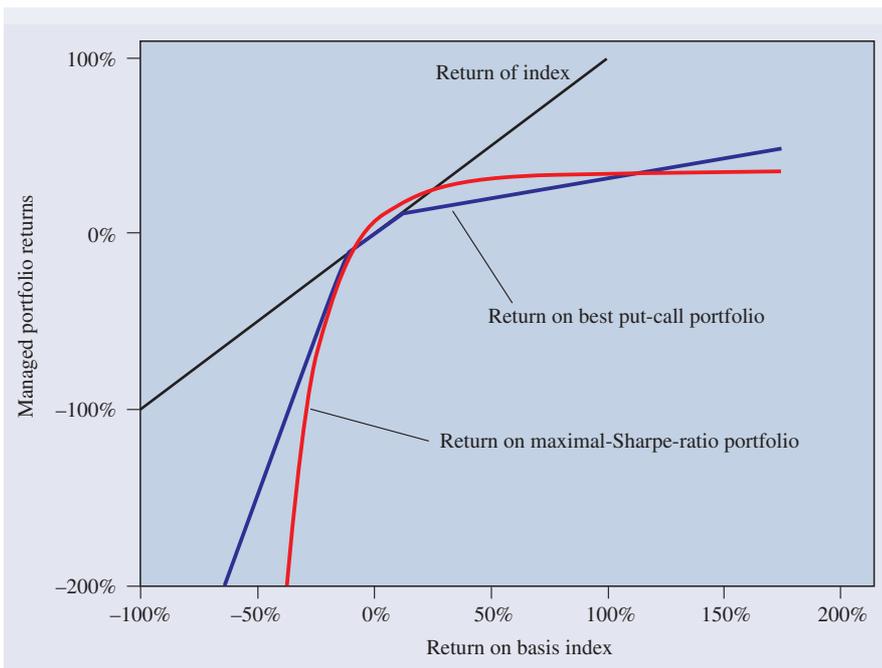


**Figure 3.** Payoff on the maximal-Sharpe-ratio portfolio with options (reproduced from Goetzmann et al (2002), figure 4).

- hedge-fund managers with genuine structural niches will survive;
- they will facilitate the ability of some investors to earn extra returns by in effect selling insurance to others;
- those managers with trading strategies that have no structural edge will disappear.

## 4. Varying investor preferences

Siegmann and Lucas (2002) note that varying investor preferences result in different types of absolute-return products. They argue that the optimal behaviour of a loss-averse investor depends on whether an investor is in a situation of surplus. For those in surplus, the optimal strategies have long option profiles (with particular strike prices). For those who do not have a surplus, the optimal strategies are income-producing, short option-like payoffs (again with particular strike prices).

Siegmann further notes that the optimal strategy also depends on the available options (or achievable dynamic strategies). This will determine whether the long call or the straddle pay-off is optimal in the case of a positive surplus. And similarly for negative surplus and the short put and short straddle pay-off. The author also notes that it is a matter of ongoing research to interpret the properties of dynamic strategies in terms of specific option strategies.

*Income-producing short option-like payoffs*
Kao (2001) states that:
  'Institutional investors often use hedge funds as part of absolute return strategies in pursuing capital preservation while seeking high single to low double digit returns'.
  This kind of return stream has been achieved by arbitrage strategies.

*Equity arbitrage strategies*
Agarwal and Naik (2003) found that the payoffs of a number of arbitrage strategies resemble that from writing a put option on the market index, as discussed in Till (2002b). In their study, they apply stepwise regressions on a number of equity hedge fund strategies. They regress the strategies against a number of style factors and include options on market indices, too.

For example, the authors find that the following risk factors are significant in explaining the returns of the Hedge Fund Research Event Arbitrage index: a short out-of-the-money put on the S&P 500 along with an equity market capitalization factor and an equity value versus growth factor.

*Long option strategies*
Anecdotally, the very wealthy clients of European fund-of-funds do prefer strategies that have a lot of optionality, including Commodity Trading Advisors (CTAs) and Global Macro. These funds have at times gravitated to managers who are in the midst of large drawdowns, believing that with such a large dispersion of results, there is an increased chance of a large upside.

If Siegmann and Lucas' model is correct, though, for everyone else, the appropriate hedge-fund strategies are income-producing, arbitrage strategies, which are implicitly short options as discussed by Agarwal and Naik.

The researchers, Fung and Hsieh, have linked the returns of both the CTA and Global Macro hedge fund style to long
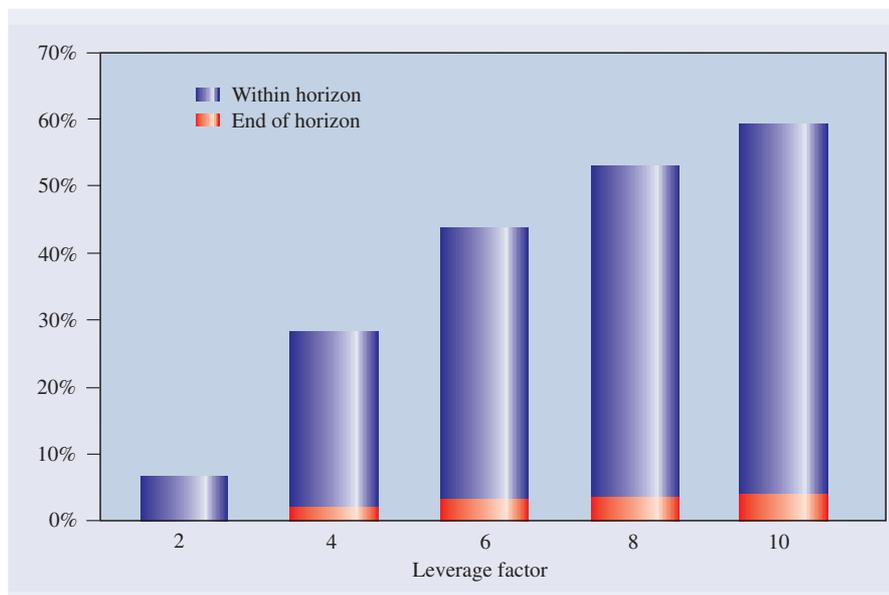
**Figure 4.** Probability of 10% loss; 3-year horizon (reproduced from Kritzman and Rich (2002), figure 2).
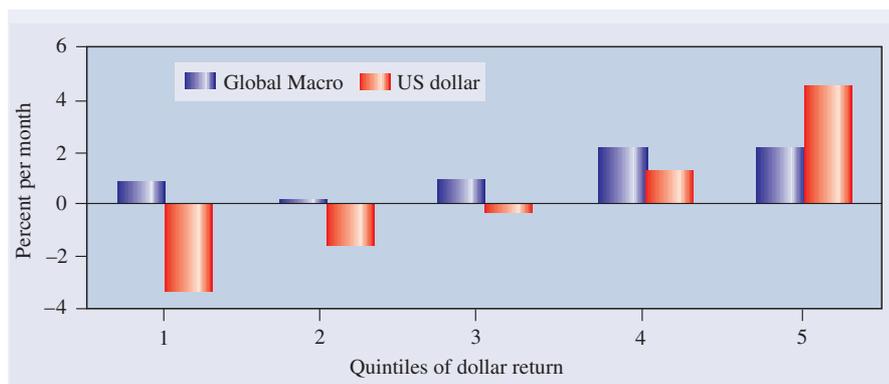


**Figure 5.** Global Macro style versus the dollar (reproduced from Fund and Hsieh (1997), figure 5).

option-like profiles, as discussed below.

*Commodity trading advisors (CTAs)*
Fung and Hsieh (2001) propose searching for rule-based strategies that can be implemented systematically and passively, which mirror a dynamic trading strategy's returns.

They use this approach in modeling the returns of trend-following CTAs. In this case, they find high explanatory power in modeling the return profile of CTAs as equivalent to look-back straddles on currencies, commodities, and fixed income. In this way, they are able to capture the nonlinear, option-like return of profile of CTAs better than buy-and-hold benchmarks.

*Global Macro*
Fung and Hsieh (1997) suggest focusing on extreme events to detect nonlinear correlations between hedge fund strategies and risk factors. Figure 5 illustrates how the Global Macro style behaves like a straddle on the US dollar. (A straddle is the combination of being long a call option and long a put option.)

**Conclusion**
Whether the traditional investment industry and hedge-fund industry converge is a matter of debate. At present these two industries respond to very different expectations on how sources of investment returns should be generated, which result in differing investment processes and risk management. It is very plausible, though, that the traditional investment industry will have to incorporate the total-return industry's emphasis on downside risk protection in the post-bubble market environment. And within the total-return industry itself, varying investor preferences will continue to drive the creation of different types of absolute-return investment products, which have widely divergent return-to-risk profiles.

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