When do hedge fund managers add alpha?

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The returns of hedge funds are more difficult to analyze than the returns of long-only managers, most notably because the quality of hedge fund indexes tends to be lower. That said, an analysis of the CSFB/Tremont Hedge Fund Indexes shows that some of the same factors that explain long-only asset manager returns have remarkably high degrees of statistical significance when used to explain hedge fund returns.

Our main conclusions are:

- The level of cross-stock dispersion matters for long/short and market neutral funds, and has recently become the most important explanatory variable. Just as with long only managers, the influence of dispersion has become much greater recently, and has moved from being a negative to a positive influence. A high level of stock dispersion is currently good for these types of managers.

- Moves in the equity market influence the returns of long/short funds and market neutral funds. Long/short funds successfully played the bull and bear markets by being net long and net short in each environment. Market-neutral funds had long exposure in the bull market (probably though overweight high beta names) and have become truly market-neutral in the bear market.

- The performance of small-cap stocks relative to large-cap stocks has a positive influence on long/short funds, perhaps because they short a small number of mostly large-cap names.

- Global macro funds are sensitive to the dispersion between global equity market indexes and the correlation between equities and bonds.

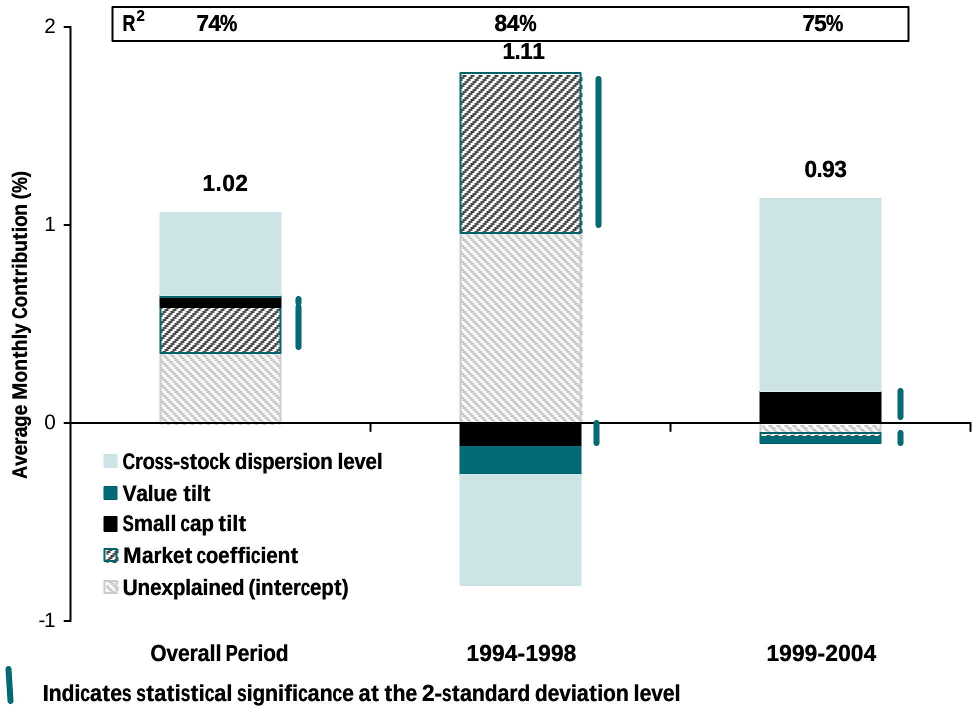
We use the same analytical framework as in a previous analysis of long-only managers;[1] specifically, cross-stock dispersion, a value tilt, small-cap tilt and market return (in excess of cash). The last three factors are Fama-French factors. Lastly, we use measures of cross-index dispersion and equity/bond return correlation to examine the returns of global macro funds.

Long/short funds

Exhibit 1 shows that long/short funds have generated an average monthly return of 1.02% (net of fees) since 1994. The chart also shows how much the different factors have contributed to the monthly return. The segments of the bar chart that have a dark blue line to the right are statistically significant at the 95% level – they are the most reliable outputs to this analysis. Over the last five years, the four factors explain around 75% of the return of the average long/short manager.

[1] See *When do active equity managers add alpha?*, Joanne M. Hill and Ingrid Tierens, Goldman Sachs Equity Derivatives Strategy, Updated March 1, 2004.

Exhibit 1: Long/short funds: Factor contribution to average monthly return shows cross-stock dispersion now dominates



NOTE: Monthly data from January 1994 to January 2004.

Source: Goldman Sachs, CSFB/Tremont Hedge Fund Indexes and Fama-French.

- The level of cross-stock dispersion has moved from having a (surprisingly) negative impact to a positive impact in the most recent five-year period. (The average level of dispersion increased between the 1994-1998 and 1999-2004 periods.) **Over the last five years, the level of cross-stock dispersion has been the factor that accounts for the largest portion of average long/short fund returns.**

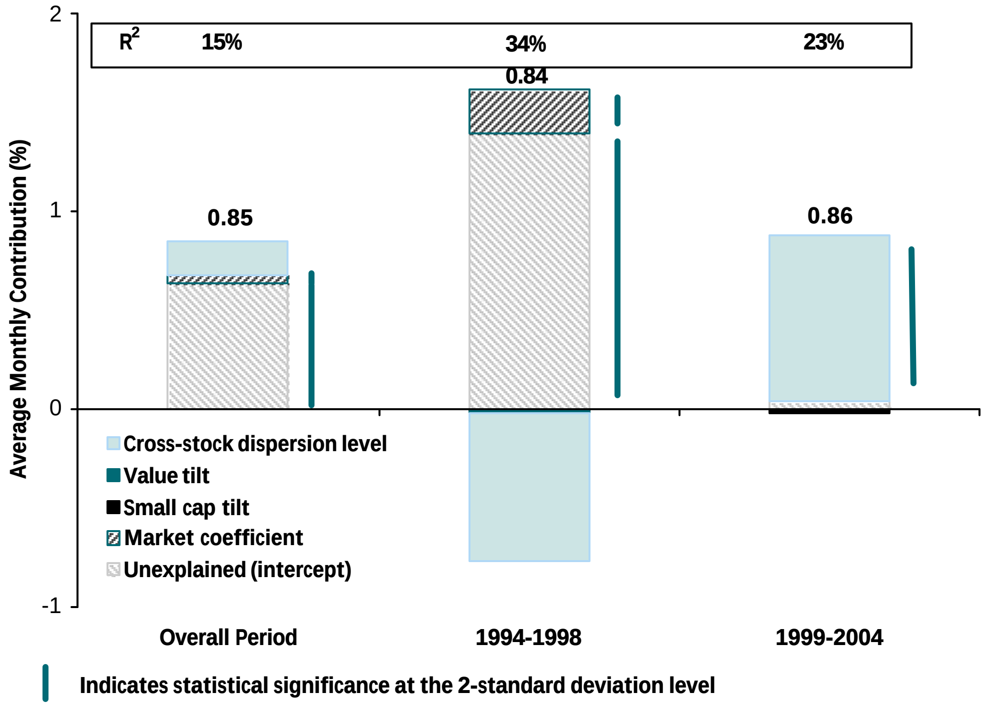
- The market return has been consistently statistically significant as a contributing factor. Long/short funds appear to have navigated the move from a bull to a bear market and the subsequent rally quite successfully, with relatively little negative influence from the 2000-2002 bear market.

- Funds are exposed to small-cap relative to large-cap returns, perhaps because they short mostly large-cap stocks.

Market-neutral funds

Our analysis of market-neutral funds shows broadly the same factors are at work as for long/short funds. The percentage of returns that we explain is lower, however, at only 23% in the 1999-2004 period. This may be in part because the market return is a predictable and important factor for long/short funds, but not for market-neutral funds.

Exhibit 2: Market-neutral funds: Factor contribution to average monthly return shows cross-stock dispersion dominates here also



NOTE: Monthly data from January 1994 to January 2004.

Source: Goldman Sachs, CSFB/Tremont Hedge Fund Indexes and Fama-French.

- Cross-stock dispersion has moved from being a negative contributor in the 1994-1998 period to being a positive contributor recently. Cross-stock dispersion has become by far the most important variable in explaining the returns of market-neutral funds in the recent period.

- The market return had a positive contribution to long/short funds' performance in the 1994-1998 period. More recently funds have, on average, totally immunized their returns from market movement.

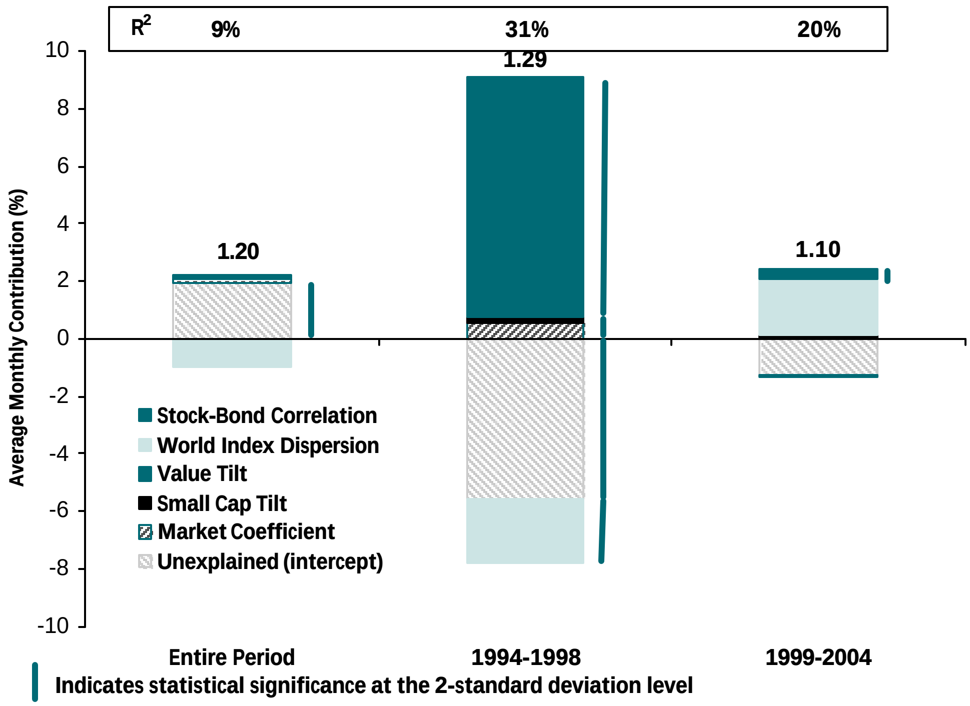
Global macro funds

Global macro hedge fund performance is harder to explain than long/short or market-neutral manager performance. This may, in part, be due to the CSFB/Tremont index having a smaller number of hedge funds and also missing some of the largest macro players in the index. To analyze global macro fund performance, we have replaced cross-stock dispersion with cross-index dispersion, and added a variable that measures the correlation between equity and bond market returns. We explain a relatively modest 20% of monthly returns using these variables.

- The correlation between equity and bond returns was a positive contributor throughout both 1994-1998 and 1998-2004. More recently, the correlation between equity and bond returns has been negative, reflecting greater opportunity to profit between equity and bond market returns. Perhaps surprisingly, this has not translated into this factor providing better performance.

- Dispersion between equity index returns, which has decreased between the 1994-1998 period and the 1999-2004 period, has nonetheless moved from being a negative contributor (when there were significant return differentials) to a positive contributor (as return differentials between equity markets have diminished).

Exhibit 3: Global macro funds: Cross-index dispersion and stock/bond return correlation are the major return contributors



NOTE: Monthly data from January 1994 to January 2004.

Source: Goldman Sachs, CSFB/Tremont Hedge Fund Indexes, Bloomberg EFFAS, FTSE and Fama-French.

Conclusion

Long/short managers and market-neutral managers are successful as a group in isolating their exposure to many of the variables that drive long-only active managers returns. This appears to be true beyond the reduction of exposure to the equity market, which seems to be quite successful across the group as a whole, and extends to relatively low exposure to style and size factors. As a result, cross-stock dispersion has become the dominant driver of their returns, with increasing dispersion providing an increased opportunity set. Managers who are especially concerned about their exposure to dispersion could consider using derivative strategies to immunize this exposure (shorting dispersion by going long index volatility, short individual stock volatility). If dispersion increases further as the U.S. economy shows further strength, these managers should be well-positioned to realize positive future returns.

Appendix: Regression returns

Exhibit A1: Average factor returns/levels

	Market Excess Return	Small Cap Tilt	Value Tilt	Cross-Stock Dispersion	World Cross-Market Dispersion	Stock Bond Correlation
1994-98	1.35	-0.46	-0.20	2.82	3.25	0.48
1999-2004	-0.06	1.04	0.46	3.09	1.81	-0.15
Change	-1.41	+1.50	+0.66	+0.27	-1.45	-0.62

NOTE: Data from January 1994 to January 2004.

Source: CSFB/Tremont Hedge Fund Indexes, Fama-French and Goldman Sachs.

Exhibit A2: Long/short funds – regression outputs

		Market Coefficient	Small Cap Tilt	Value Tilt	Cross-Stock Dispersion
Entire Period (1994-04)	Beta	+0.36	+0.17	-0.29	+0.14
	t-Stat	+10.75	+4.04	-7.95	+0.80
1994 - 1998	Beta	+0.59	+0.26	-0.06	-0.19
	t-Stat	+11.81	+3.99	-0.78	-0.96
1999 - 2004	Beta	+0.27	+0.16	-0.31	+0.31
	t-Stat	+6.05	+2.89	-7.37	+1.23

NOTE: Data from January 1994 to January 2004.

Source: CSFB/Tremont Hedge Fund Indexes, Fama-French and Goldman Sachs.

Exhibit A3: Market neutral funds – regression outputs

		Market Coefficient	Small Cap Tilt	Value Tilt	Cross-Stock Dispersion
Entire Period (1994-04)	Beta	+0.07	-0.01	+0.00	+0.06
	t-Stat	+4.35	-0.44	+0.17	+0.66
1994 - 1998	Beta	+0.16	+0.03	+0.05	-0.26
	t-Stat	+4.39	+0.69	+0.82	-1.75
1999 - 2004	Beta	+0.03	-0.02	-0.00	+0.27
	t-Stat	+2.43	-1.04	-0.04	+3.38

NOTE: Data from January 1994 to January 2004.

Source: CSFB/Tremont Hedge Fund Indexes, Fama-French and Goldman Sachs.

Exhibit A4: Global macro funds – regression outputs

		Market Coefficient	Small Cap Tilt	Value Tilt	World Cross-Market Dispersion	Stock / Bond Correlation
Entire Period (1994-04)	Beta	+0.16	+0.01	-0.05	-0.40	+0.97
	t-Stat	+2.21	+0.16	-0.59	-1.54	+0.90
1994 - 1998	Beta	+0.41	-0.37	+0.00	-0.69	+17.61
	t-Stat	+2.63	-1.75	+0.01	-2.13	+3.40
1999 - 2004	Beta	+0.03	+0.12	-0.10	+1.06	-2.63
	t-Stat	+0.64	+1.71	-1.76	+1.17	-1.92

NOTE: Data from January 1994 to January 2004.

Source: CSFB/Tremont Hedge Fund Indexes, Fama-French and Goldman Sachs.