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Asymmetric Returns

- In this document we look at sector specialists, ie, long/short managers who are dedicated to one sector only. Despite a dramatically superior performance compared to their long-only peers, the fact that sector specialists have retained a high correlation with overall sector returns has proven to be a major disadvantage, as absolute return investors generally seek low correlation.
- Nevertheless, as we show in this report, the historical performance of a diversified portfolio of sector specialist hedge funds has, in our view, been impressive. Relative to sector returns, the performance has been even more impressive.
- However, sector funds have traditionally retained a long bias. Considering high correlation to sector returns, this has led to absolute drawdowns as the markets have fallen (one sector index has seen 50% drawdowns). High watermark fee structures have, in our view, been a disincent to managers.
- A solution to this flawed business model, in our view, is for sector specialists to abandon the long bias. Very low net exposure decreases portfolio volatility, and low volatility leads to reduced probability of large drawdowns. Investors wishing to have an overall exposure to a particular sector can do so through a core-satellite strategy: sector exposure is achieved by investing in a passive index security, and opportunities within the sector are exploited by investing in a directionally neutral sector fund.

Performance update

- As global equity stopped losing value in August, with many of the large markets including the US market posting small gains, short sellers posted only the second month of losses in 2002. This was only a 0.25% fall, but revisions to earlier months' results reduced year-to-date performance for the HRFI short sellers index by slightly more than this. Nevertheless, it remains the top performing index this year.
- Convertible bond arbitrageurs posted gains in August. Implied volatility continued to be relatively high, and credit spreads tightened, especially in the US, where a level of uncertainty was removed from the market as the SEC's deadline for CEOs to certify their companies financial reports passed. Tightening credit spreads also helped fixed income arbitrageurs.

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Asymmetric returns

Introduction

Contemporary asset management has a bias towards long-only investment strategies

We recently published an equity derivatives research report titled *Managing the Curve – Improving risk-adjusted returns*.¹ In the report we make the case for equity managers improving their risk-adjusted returns by using stock options. With "managing the curve" we refer to an active manager improving risk-adjusted returns by trying to avoid returns on the left hand side of the return distribution while retaining the ones on the right. In this report we discuss asymmetric returns in more detail. (The report could not be distributed in the US other than to QIBs [Qualified Institutional Buyers].)

Index funds as well as active managers define risk relative to a market benchmark

In UBS Warburg (2001) and elsewhere, we made the point that what today is referred to as active management is really passive, as it uses the same risk management techniques as enhanced indexing (which is considered as passive money management) and the same definition of risk (active risk) as do index funds.² If risk management is passive the return distribution of the managed portfolio will be similar to that of the underlying market. Putting it crudely: if volatility is at 10 percent, the passive (or the so-called *active*) portfolio will have a volatility of around 10 percent, with higher moment risk characteristics similar to the benchmark. If volatility is at 50 percent, the portfolio volatility will be around that level as risk is defined and managed relative to the market benchmark.

High returns, less uncertainty and wealth preservation are common goals of all investors

In this document we look at sector specialists, ie, long/short managers dedicated to one sector only. These managers have a more narrowly defined field of operation than generalists, that is, they are more specialised with respect to the underlying sector. The overriding theme of this document, however, is asymmetric returns. By 'asymmetric returns' we mean a return distribution that is different to a normal distribution. In an ideal world, all returns would be positive, that is, the distribution skewed to the right. One assumption made in this report is that all investors prefer asymmetric returns over symmetric returns. This assumption is based on the following three notions which, we believe, are common to all investors. The first two notions are from Markowitz (1952, 1959) and the third from Kahneman and Tversky (1979):

- (1) More return is preferred over less,
- (2) Certainty is preferred over uncertainty,
- (3) Losses weigh stronger than profits, that is, disutility from capital depreciation is larger than utility from capital appreciation.

Absolute return managers are driven by P&L – relative return managers by a market benchmark

If a manager defines risk relative to a benchmark, the portfolio will mimic the return distribution of the underlying market benchmark. However, hedge fund managers are not driven by market benchmark but by P&L. This means risk is defined in absolute terms (we use the term 'total risk'). If risk is defined as total risk and the investment process is driven by P&L, the manager will be taking into account these three factors .

¹ UBS Warburg 'Managing the Curve' (2002b)

² The distinction between passive and active is merely the magnitude of the tracking error constraint.

The main purpose of risk management is to avoid the probability of large drawdowns

The first factor (more return) is obvious. However, a hedge fund manager, unlike a relative return manager, also manages the second and third of the three notions actively: first, most hedge funds have a target volatility and control portfolio risk accordingly. Second, capital preservation is crucial, that is, avoiding large drawdowns is a major part of the objectives as well as the investment process.

Sector specialists had high correlation with underlying sector

It is with this latter point that sector specialists might have a problem. Traditionally, sector specialists had a long bias. This means that correlation of the long/short managers was high with the sector. This has proven to be a major disadvantage for this category, as, generally speaking, low correlation of absolute return strategies was one of the major reasons to invest in hedge funds in the first place.

Outperformance is no excuse for losing money

The high correlation led to absolute drawdowns. One index for long/short specialists is under water (percentage loss from previous all-time high based on month-end returns) by 50 percent. As we show later, this is not a lot when compared to long-only sector specialists. However, relative outperformance might help the marketing effort but, unfortunately, also triggers serious issues within the absolute return management firm: If there is a high watermark, the performance fee will not kick in until losses are recovered. This gives principals an incentive to throw in the towel and less senior staff an incentive to leave and seek employment elsewhere.¹

Absolute return managers have no choice other than to manage portfolio volatility actively

As we show later in this report, the historical performance of a diversified portfolio of sector specialists is very impressive. The performance relative to the sector is even more impressive. This favourable track record could lead one to assume that sector specialists should be used as an alternative to gaining exposure to a sector: correlation to the sector is high while performance is superior to the passive long-only alternative. However, if the hedge fund has to shut down after a 20 percent drawdown for the aforementioned reasons, then the business model of the sector specialists is flawed, in our view.

An absolute return sector specialist is not a substitute for exposure to a sector

A solution for sector specialists, in our view, is to abandon the long bias. If a sector specialist reduces his net exposure, portfolio volatility decreases as a result. If volatility is low, the probability of a 20 percent drawdown is lower than when volatility is high. By reducing the net long exposure, the sector specialist's business model becomes more sustainable. The sector specialist puts his information and/or analytical edge at work through thorough fundamental stock research, whereas portfolio volatility is controlled by avoiding directional bets. This would mean, from the investors point of view, that sector specialists become not an alternative for sector long exposure, but an alpha generating satellite to the core portfolio. In other words, the long-only style is passive and gives exposure to a sector while long/short exposure is active and should exploit investment opportunities within the sector.

In the following we discuss the historical performance of sector specialists, namely long/short managers in the technology, health care and financials sector. The main angle is the focus on asymmetrical returns, ie, focus on the P in P&L and trying to avoid the L.

¹ This latter point might not be as relevant in today's market environment as it was two or three years ago.

Sector specialists

Introduction

Sector specialist hedge funds are a special type of long/short equity fund. At the most general level, they exploit opportunities in one sector only. The following section compares some sector hedge fund indices with the sector indices, that is, a proxy for the long-only investment style. We compare three sectors – technology, health care/biotechnology, and financials – and compare the performance figures with US indices, since most sector hedge funds are based in the US. Long/short equity hedge funds in Europe and Asia are in an earlier stage of their industry life cycle and have, generally speaking, broader defined mandates. Table 1 summarises the main performance statistics for the three strategies. The analysis was conducted over different time periods owing to data availability.

Table 1: Performance comparison long-only versus long/short

	Annual Return (%)	Volatility (%)	Sharpe ratio (5%)	Under water (%)
Technology				
long-only	11.6	27.1	0.24	-71.7
long/short	19.8	20.6	0.72	-52.1
Health Care/Biotechnology				
long-only	8.1	43.2	0.07	-53.0
long/short	17.4	23.5	0.53	-26.5
Financials				
long-only	12.4	16.9	0.44	-17.9
long/short	20.7	12.5	1.26	-6.7

Source: Hedge Fund Research, Bloomberg, Datastream

Under water: percentage loss from previous all-time high based on month-end returns.

Time periods: Technology from January 1991 to July 2002; Health care from January 1993 to July 2002; Financials from January 1992 to July 2002.

- Absolute annual returns were between 17 and 21 percent for the long/short sector specialists and between 8 and 12 for the long-only sector specialists. On a return as well as a risk-adjusted return basis, the absolute return strategies have outperformed long-only strategies by a wide margin. We think it unlikely that the substantial outperformance can be explained by survivorship bias or any other imperfections in the data collection process.
- Volatility was lower in all long/short strategies when compared with the long-only strategies.

In the following three sections we compare the long/short alternative with a long-only proxy.

Technology

Table 2 compares the HFRI Technology Index with the Nasdaq Composite Index. The observation period for this analysis is from January 1991 to July 2002 (138 months). All returns are in US dollars.

Table 2: Long-only versus long/short in the technology sector

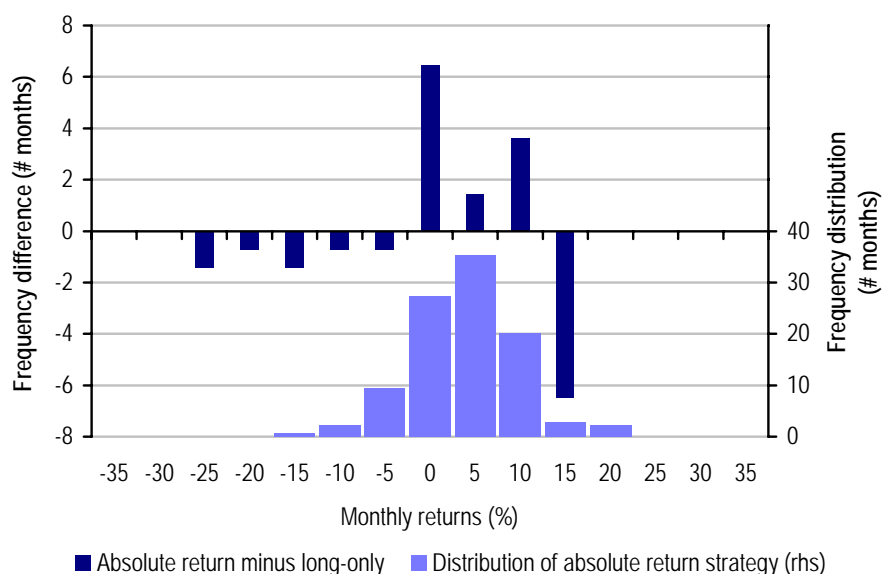
	Annual return (%)	Volatility (%)	Sharpe Ratio (5%)	Worst 1-month drawdown (%)	Worst 12-month drawdown (%)	Highest 12-month return (%)	Correlation	Kurtosis	Skew
NASDAQ Composite	11.6	27.1	0.24	-26.0	-59.8	105.3	1.00	1.58	-0.76
HFRI: Technology	19.8	20.6	0.72	-16.4	-37.6	169.0	0.90	1.02	-0.03

Source: Hedge Fund Research, Datastream

- Table 2 speaks for itself. The hedge funds index, a diversified exposure to a group of absolute return managers investing in technology stocks on a long/short basis, was superior in all aspects: Annual absolute as well as risk-adjusted return and maximum return were higher, whereas all risk characteristics were lower. However, correlation, for what it is worth, was high. The correlation coefficient between the hedge funds index and the Nasdaq index over the whole observation period was 0.90. The high correlation suggests that exposure to this type of investment was, in the past, not a portfolio diversifier. The investor trades less liquidity and less regulatory protection for superior risk-adjusted performance.
- Both skew and excess kurtosis are negligible.

Chart 1 below compares the frequency distribution (5 percent increments) of the HFRI Technology Index with the frequency distribution of the Nasdaq Composite Index. A negative value shows that the hedge funds index has fewer observations than the long-only equity index in that particular bucket (dark bars). The light bars along the lower x-axis show the frequency distribution of the 138 monthly returns of the hedge funds index.

Chart 1: Comparison of return frequency distributions



Source: Hedge Fund Research, Datastream

- The main focus point of Chart 1 is the left-hand side, which reveals where the superior performance comes from: by avoiding large losses. A diversified exposure to technology hedge funds has resulted in fewer occurrences of a monthly loss between -10 percent and -25 percent. On the other side there are also fewer hedge fund returns in the 15-20 percent bucket. In other words, hedge funds avoid large swings on the downside, but do not participate in large upswings (most often a rebound after a large decline) as a long-only strategy does. However, the long/short strategy has more months where the returns are in the 0-5 percent and 10-15 percent bucket.
- A large loss followed by a rebound is bad to the investor. A loss of 40 percent diminishes an investment of 100 to 60. A 40 percent rebound brings the investment only back to 84. A 40 percent loss requires a 67 percent rebound to recover losses.

Table 3 shows what avoiding large losses means to wealth creation (or preservation). The table shows the wealth of two investments starting at 100 in January 1997. The first investment is the long-only investment style, in this case the Nasdaq Composite. The second column is the long/short equity investment, the HFRI Technology Index.

Table 3: Comparison of wealth creation

	NASDAQ Composite	HFRI Technology
Initial investment	100	100
Dec-97	122	107
Dec-98	170	137
Dec-99	315	308
Dec-00	191	261
Dec-01	151	227
Jul-02	103	184
Return 97-99	215%	208%
Return 00-02	-67%	-40%
Under water	-67%	-40%
Loss recovery return*	206%	67%
Recovery at 8% pa	February 2017	April 2009

Source: Hedge Fund Research, Datastream

* Return required to recover losses.

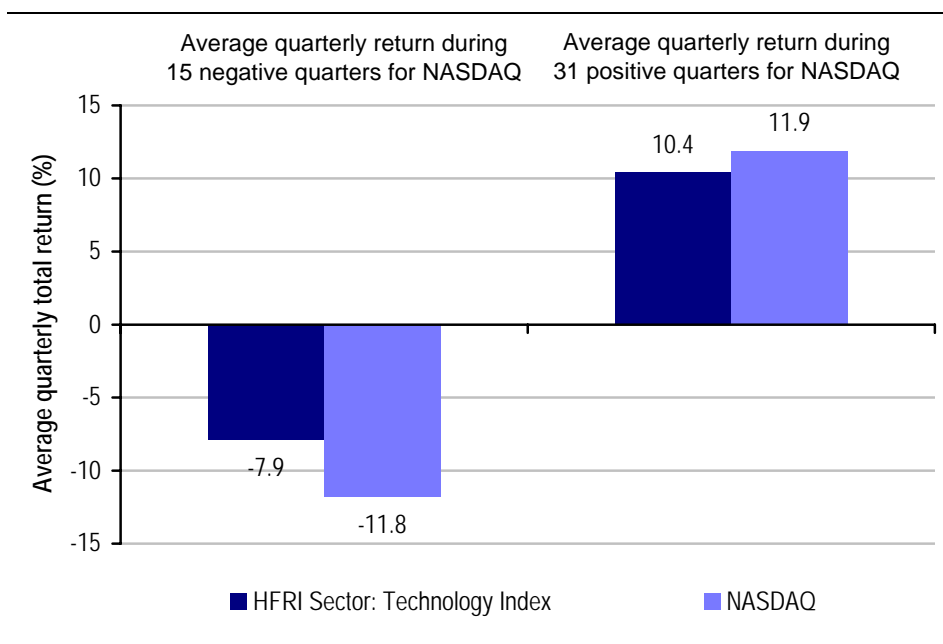
- Table 3 shows that avoiding losses is a laudable concept. Table 3 also shows that the long-only investment had a higher return in the first three years –a total return of 215 percent compared with the 208 percent of the absolute return portfolio. This higher performance is due to long-only managers, on average, taking more market risk. However, the subsequent two-and-a-half year period resulted in a loss of 67 percent for the former and a loss of 40 percent for the latter (based on year-end and mid-year wealth levels). This, we believe, is a big difference, manifested in the estimated time it takes to recover losses. At an annual rate of eight percent, it will take until 2017 to move from 103 (July 2002) to the year-end high of 315 (December 1999). However, the hedge fund index is

under water by only 40 percent. At a rate of eight percent per year, it would take less than seven years to move from 184 to 308.

- Table 3 begs the question what kind of investment the retail investor needs protection from – outright exposure to a volatile asset class (left column in Table 3), or hedged (or semi-hedged in this case) exposure to a volatile asset class. The fact that occasionally a hedge fund goes bankrupt (as do listed companies) does not matter in this debate, as single-manager (or single-company) risk is a non-systematic risk that can be immunised through diversification.
- Correlation between the two proxies in Table 3 was close to one in the period from 1997-99, during the bull market. The normalised long-only proxy fell from 315 to 103 in 2000-02. The long/short proxy fell from 308 to 184. In other words, correlation is one on the way up and less than one on the way down. The losses of the long/short proxy in the bear market could be viewed as a call option premium outlay for a potential rebound in the Nasdaq. If the Nasdaq starts increasing again (which is a possibility), correlation is likely to move toward one again.

Chart 2 shows average quarterly returns in down markets versus average quarterly returns in friendly markets for the calendar quarters from first quarter 1991 to second quarter 2002. We have subtracted 100 basis points (which we believe is generous) from the quarterly returns of the hedge funds index to account for any data imperfections. Survivorship bias in hedge fund data is estimated to be around 300 basis points per year.

Chart 2: Average negative versus positive returns



Source: Hedge Fund Research, Datastream

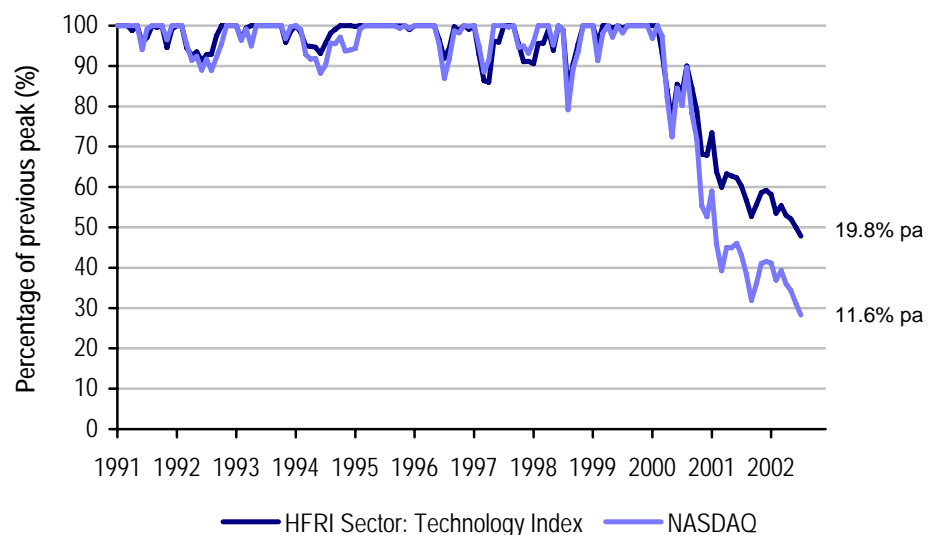
Not losing one's shirt could become the name of the game

Chart 2 reveals some interesting aspects of substituting long-only exposure with long/short exposure. The asset management industry is about alpha (at least from a marketing perspective), however, this might change. Chart 2 shows that long-term superior returns derive from not losing your shirt (ie, risk management) and not necessarily generating alpha, or, assuming 'not losing your shirt' is equal to generating alpha (an assumption one could make because wealth preservation is skill-based as

opposed to market-based) then the key variable to investment success becomes risk management.¹ The observation that the average positive quarterly return of technology hedge funds is nearly equal to the average quarterly returns in the Nasdaq Composite Index in Chart 2 is coincidence. However, what is not coincidence is that absolute return managers do not follow the benchmark down on a one-to-one basis.² Long-term superiority is achieved from balancing investment opportunities with total risk. Investment long-only investment opportunities in equity markets might not be identical when the market trades at 10x prospective earnings to when it trades at 100x prospective earnings. The absolute return manager distinguishes between the two. The relative return manager, too, distinguishes between the two. The difference is that the relative return manager can do little about it because risk is defined as active and not total risk.³

Chart 3 shows the under water perspective of the long/short and long-only index. The two indices in Chart 3 are shown as a percentage of their previous all-time high. In other words, the index line is between zero (eg, nationalisation) and 100 percent (trading at all-time high) by definition.

Chart 3: Under water perspective



Source: Hedge Fund Research, Datastream

- If risk were defined as not losing one's shirt, then we see investing in hedge funds as a means to higher returns with less risk.⁴ The hedge fund index lost less while compounding investors' wealth at a higher annual rate of return (19.8 percent versus 11.6 percent for the Nasdaq).

¹ Note that risk management is not the same as risk measurement. Risk measurement is quantitative and can be considered a science. Risk management, however, is not a science; it is subjective and involves judgement. Risk management, therefore, is probably more a craft than it is a science. Risk management requires experience - risk measurement a computer.

² One could argue that correlation is elastic on the upside but inelastic on the downside.

³ We have addressed the difference between focusing on total risk as opposed to active risk at length in UBS Warburg 'The Search for Alpha Continues' (2001) and Ineichen (2002).

⁴ In UBS Warburg 'In Search of Alpha' (2000) we showed that risk is slightly more complex than the analogy with losing one's clothing suggests.

Healthcare/Biotechnology

Table 4 compares the HFRI Sector Healthcare/Biotechnology Index with the AMEX Biotechnology and Pharmaceuticals Index. The observation period for this analysis is over a nine and a half year period (115 months), from January 1993-July 2002.

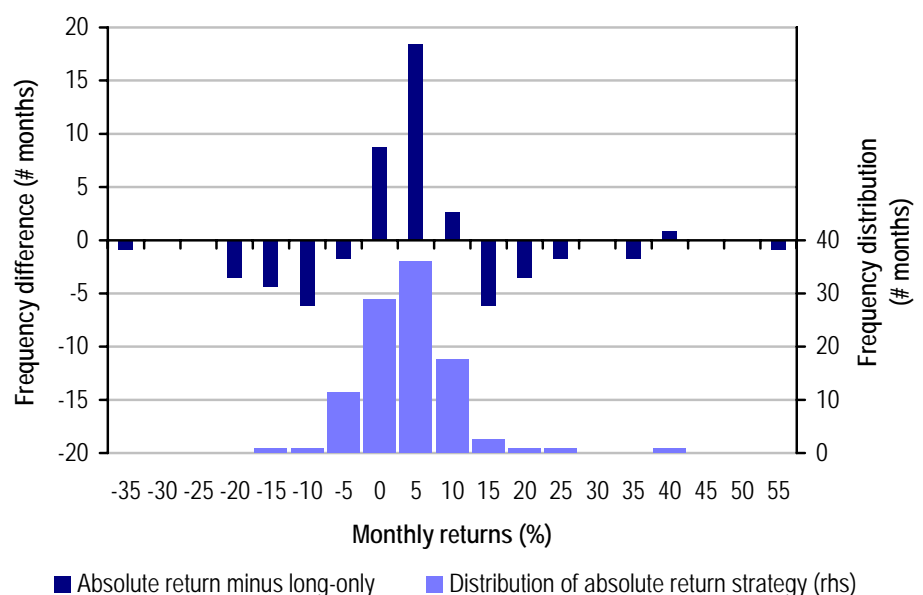
Table 4: Long-only versus long/short in the health care/biotechnology sector

	Annual return (%)	Volatility (%)	Sharpe Ratio (5%)	Worst 1-month drawdown (%)	Worst 12-month drawdown (%)	Highest 12-month return (%)	Correlation	Kurtosis	Skew
AMEX Biotechnology/Pharmaceuticals	8.1	43.2	0.07	-39.3	-43.0	296.7	1.00	2.13	0.35
HFRI Healthcare/Biotechnology	17.4	23.5	0.53	-19.5	-19.1	144.6	0.84	5.64	1.12

Source: Hedge Fund Research, Bloomberg

- The long/short index has outperformed the long-only index on a risk-adjusted return (here measured by Sharpe ratio) due to higher returns and lower volatility.
- The worst one-month and worst 12-month drawdowns for the long/short index were around half of those of the long-only index, while the highest 12 month return of the long/short index was also around half that of the long-only proxy.
- Correlation was high at 0.84.
- Both indices have moderate excess kurtosis. The high excess kurtosis of 5.6 for the long/short index is from a positive 35 percent return in February 2000. Chart 4 compares the two return frequency distributions.

Chart 4: Comparison of return frequency distributions



Source: Hedge Fund Research, Bloomberg

- Chart 4 shows that the superior performance of the long/short index is primarily derived from having fewer large losses and many more returns in the 0-5%

bucket. The return comparison in Table 4 makes it clear that the more positive outliers of the long-only index do not balance or even overcompensate the large losses. The mathematics of this phenomena is as follows: a loss of 50 percent diminishes an investment of 100 to 50. A 50 percent recovery brings the investment only to 75. In other words, to recover a 50 percent loss, a 100 percent recovery return is required.¹

Table 5: Comparison of wealth creation

	AMEX Biotechnology - Pharmaceuticals	HFRI Healthcare/Biotechnology
Initial investment	100	100
Dec-97	113	101
Dec-98	122	108
Dec-99	274	159
Dec-00	442	240
Dec-01	420	246
Jul-02	252	194
Return 97-99	174%	59%
Return 00-02	-8%	22%
Under water	-43%	-21%
Loss recovery return*	75%	27%
Recovery at 8% pa	Nov-2009	Sep-2005

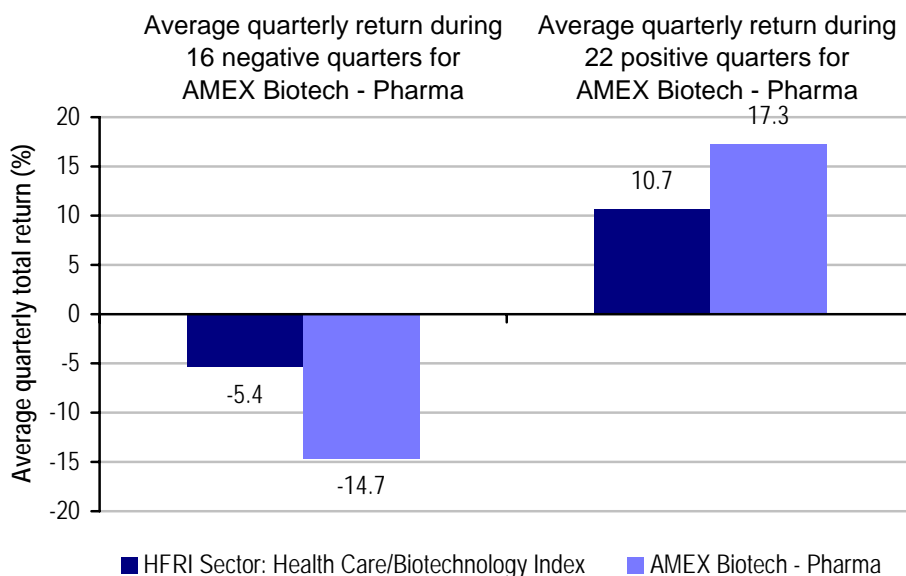
Source: Hedge Fund Research, Datastream

- From January 1997 to July 2002 the long-only index has outperformed the long/short index. However, the long/short index in Table 5 had a positive return in the two-and-a-half year period ending in July 2002. Long/short managers often list in their marketing material that they can make money in bull as well as bear markets. This is true, in theory. In practice this is not always the case as the opportunity set is normally correlated with the performance of the market. Long/short has a positive correlation with the underlying equity market. The superior performance is derived from, generally speaking, losing less when markets fall.

Chart 5 shows average quarterly returns in down markets versus average quarterly returns in friendly markets for the calendar quarters from first quarter 1992 to second quarter 2002. We have subtracted 100 basis points from the quarterly returns of the hedge funds index.

¹ See UBS Warburg 'Return expectations' (2002a)

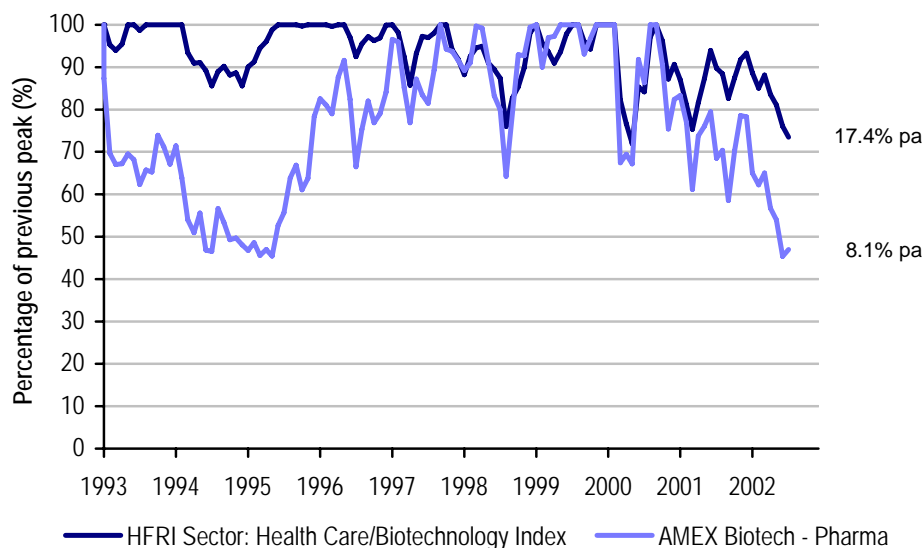
Chart 5: Average negative versus positive returns



Source: Hedge Fund Research, Bloomberg

- Chart 5 compares the hedge fund index with the AMEX Biotechnology Pharmaceuticals Index. The average underperformance of the hedge fund index in rising markets was 6.6 percentage points, whereas the outperformance in falling markets was around 9.3 percentage points. In other words, the return profile is also asymmetrical – a phenomenon also found with most other long/short equity strategies.

Chart 6: Under water perspective



Source: Hedge Fund Research, Bloomberg

- Table 5 shows that there are periods where the long-only strategy had outperformed a basket of hedge funds operating in the Healthcare/ Biotechnology sector. Chart 6 shows that the long/short index has far superior wealth preservation characteristics. The focus on managing total risk leads to asymmetric returns which, eventually, should lead to long-term superior performance characteristics.

Financials

Table 6 compares the HFRI Sector Financials Index with the NYSE Financials Index. The observation period is from January 1992 to July 2002.

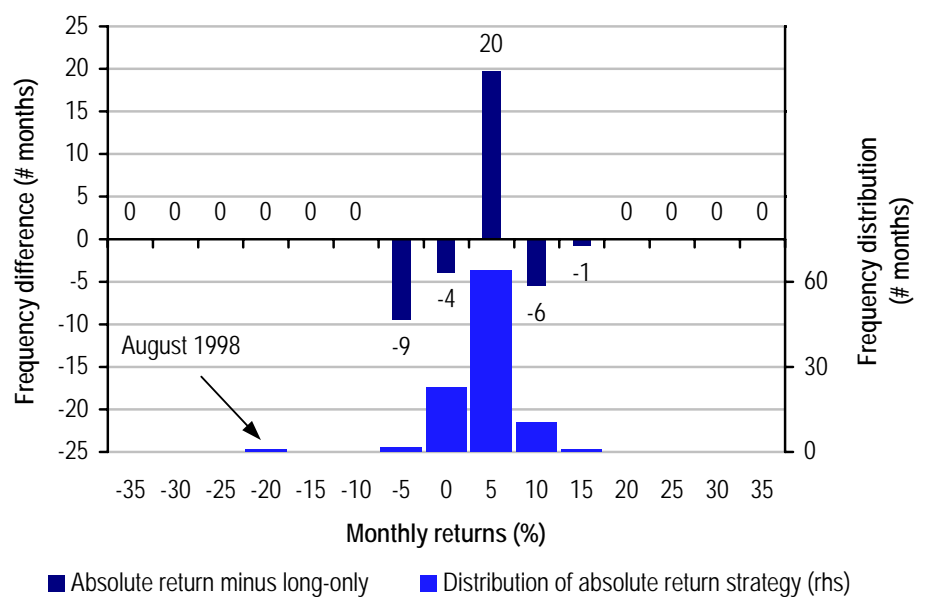
Table 6: Long-only versus long/short in financials

	Annual return (%)	Volatility (%)	Sharpe Ratio (5%)	Worst 1-month drawdown (%)	Worst 12-month drawdown (%)	Highest 12-month return (%)	Correlation	Kurtosis	Skew
NYSE Financials	12.4	16.9	0.44	-24.3	-13.8	60.2	1.00	4.80	-1.08
HFRI Financials	20.7	12.5	1.26	-20.7	-17.7	54.0	0.81	10.61	-1.98

Source: Hedge Fund Research, Datastream

- The index of hedge funds focusing on investment opportunities in the financial sector outperformed the NYSE Financials long-only index by a wide margin with lower volatility. In other words, risk-adjusted returns were substantially higher than for the long-only investment proxy. The monthly drawdown was only slightly smaller for the hedge fund index (-20.7 percent versus -24.3 percent) but slightly higher over a 12-month period (-17.7 percent versus -13.8 percent). The monthly drawdowns were higher (ie, losses larger) than the 12-month drawdowns for both indices.

Chart 7: Comparison of return frequency distributions



Source: Hedge Fund Research, Datastream

- Chart 7 shows that the superior performance is derived from fewer monthly observations in the -10 to 0 percent buckets and substantially more returns in the 0 to 5 percent bucket.
- The frequency distribution of the hedge fund index has an extremely high excess kurtosis of 10.6, compared with 4.8 for the NYSE Financials Index in the same time period. The monthly loss of 20.7 percent for the long/short index in August 1998 was a 5.7-sigma event resulting in the high excess kurtosis figure of 10.6.

The loss of the long-only proxy was a negative absolute return of 24.3 percent but “only” a 5.0-sigma event. The reason why excess kurtosis for the long-only index is lower despite the magnitude of the loss being higher, is because the volatility is higher for the long-only index. In other words, a 24 percent loss is perceived as less of an outlier if volatility is 16.9% than when volatility is 12.5%, as with the long/short index. This is an indication that excess kurtosis is not a valuable measure on a stand-alone basis, in our view. It needs to be put into context of portfolio volatility. If the August 1998 return is deleted for both time series, both indices show roughly zero excess kurtosis, that is, no fat tails.

Table 7: Comparison of wealth creation (January 1997-July 2002)

	NYSE Financials	HFRI Financials
Initial investment	100	100
Dec 97	141	149
Dec 98	148	131
Dec 99	147	129
Dec 00	184	176
Dec 01	169	207
Jul 02	151	209
Return 97-99	47%	29%
Return 00-02	3%	63%
Under water	-18%	0%
Loss recovery return*	22%	0%
Recovery at 8% pa	February 2005	Index at peak level

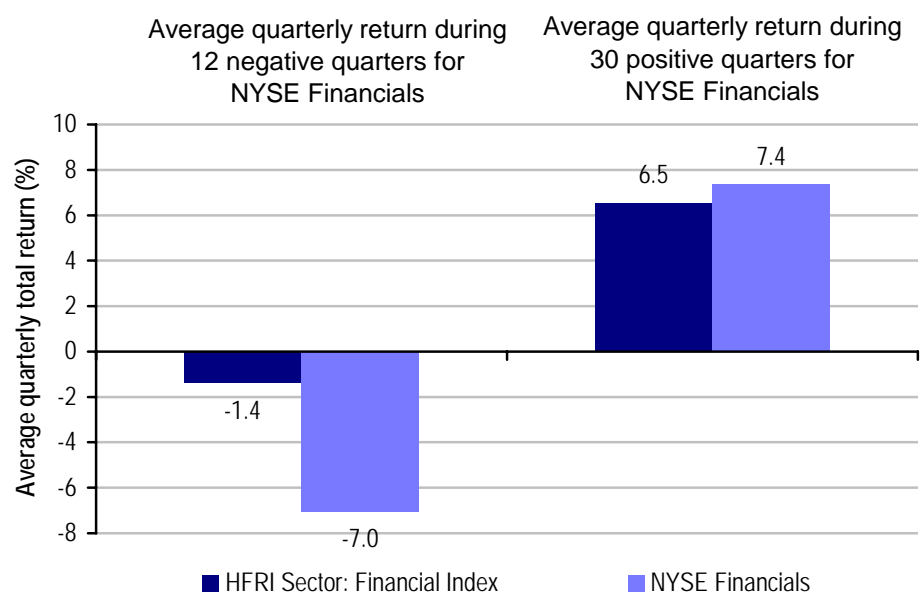
Source: Hedge Fund Research, Datastream

* Required return to recover losses

- Table 7 shows a somewhat unusual feature. The returns for the two periods (1997-99 and 2000-02) are not correlated. The returns for the NYSE Financials Index were 47 percent for the period 1997-99 and only 3 percent for the subsequent two and a half years. The magnitude for the hedge fund proxy is the other way around. The HFRI Financials Index had a return of 29 percent in the first period and a much higher return of 63 percent in the subsequent period. The reason for this difference in direction and magnitude is that the long-only proxy is purely dependent on the direction of the subgroup of the asset class (in this case the NYSE Financials Index). The long/short proxy is a function of the investment opportunities within the subgroup of the asset class.

Chart 8 shows average quarterly returns in down markets versus average quarterly returns in friendly markets for the calendar quarters from first quarter 1991 to second quarter 2002. We have subtracted 100 basis points from the quarterly returns of the hedge funds index.

Chart 8: Average negative versus positive returns



Source: Hedge Fund Research, Datastream

- Chart 8 shows the familiar pattern for long/short equity: symmetrical returns for the long-only index and asymmetric returns for the long/short proxy. In a relative context, this means slight underperformance in positive quarters and significant outperformance in negative quarters. Long/short equity seems to follow the Wall Street wit, according to which the best way of making money is not losing it. We believe illustrations such as the one shown in Chart 8, potentially, are just further arguments against what today is still referred to as active money management.

Conclusion

To some, long/short equity is the archetype of a hedge fund. Long/short equity, in the past, had high risk-adjusted returns, high volatility when compared with arbitrage strategies and low volatility when compared to long-only investment strategies and high correlation with equities. The dispersion between different long/short equity managers is wide and is not expected to narrow any time soon.

Outlook

A case could be drawn that outperformance will not be as high in the future as it was in the past. The average outperformance of the HFRI Equity Hedge Index against the MSCI World Total Return Index in the six-year period from 1990-95 was 15.4 percent per year (22.3 percent versus 6.9 percent) but “only” 11.3 percent per year (18.4 percent versus 7.1 percent) in the six years to 2001.¹ Economic logic and common sense suggest that this trend (decreasing outperformance) should continue. It is unlikely that a superior investment vehicle can maintain its superiority forever. Economic rents have a tendency to evaporate. Once the last pension fund trustee has bought into the investment case for absolute return strategies, the alpha will be gone (or spread over a much larger population of

¹ The outperformance against the S&P 500 (total return) Index was 9.3 percent in the first six-year period and 5.7 percent in the latter.

investors). On a more positive note, the evaporation of alpha will likely not happen overnight. In mid-2002, close to 100 percent of UK pension funds were averse to hedge funds and around 70 percent in the US. In Germany, hedge funds were still viewed as outlaws by government and press. The conversion of pension fund boards, trustees, and other investment laymen is a slow process and could unfold over a period of 10 years. By comparison, it took more than a decade for derivatives not to be viewed as the devil's instrument, but a tool for controlling risk.¹

References

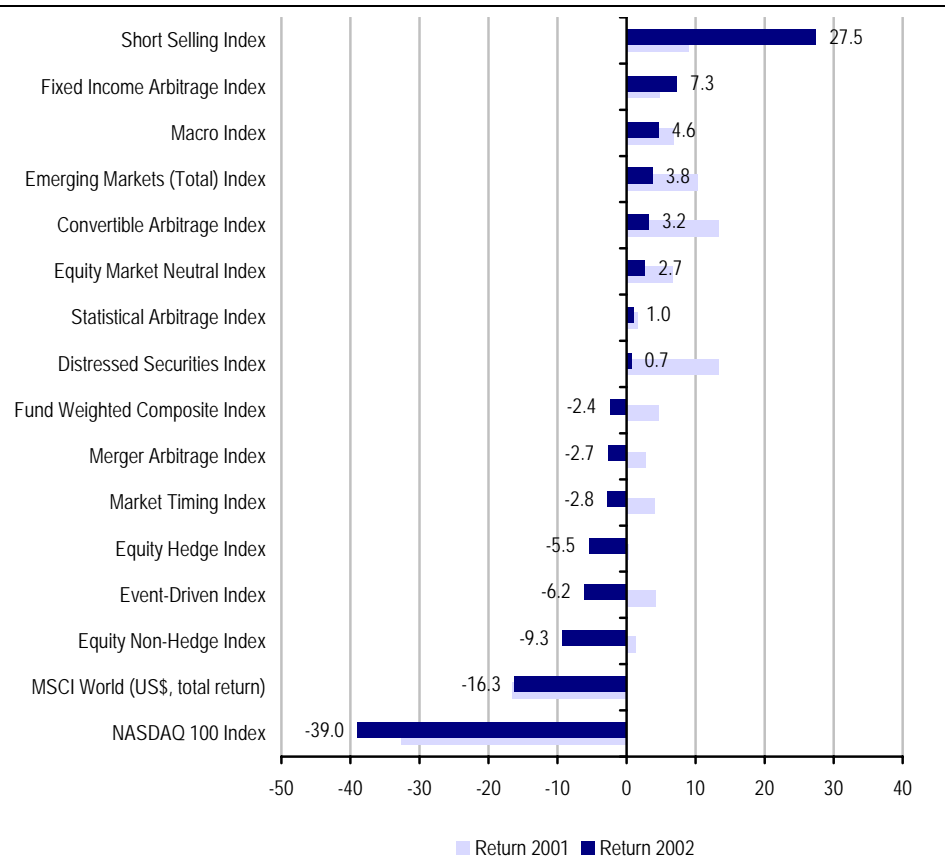
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¹ Although in the United Kingdom the general belief is still that it was derivatives (as opposed to corporate governance) that brought down one of the oldest banks in the country. As a result, asset managers on some occasions are still constrained from using derivatives in portfolios managed for pension funds.

Performance update

Short sellers still on top despite losses in August

Chart 9: YTD returns from a selection of hedge fund strategies



Source: Hedge Fund Research, Datastream.

Equity Non-Hedge Index: Long/short equity with long-bias

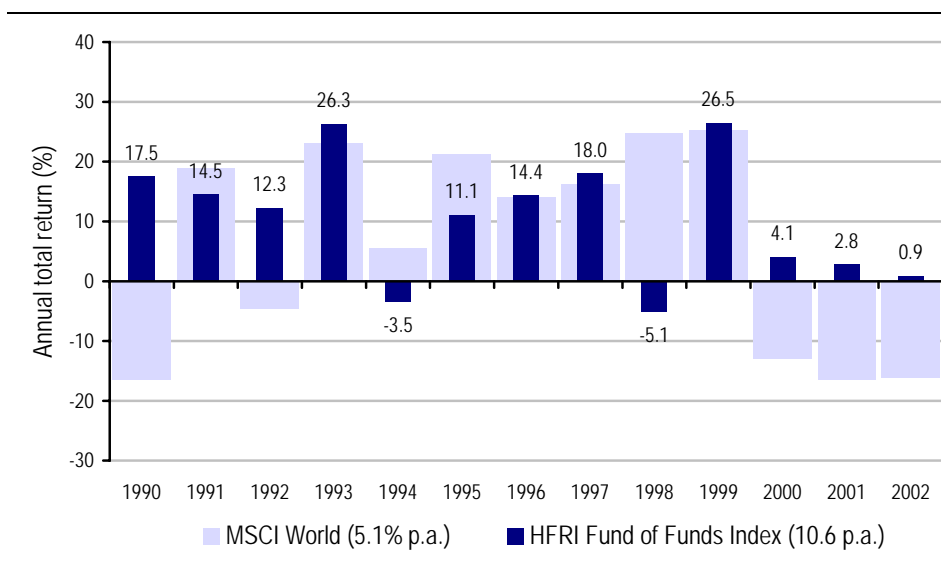
Equity Hedge Index: Long/short equity where market risk is hedged or reduced

- As global equity stopped losing value in August, with many of the large markets including the US market posting small gains, short sellers posted only the second month of losses in 2002. This was only a 0.25% fall, but revisions to earlier months' results reduced year-to-date performance for this index by slightly more than this. Nevertheless it remains the top performing index this year by a wide margin.
- Convertible bond arbitrageurs posted gains in August. Implied volatility continued to be relatively high, and credit spreads tightened, especially in the US, where a level of uncertainty was removed from the market as the SEC's deadline for CEOs to certify their companies financial reports passed.
- Tightening credit spreads also benefited fixed-income arbitrageurs. The HFR (Hedge Fund Research) Index for this category of funds has now seen 11 consecutive positive months following prior month revisions.

- A few large deals, notably in Europe, boosted the merger arbitrage category, which posted gains in August. Event driven funds may also have benefited from these deals. Both indices remain depressed on a year-to-date basis, however.
- Distressed securities funds posted mixed results, and the index fell back slightly in August. While tightening credit spreads helped in general, we believe other factors (eg, exposure to securities with asbestos risk) may have had a negative impact on results in this sector. The pace of restructuring in the market finally seems to be picking up, which we believe should aid this category of funds,.
- Macro funds also posted positive results in August. Much of the volatility in equities at the index level appears to have been closely linked to announcements of key economic data, which, if correctly called ahead of time, or quickly reacted to immediately following the event, would, in our view, have presented a number of profitable short-term trading opportunities.

Chart 10 compares annual returns of the MSCI World Total Return Index with the HFRI Fund of Funds Index.

Chart 10: Annual returns of MSCI World and HFRI Fund of Funds indices

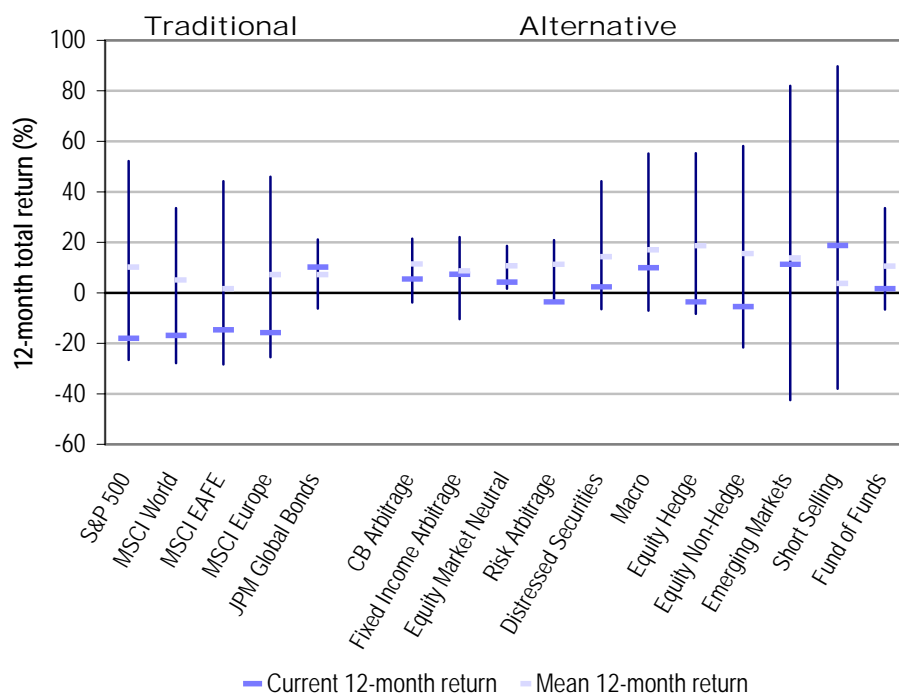


Source: Hedge Fund Research, Datastream
Both indices are total returns in US dollars, August 2002 inclusive.

- The current outlook for calendar year 2002 continues to be similar to 2000 and 2001 in our view: large losses in equities and below-average returns in hedge funds.

Chart 11 compares the recent performance of some long-only indices and a selection of hedge fund indices with its trading range. The wide horizontal mark measures the rolling 12-month total return, while the narrow mark measures the long-term mean. The vertical line measures the trading range of the rolling 12-month return since January 1990.

Chart 11: Rolling 12-month returns compared with trading range



Source: Hedge Fund Research, Datastream
 Based on total returns in US dollars: January 1990-August 2002.

- The mean returns to relative value strategies have been similar to equity indices with volatilities similar to bond indices.
- The macro and equity hedge indices have a similar dispersion of returns to equity indices on the upside, but less erratic swings on the downside. This asymmetry (avoiding negative compounding) results in higher mean returns.
- The current 12-month return is below the long-term mean for all indices except bonds, and short sellers, despite a difficult August for short sellers. Despite a solid performance in a difficult month, the current 12-month return for fixed income arbitrage slipped slightly below average from an above average position at the end of July.
- Rolling 12-month returns for risk arbitrage continue to be at an all-time low.

Table 8 shows an update of a selection of HFR indices compared with traditional asset classes. The second column from the right measures the number of years it takes at the historical growth rate (first column) to reach the previous all-time high. The last column then measures the month and year in which the losses have been recovered.

Table 8: HFRI performance update

	Annual return (%)	Volatility (%)	Sharpe ratio*	Highest 1M loss (%)	Negative months (%)	Worst 1Y return (%)	Loss recovery (years)	Loss recovery (year)
S&P 500 (Total return)	10.2	14.8	0.36	-14.5	38	-26.6	3.7	06.2006
MSCI World (Total return)	5.1	14.7	0.01	-13.3	41	-27.9	7.7	06.2010
MSCI EAFE (Total return)	1.6	17.0	<0	-13.9	43	-28.3	25.1	10.2027
MSCI Europe (Total return)	7.3	15.4	0.15	-12.6	39	-25.5	5.1	11.2007
JPM Global Bond Index (Total return)	7.3	6.0	0.38	-3.3	40	-6.2	0.0	at high
HFRI Convertible Arbitrage Index	11.5	3.4	1.92	-3.2	13	-3.8	0.1	10.2002
HFRI Distressed Securities Index	14.3	6.4	1.47	-8.5	21	-6.4	0.2	12.2002
HFRI Emerging Markets (Total) Index	13.8	16.0	0.55	-21.0	34	-42.5	0.5	03.2003
HFRI Equity Hedge Index	18.6	9.3	1.47	-7.7	28	-8.3	0.5	03.2003
HFRI Equity Non-Hedge Index	15.5	14.9	0.71	-13.3	36	-21.7	1.6	04.2004
HFRI Equity Market Neutral Index	10.7	3.2	1.77	-1.7	15	1.6	0.0	at high
HFRI Event-Driven Index	18.7	9.4	1.46	-7.7	27	-4.8	0.4	02.2003
HFRI Fixed Income: Arbitrage Index	8.7	4.7	0.80	-6.5	19	-10.4	0.0	at high
HFRI Macro Index	17.1	8.7	1.39	-6.4	30	-7.1	0.0	at high
HFRI Market Timing Index	13.6	6.9	1.25	-3.3	35	-3.3	0.3	01.2003
HFRI Merger Arbitrage Index	11.3	4.6	1.36	-6.5	13	-3.6	0.3	01.2003
HFRI Relative Value Arbitrage Index	13.2	3.8	2.14	-5.8	13	1.1	0.1	10.2002
HFRI Statistical Arbitrage Index	10.2	3.9	1.35	-2.0	24	-1.1	0.0	at high
HFRI Sector: Technology Index	19.8	20.5	0.72	-15.2	39	-37.6	2.6	04.2005
HFRI Short Selling Index	3.7	22.9	<0	-21.2	49	-38.0	0.1	10.2002
HFRI Fund Weighted Composite Index	14.8	7.3	1.34	-8.7	27	-6.4	0.3	12.2002
HFRI Fund of Funds Index	10.6	5.9	0.94	-7.5	26	-6.6	0.2	11.2002

Source: Hedge Fund Research, Inc., Datastream

Based on US\$ total returns since January 1990

* based on risk free rate of 5%

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