NORTHERN TRUST

DIVERSIFY WITH SELECT HEDGE FUND STRATEGIES – REVISITED

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Modern portfolio theory (MPT) suggests investment portfolios can be improved by adding diversifying sources of return. The diversification benefit is greatest when those additional sources of return are truly unique and different from what already exists in the portfolio. The benefit to the investor is a portfolio with the same return for less risk, or conversely, a higher return for the same risk.

Most investment portfolios are largely composed of diversified stocks and bonds because these two major asset classes are uncorrelated and powerfully diversify each other. Other asset classes commonly used in asset allocation represent slightly different flavors of stock and bond risk, so they provide only modest diversification benefit.

Hedge funds are not an asset class per se, but rather a set of strategies that span asset classes and instruments, take on long and short positions, and employ leverage in an attempt to produce differentiated returns. The worst hedge funds merely capture commonly available returns – at high cost. But the best hedge funds produce meaningful returns that are uncorrelated to stocks and bonds, and therefore provide powerful diversification benefit to stock-bond portfolios. Like originally discussed in the 2018 publication of Diversify with Select Hedge Fund Strategies, the key is to be highly selective.

The Hedge Fund Research Inc. (HFRI) Fund Weighted Composite is an equally weighted index of a broad universe of hedge funds, making it a good proxy for average hedge fund returns. Additionally, HFRI publishes four main strategy classification indices that group common hedge fund strategies:

- **Equity Hedge** strategies invest long and short in equity markets globally with varying net exposures, leverage, holding periods and concentration;
- **Event Driven** strategies invest in equity or debt securities based on corporate-related events like mergers and acquisitions, restructuring, or financial distress;
- **Relative Value** strategies seeks to capitalize on pricing discrepancies between related securities in equity, debt, or currency markets;
- **Macro** strategies invest in equity, debt, and currency markets based on movements in underlying economic variables.

The returns of multi-asset class portfolios are largely explained by just a few common risk factors. We use two systematic risk factors to represent the return and risk of the two major asset classes commonly used in asset allocation – stocks and bonds. The **global market factor** represents the return of developed global equity in excess of cash. The **global term factor** represents the return of global Treasury bonds in excess of cash.

Hedge fund returns are regressed against these two factors to provide an opportunity-cost perspective when evaluating a hedge fund allocation. From this perspective, we would only contemplate a hedge fund allocation if we saw strong evidence for a unique and different source of positive return – a robust two-factor alpha. Without alpha, the returns provided by hedge funds are available for a lower cost from a mix of stocks, bonds, and cash.

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Exhibit 1 shows the risk factor exposures (betas) for the HFRI Fund Weighted Composite and each strategy index from 2006 through 2020. This 15-year period offers a contemporary view of hedge fund performance while spanning economic environments, including the historically unique stress periods of the Global Financial Crisis (2009) and COVID-19 (2020).

EXHIBIT 1: HEDGE FUND BETAS

	FUND COMPOSITE	EQUITY HEDGE	RELATIVE VALUE	EVENT DRIVEN	MACRO
Global Market	38%	54%	26%	40%	8%
Global Term	-5%	-11%	-8%	-15%	20%
Adjusted R^2	83%	88%	62%	76%	18%

This simple two-factor model explains 83% of return variation (adjusted R^2) of the HFRI Fund Weighted Composite. Market betas are statistically significant (i.e., likely true) across strategies, whereas global term beta is only present in Macro. This suggests hedge funds are not surrogates for investment-grade bonds. The model does not explain Macro as well, but we need to assess the alphas.

A statistically significant two-factor alpha that is the predominant contributor to total return and risk are the characteristics of a unique and different source of positive average return. Alphas with these characteristics drive allocations in portfolio optimizations because they provide meaningful diversification benefit to stock-bond portfolios. Exhibit 2 displays the two-factor alpha characteristics for the HFRI Composite and each strategy index.

EXHIBIT 2: HEDGE FUND ALPHAS

	FUND COMPOSITE	EQUITY HEDGE	RELATIVE VALUE	EVENT DRIVEN	MACRO
Annual Alpha	1.0%	0.4%	2.4%	1.5%	0.8%
Return Contribution	25%	10%	57%	37%	39%
Risk Contribution	17%	12%	38%	24%	81%

Although all of the alphas are positive, only Relative Value has a statistically significant alpha. The other alphas are statistically indistinguishable from zero and could be random. None of the alphas predominantly contribute to both return and risk.

These indices represent *average* hedge fund returns, and the average does not apply to all. The best hedge funds maximize two-factor alpha and minimize two-factor beta contribution to total return and risk. The key for portfolio investors is to be highly selective in identifying managers that meet the alpha criteria.

The best hedge funds maximize two-factor alpha and its contribution to risk and return.

This naturally leads to identifying the underlying sources of two-factor alpha and confirming they are consistent with the manager's investment process. At the highest level, the sources of alpha include alternative risk premiums and manager skill. Alternative risk premiums are systematic sources of positive average return not prevalent in stock-bond portfolios. They include value, momentum, and trend following. Which require taking on long and short positions and using leverage.

Manager skill is another source of two-factor alpha. The returns from manager skill can be isolated with counteracting long-short positions, and further magnified with leverage. While still uncommon, we find a higher prevalence of robust alphas among hedge fund managers than long-only stock or bond managers, even after attributing returns to alternative risk premiums.

Strong evidence of two-factor alpha amongst the managers selected to fulfill a hedge fund allocation can materially enhance portfolio diversification. Exhibit 3 illustrates the diversification benefit to a stock-bond portfolio when including an allocation to the WM Alternatives[1] combination of hedge fund managers that have exhibited the desired two-factor alpha characteristics.

EXHIBIT 3 – PORTFOLIO PERFORMANCE

	COMPOUND RETURN	STANDARD DEVIATION	EFFICIENCY
60% Stocks / 40% Bonds	6.9	10.3	0.7
40% Stocks / 60% Bonds	6.2	7.1	0.9
40% Stocks / 40% Bonds / 20% Hedge Funds	6.9	7.1	1.0

A common benchmark for well-diversified stock-bond portfolios is a 60% allocation to global stocks (MSCI ACWI) and 40% allocation to US bonds (Bloomberg Barclays US Aggregate Bond). Over the 15-year period of 2006 through 2020, this 60-40 portfolio had an annualized returned of 6.9% with a standard deviation (risk) of 10.3%. By comparison, an allocation of 40% to global stocks, 40% to US bonds,

1 WM Alternatives Hedge Fund combination guidance is a concentrated mix of approved single-manager hedge fund strategies approved for suitable and qualified Northern Trust Wealth Management clients. For illustration purposes only.

and 20% to select hedge funds had the same return but significantly less risk and was more efficient than the 60-40 portfolio. Further, this stock-bond-hedge fund portfolio had the same level of risk as an allocation of 40% global stocks and 60% US bonds but with higher return – the benefit of enhanced diversification.

We agree the average hedge fund may not diversify stock-bond portfolios. But when the right methods are used, a highly selective and well-constructed hedge fund allocation may materially enhance stock-bond portfolios.

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