IMPROVING EQUITY PORTFOLIO EFFICIENCY: THE CASE FOR LONG/SHORT EQUITY

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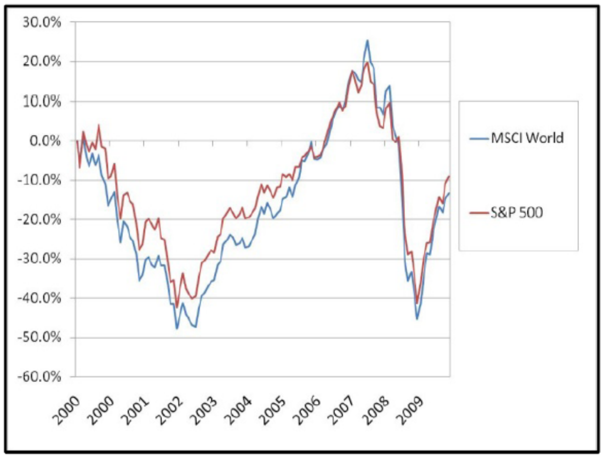
Introduction

For most long-term investment programs, stock market exposure represents an important expected driver of portfolio growth. Yet, as the last decade has reminded us, equity volatility can dominate the overall risk profile of an investment program, and equity markets do not always deliver positive returns. As Chart 1 shows, the long-only equity indices ended the last decade *down* on a cumulative return basis.

Chart 1: Cumulative Return of Indices between Jan 2000 and Dec 2009



Source: Pertrac

In addition, there is a growing understanding that the constraints imposed on traditional long-only active managers may limit their ability to add significant value above their respective indices. As a result, many investors are seeking approaches that provide exposure to the long-term growth benefits of owning stocks, while allowing for better management of market risk. We believe that utilizing long/short equity strategies is one of the ways investors can complement an existing long-only equity portfolio to achieve these objectives.

Over the last ten and fifteen year periods, long/short equity strategies have delivered investment performance that is superior to long-only strategies, both on an absolute and risk-adjusted basis. While the historical 10-year period has been characterized by low equity market returns and high volatility, an environment well suited for long/short strategies, we believe that long/short equity managers will continue to deliver good risk-adjusted returns and will prove to be a complement and diversifier to traditional long only equities.

EQUITY VOLATILITY CAN DOMINATE THE OVERALL RISK PROFILE OF AN INVESTMENT PROGRAM

KEY TOPICS

- An introduction to long/short equity strategies
- The case for complementing long-only strategies with long/short mandates
- The risks of long/short strategies and ways to mitigate risk

What are Long/Short Equity Strategies?

Long/short describes an investment strategy in which the long-only constraint is relaxed and shorting (or, selling borrowed securities) is allowed.

In its simplest terms, taking a long position means to buy a security that is expected to increase in value. Taking a short position is to sell a security that is expected to fall in value. A short position is created by borrowing a security that one does not own, selling it in anticipation that the security will decrease in value, and then buying it back later and returning the security to the lender. The investor makes money if the security is bought back at a price less than what it was sold for originally.

Long/short equity managers are distinct from long-only managers who can only buy stocks long. Because long/short managers can short, they have the opportunity to make money in up markets, down markets, or sideways-trending markets.

Like talented long-only active managers that attempt to generate alpha by picking the best performing stocks, long/short managers are attempting to generate alpha on both the long side of their portfolio and the short side. This ability to generate returns on both sides of the portfolio - referred to as "double alpha" - is expected to be a significant source of excess return for these funds.

By removing the shorting constraint and allowing a broadly diversified universe of opportunities, managers can also generate superior risk-adjusted returns through active adjustment of equity market exposure. In practice, these funds can tactically adjust market exposure to reflect how undervalued or overvalued the equity market is at any point in time. While stock selection is an important focus of these funds, the returns generated from good, single name stock selection can be dwarfed by the impact of large overall market moves. This tactical adjustment to market exposure is done to reduce or increase risk, which is different from most long-only funds that make adjustments to individual stock or sector weights relative to a benchmark.

For the purposes of this review, we define long/short funds as funds that use equities as their primary instrument for investing and that have a long-term equity bias in their portfolios (usually averaging 20-60% net equity exposure). It is important to note that this is the *average* exposure. During different periods of time, many of these funds may be significantly above or below this range as managers respond to changing market conditions.

Long/short funds will position their portfolios to generate returns in varying market conditions. Long/short managers aim to be "net long" in positive trending equity markets and potentially "net short" in downward trending equity markets. Table 1 shows the mechanics of how long/short funds adjust their exposure to equities.

Table 1: Example Mechanics of Long Only and Long/Short Investing

Manager Style	Investment Amount	Equity Component	Gross Exposure	Beta to Equity Markets
Long-only	$100 Cash	Buy $100 Equities	100%	~1.0
Market Neutral	$100 Cash	Buy $100 Equity Security A; Sell $100 Equity Security B	200%	~0
Long/Short - Long Biased	$100 Cash	Buy $100 Equity Security A; Sell $50 Equity Security B	150%	~0.5

Source: NEPC

In general, long/short funds will adjust their exposures in the following markets:

–*Overvalued Markets:* In an expensive or overvalued market, a long/short fund could be net short, or have reduced exposure to equity markets (known as beta). The fund would profit if their short positions declined in value.

–*Fairly Valued Markets:* In a fairly valued market, a long/short fund may be market neutral, looking to add value primarily through security selection with equal short and long securities in the portfolio. The fund would profit if the individual positions outperformed.

–*Undervalued Markets:* In a cheap or undervalued market a long/short fund could be net long, with more of the portfolio long securities than short. The fund would profit if their long positions rose in value.

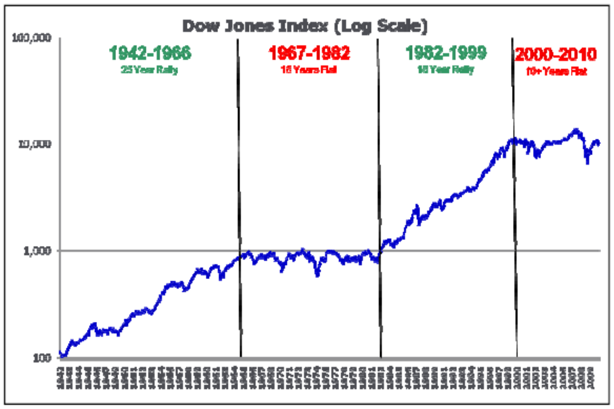
1. Net long means the value of the long positions exceeds the value of the short positions.

2. Net short means the value of short positions is greater than the value of long positions

Why Consider Long/Short Equity?

NEPC is currently forecasting subdued returns from the stock market over the coming five to seven year period with potentially elevated volatility. Chart 2, shows the historical growth of the Dow Jones Index, which in this case represents equity markets. As the chart shows, there were two long periods of up-trending markets in which equity returns were significantly positive (1942–1966 and 1982-1999), and two periods in which equity returns were sideways-trending and more volatile (1967-1982 and 2000-2010).

Chart 2: Growth of Dow Jones Index



Source: Dow Jones

A LONG/SHORT FUND THAT IS ABLE TO HEDGE MAY BE ABLE TO MITIGATE LOSSES

To prepare for a lower return, higher volatility equity market, NEPC has recommended that clients build portfolios that can weather such an environment. We have been advocates of global asset allocation, risk parity, and reduced equity commitments. Complementing long-only equities with long/short is another way to build portfolios that can be well positioned going forward.

In practice, long/short managers can benefit from relaxed constraints in the following three ways:

1. A long/short fund that is able to hedge the portfolio by shorting stocks may be able to mitigate losses during significant market declines, which could minimize drawdowns and allow for greater long term compounded returns.
2. The short side of the portfolio enables long/short funds to have greater concentration in their highest conviction long ideas, because they can take bigger positions and hedge some of the risk by shorting securities. A long-only fund that does not have the ability to hedge risk is less able to tolerate the volatility of a highly concentrated position. Long/short funds on the other hand can hedge some of the market risk in a single name position through their short portfolio and therefore can express high conviction, concentrated long ideas, which may provide for strong returns in all environments.
3. The ability to invest in a broader, less constrained universe enables long/short funds to generate returns through opportunistic investments in equities and non-equity investments, which may diversify sources of risk relative to a benchmark and provide better risk adjusted returns.

In contrast, because long-only funds are often constrained by a benchmark, they have only one tool at their disposal if they want to reduce equity—cash. In practice, cash positions are limited for long-only managers in the 5-10% range because they generally have a mandate to remain fully invested. Therefore the ability to use cash as a hedge is limited. Long/short funds on the other hand are able to reduce directional long equity exposure through active management of their short portfolio. This enables long/short funds to continue to add alpha through stock selection on the short portfolio.

Table 2: Summary of the Sources of Return for Long-only and Long/Short Funds

Sources of Return		
Long/Short Equity		**Long Only Equity**
Long equities		Long equities
Short equities		Under and overweight relative to benchmark
Adjust gross and net exposure using both long positions and short positions		Adjust exposure with cash
Opportunistic, non-equity investments		Equities only

Source: NEPC

As table 2 summarizes, it is this expanded ability to use multiple tools to manage the portfolio that makes long/short equity funds an attractive option when building an equity portfolio.

There is still a place for long-only equity. As we mentioned, long/short managers have historically captured less than 100% of the equity market upside. Furthermore, investors still want (and/or need) the long-term growth opportunity that equity offers relative to bonds, cash, and other investments. Consistent with many of our long-term themes, we advocate that clients use long/short managers as a tactical way to dial risk up or down as appropriate.

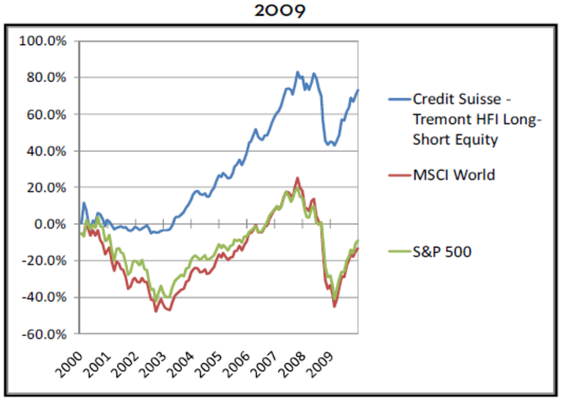
WE ADVOCATE THAT CLIENTS USE LONG/SHORT AS A TACTICAL WAY TO DIAL RISK UP OR DOWN

Track Record of Long/Short Equity

We have discussed the theoretical support for investing in long/short equity. We now want to examine the historical return evidence. To do this, we have used broad market indices as a proxy for long-only funds and broad long/short hedge fund averages as a proxy for long/short funds.

The data show long/short equity, as a strategy, fared better during the past decade than long-only funds. Long/short funds were able to capture returns during a volatile period in the global equity market. As Chart 3 shows, the Credit Suisse Tremont HFI Long/Short index ended the decade markedly higher than where it began. In contrast, the MSCI World and S&P 500 ended the decade lower than where they began.

Chart 3: Monthly Cumulative Return of Long Only and Long/Short Indices between January 2000 and December 2009



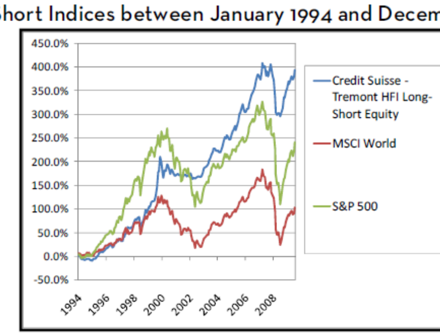
Source: Pertrac

3. The long only indices used in this analysis are indices that reflect a component of the equity market. The long/short "index" used in this analysis is a commonly used composite of a select number of long/short hedge funds. For this reason we refer to the Credit Suisse Tremont HFI long/short composite as an average.

The drawdowns in the equity market from 2000 – 2002 presented an opportunity to long-short managers who, on average, protected well through the downturn and were able to take advantage of the market rally beginning in 2003. By contrast, the equity indices did not return to the levels of 2000 until 2006.

When the analysis is extended over longer time periods beyond the past decade, the story is similar. Chart 4 extends the performance history to beyond the past decade and looks back to the inception of the Credit Suisse Long/Short Average in January 1994.

Chart 4: Monthly Cumulative Return of Long Only and Long/Short Indices between January 1994 and December 2009



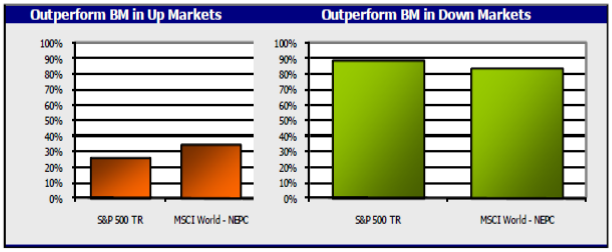
Source: Pertrac

The long/short average outperformed the long-only indices over the extended time period. It is important to note that during the bull market of the late 90s, the chart shows that the long/short average underperformed the S&P 500. This is an important point for investors considering long/short equity funds as a replacement to long-only. Long/short funds may underperform long-only funds during bull markets. We will discuss this risk in more detail later.

How did long/short equity funds generate such strong relative returns over these time periods? One part of the answer is that long/short equity funds have been able to use their expanded tool kit to generate returns in down markets and protect capital.

Despite the S&P 500 outperforming the long/short average during the 1990s, the long/short average ended the extended time period with stronger cumulative returns. The key to this long-term outperformance is the avoidance of the long period of underperformance that followed the 90s bull market. The long-only index gave up much of its performance during the two large drawdowns in 2002 and 2008. As chart 5 shows, the long/short average was able to markedly outperform long-only during down markets while still capturing a good percentage of returns in up markets.

Chart 5: Credit Suisse Tremont HFI Long/Short Average Outperformance vs. Long-Only Indices During Up and Down Markets (Jan 1994-Dec 2009)



Source: Pertrac

Upside and Drawdown Analysis

Since mitigating losses during down markets is one of this strategy's greatest strengths, a focused look at long/short equity fund performance during periods of significant drawdowns is a useful exercise. Few time periods illustrate the role of capital preservation better than 2008.

Many long/short equity funds hedged their exposures throughout 2008, which minimized total losses by generating positive returns through their short portfolio. Table 3 shows the performance of the Credit Suisse Tremont HFI Long/Short Average vs. the MSCI World and S&P 500 indices during 2008. The long/short average provided stronger relative returns than the long-only index during a period of significant drawdown in the overall market.

Table 3: Performance Ranking of Long Only and Long/Short Indices During 2008

Rank	Index	2008 Return
1	Credit Suisse - Tremont HFI Long-Short Equity	-19.8%
2	S&P 500	-37.0%
3	MSCI World	-43.5%

Source: Pertrac

While an annual return of -19.8% is certainly disappointing, most investors that used long/short equity as a complement to their long-only equity allocation ended the year better off than if they relied solely on long-only equities.

Although 2008 was very difficult for equities, it was followed by a very strong rally the next year. Given the robust markets in 2009, it is not surprising that the hedged portfolios in the long/short equity average underperformed the long-only indices. Table 4 shows the performance of the long/short average vs. the broad long-only market indices. Remember, the hedged equity approach is trying to generate stronger long term cumulative returns in part by avoiding significant losses. Running a hedged portfolio with a lower beta to the equity market means that during strong bull markets, many long/short funds will underperform long-only managers. But over a full market cycle, long/short funds can provide stronger risk adjusted returns. Table 5 shows the cumulative return of 2008 and 2009 .

Table 4: Performance Ranking of Long Only and Long/Short Indices During 2009

Rank	Index	2009 Return
1	MSCI World	30.0%
2	S&P 500	26.5%
3	Credit Suisse - Tremont HFI Long-Short Equity	19.5%

Source: Pertrac

Table 5: Long Only and Long/Short Index Cumulative Performance over the Combined Time Period of 2008 and 2009

Rank	Index	Cummulative Return 2008 & 2009
1	Credit Suisse - Tremont HFI Long-Short Equity	-4.1%
2	S&P 500	-20.3%
3	MSCI World	-26.6%

Source: Pertrac

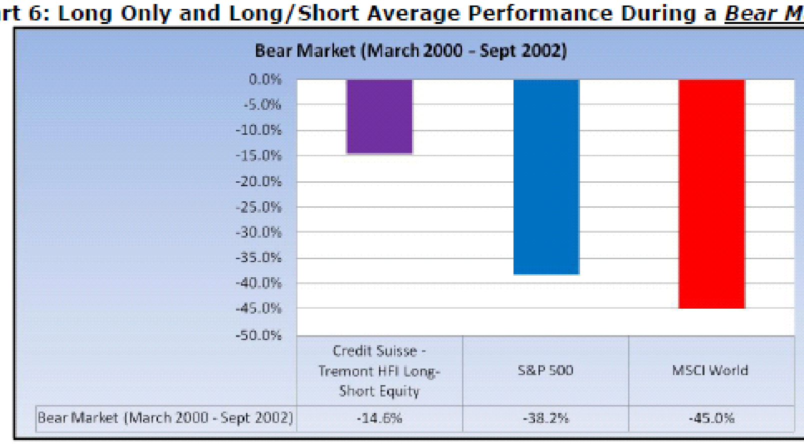
While the potential for underperformance during bull markets is a genuine concern, the focus of investors should remain on two things:

1. The cumulative return of their investment over full market cycles
2. The lower volatility that long/short funds provide

This point is illustrated by looking at the return profile of the indices during three different markets.

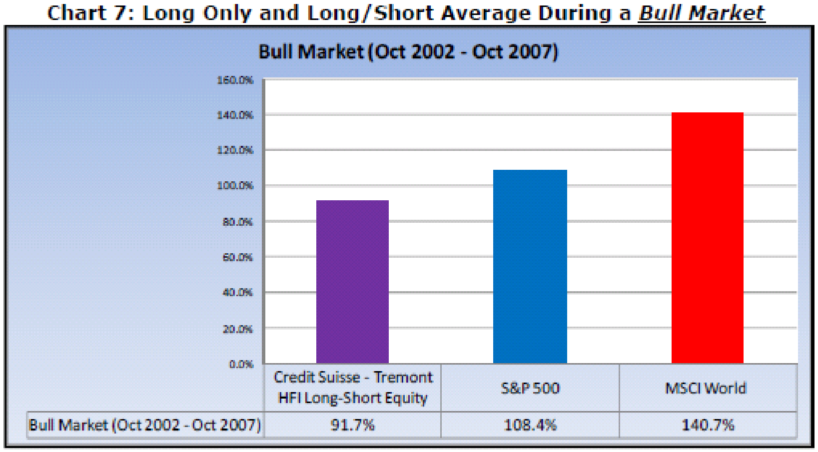
- **Bear Market** – Mar 2000 - Sept 2002
- **Bull Market** - Oct 2002 – Oct 2007
- **Full Market** – Mar 2000 – Oct 2007

Chart 6: Long Only and Long/Short Average Performance During a *Bear Market*



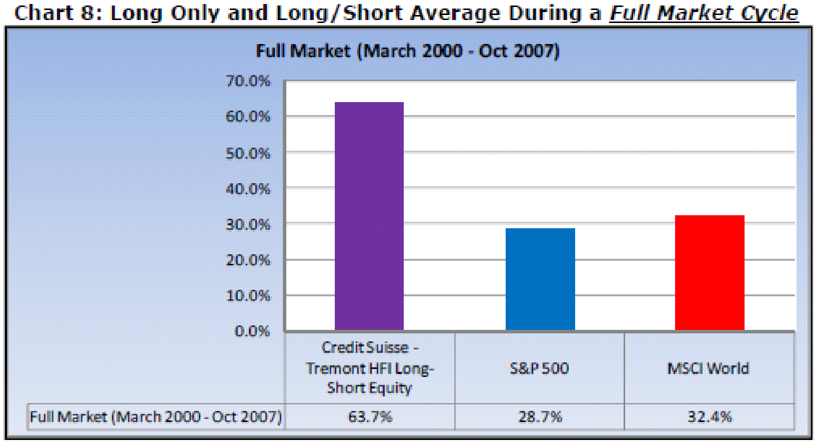
Source: Pertrac

Chart 7: Long Only and Long/Short Average During a *Bull Market*



Source: Pertrac

Chart 8: Long Only and Long/Short Average During a *Full Market Cycle*



Source: Pertrac

During the bear market of March 2000 to September 2002, the long/short average outperformed the long-only indices by having a hedged portfolio that reduced equity exposure and generated returns through short stock selection (Chart 6).

During the bull market of October 2002 to October 2007 (Chart 7), the long/short average underperformed the long-only indices because the hedged portfolio meant that the long/short average was less exposed to the upward direction of the market.

Because the magnitude of the gains and losses during the bear and bull markets were not equal, the cumulative return over longer time periods reveals the strong performance of long/short funds. Chart 8 shows the cumulative return over the full market cycle from March 2000 – Oct 2007.

Reduced Volatility

For many institutional investors, the volatility of equities creates a challenge. Long/short equity funds are able to reduce the volatility that is inherent in equities. As Table 6 shows, the ability to hedge the portfolio through short exposure results in a standard deviation of the long/short index that is significantly lower than the long-only index.

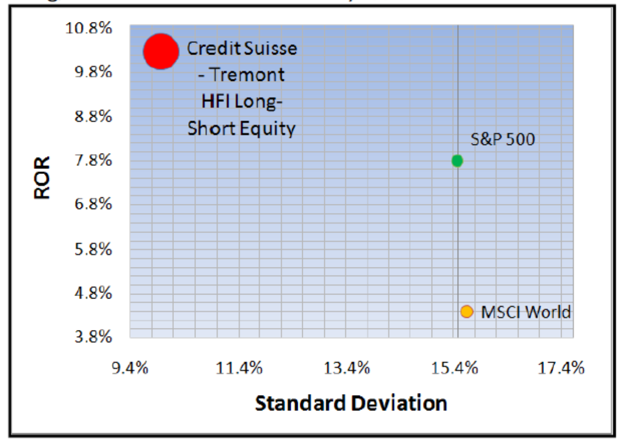
Table 6 looks at the volatility of the Credit Suisse Tremont HFI Hedge Fund Average since its inception in 1994. The Credit Suisse Tremont HFI Long/Short Average had a standard deviation of 10.0% vs. 15.7% for the MSCI World, and 15.5% for the S&P 500.

Table 6: Standard Deviation Ranking of Long Only and Long/Short Indices

Rank	Index	Standard Deviation
1	Credit Suisse - Tremont HFI Long Short Equity	10.0%
2	S&P 500	15.5%
3	MSCI World	15.7%

Source: Pertrac; For the Common Time Period of January 1994 to December 2009

Chart 9: Risk and Return Scatterplot Of Long Only and Long/Short Indices between January 1994 and December 2009



Source: Pertrac

Chart 9 shows the result of the combined effects of stronger absolute performance *and* lower volatility. The long/short equity average is located up and to the left of the long-only equity indices in the risk/return scatter plot indicating stronger risk-adjusted returns.

Risks of Investing in Long/Short Equity

While we believe that relaxing the long-only constraint can help investors realize stronger risk-adjusted returns, there are risks that come with these investments.

Short selling: Short selling is not simply the mirror image of long investing. The losses on long positions are capped at the acquisition costs (i.e. the stock can only go to $0), while the losses on short positions are unlimited because an investor incurs losses on short positions when they increase in price. As such, there is no limit to the upside potential of a security and therefore no limit on the loss potential.

Manager skill: Manager skill set is very important in short selling and differs from long-only research. It is a different research approach to sell securities that you have conviction will either depreciate in value or be a good hedge to another security than to buy securities that you believe will appreciate in value relative to the market.

Mechanics of long/short: The mechanics of investing can also be more complicated. While managers are not typically more than 100% net long, the gross exposure of the portfolio can be greater than 100% and is therefore levered to the equity market. As such, managers and investors need to understand that more complicated risk management is required.

Added Exposures: With fewer constraints, there are more areas in which managers can invest. Managers must closely monitor risk exposures (stocks, sectors, betas). The back office operations must also be experienced, as trading, loaning, and cash settlement can be more difficult and will have additional associated costs.

Terms & Structure: Long/short funds often have less transparency and greater lock-up periods than long-only funds. Investors should expect higher fees and fewer redemption periods (less liquidity of the product). While the fee structure in long/short hedge funds is more closely aligned with investors through performance-based compensation, the overall fees paid to hedge fund managers are higher than long-only funds. Hedge funds may also have limits on how much an investor can redeem at one time (gates) or when they can redeem. There may also be a required minimum time period of investing in a fund (lock ups). One issue that long/short managers may not have as much as other hedge funds, however, is the valuation concern for FAS 157. For those investors that have liquidity concerns with their underlying funds, most of a long/short manager's securities will be either Level 1 or Level 2.

WITH FEWER CONSTRAINTS THERE ARE MORE AREAS IN WHICH MANAGERS CAN INVEST

Transparency: Hedge funds often provide less transparency on positions than long-only funds.

Conclusion

NEPC recommends that clients consider the role of long/short equity within the construct of their portfolio. In practice, investors tend to be in various places along the spectrum of implementing this mandate. Broadly we are recommending that clients:

1. With long/short equities within their direct hedge fund allocation review the directionality (or, long-bias) of the manager(s) and consider moving them to the equity allocation.

2. Who have a diversified direct hedge fund allocation, but no long/short equity, consider long/short equity for part of their equity allocation.

3. Who have long/short managers in the equity allocation, consider the active risk contribution of long-only and long/short managers and reweight managers as appropriate.

4. Discuss with your consultant the education needed for and the applicability of this mandate.

We believe that the higher volatility and lower stock market returns of the last decade will persist - an environment that tends to be a headwind for long-only managers. As a result, we continue to advocate for reduced strategic equity commitments by relaxing constraints on managers. We view long/short equity as a natural extension of this recommendation and look forward to working with our clients to implement this approach.

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- Information on market indices was provided by sources external to NEPC, and other data used to prepare this report was obtained directly from the investment manager(s). While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
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In addition, it is important that investors understand the following characteristics of non-traditional investment strategies including hedge funds, real estate and private equity:

1. Performance can be volatile and investors could lose all or a substantial portion of their investment
2. Leverage and other speculative practices may increase the risk of loss
3. Past performance may be revised due to the revaluation of investments
4. These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms
5. A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value
6. These funds are not subject to the same regulatory requirements as registered investment vehicles
7. Managers are not required to provide periodic pricing or valuation information to investors
8. These funds may have complex tax structures and delays in distributing important tax information
9. These funds often charge high fees
10. Investment agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy

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