ASPEN PARTNERS

ASPEN MANAGED FUTURES BETA INDEX

Managed Futures & Alternative Beta
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Aspen Partners, Ltd. / 9 East Franklin Street / Richmond, VA 23219
866.277.3619 / info@aspenpartners.com

Background

A common charge leveled against index-based liquid alternative products is that they have less value than hedge funds or funds managed by commodity trading advisors (CTAs) because they do not replicate manager skill. As the argument goes, (1) investors hire (good) fund managers for their ability to generate alpha; (2) liquid alts indexes do not generate alpha; (3) therefore, liquid alts indexes are poor investments. The trouble with this argument lies not so much with the formal logic as with the premise. By design, liquid alternatives products offer inexpensive, liquid access to "alternative beta" (discussed below); thus, by design, they do not produce the alpha that a good fund manager can produce. They are not the answer for investors whose primary interest is in capturing manager-specific alpha, nor are they designed to be. However, for investors who want access to the underlying characteristics of a given alternative asset class with greater liquidity and lower fees (and without the complexities inherent in limited partnership investing), or for investors who haven't the inclination or the ability to conduct the necessary due diligence to ferret out the best fund managers, alternative beta strategies such as the Aspen Managed Futures Beta Index ("Aspen MFBI") can be very attractive.

Managed Futures Beta

Perhaps in no branch of the alternative investment world is the potential value of inexpensive, liquid beta more easily demonstrated than in managed futures. This will be shown below, but first a quick discussion about the meaning of "beta" is in order.

Cliff Asness, the founder of AQR Capital has famously defined beta as "any strategy that can be written down."[1] While a potentially useful way of distinguishing beta from the "manager skill" concept of alpha,[2] this definition would have peculiar consequences for managed futures, an industry in which the majority of funds are based on systematic trading strategies. By definition, this means that the trading systems for the majority of CTAs have been codified—that is, "written down." Are we to believe that managed futures are a beta-dominated alternative asset class?

Yes and no. While it seems a bit strange to label managers as beta rather than alpha generators simply because they've codified their trading systems, it is nonetheless hard to deny that a large degree of correlation exists among the returns of the large CTAs that dominate the managed futures space (as represented by published benchmark indices like the Barclay BTOP50 Index). This is because a single category of investment strategies—medium-to-long-term trend following—dominates the correlation characteristics of managed futures, as has been well documented.[3] This dependence on trend-following represents the strongest case for the existence and importance of managed futures "alternative beta" (defined as a liquid, inexpensively replicated return stream with high correlation and similar statistical characteristics to the managed futures universe[4]). This is why the Aspen Managed Futures Beta Index is capable of reproducing the primary characteristics of the managed futures industry through a systematic, mechanical approach.

To demonstrate the value of the alternative beta offered by Aspen MFBI, we will look at a direct comparison of Aspen MFBI to the BTOP50 Index of large CTAs. We will also look at how both indices operate as diversifiers in an investment portfolio.

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1 Quote from: Mebane T. Faber and Eric W. Richardson, The Ivy Portfolio: How to Invest Like the Top Endowments and Avoid Bear Markets, Wiley [30 March 2009]: p. 31.

2 This concept of "alpha" as a measure of the value added by manager skill is related to, but distinct from "Jensen's alpha," a mathematical construct defined in footnote 6.

3 For example, see the following (copies available upon request):
- Burghardt, Galen, et al, "Two benchmarks for momentum trading," Newedge AlternativeEdge Research, August 26, 2010: http://opalesque.com/files/AlternativeEdge-Two_benchmarks_for_momentum_trading-1.pdf
- Spurgin, Richard, "A Benchmark for Commodity Trading Advisor Performance," CISDM Working Paper Series, April 1 1999: http://www.pinnaclecta.com/A%20BENCHMARK%20FOR%20CTA%20PERFORMANCE.pdf

4 This operational definition of "alternative beta" is related to, but distinct from the mathematical concept of beta defined in footnote 6.

Aspen MFBI and BTOP50: A Head-to-Head Comparison

Due to the dominant role of trend-following in the managed futures space, all managed futures liquid index products on the market (including Aspen MFBI) rely on a rules-based trend-following strategy. However, the CTA universe also includes a number of counter-trend CTAs and managed futures strategies that help bolster the risk/return characteristics of the industry, particularly in periods of low broad market risk. In such times, overall market price volatility tends to be low, which does not generally favor the entrenchment of strong price trends. In recognition of this fact, Aspen MFBI is the only mechanical managed futures index of which we are aware that supplements the dominant trend-following exposure with a counter-trend sub-strategy, weighting most heavily to that strategy when exogenous market risk is deemed to be low (per index rules).

By balancing exposures between "high-vol" trend-following and "low-vol" counter-trend strategies, Aspen MFBI is able to generate a risk/return profile comparable to that of the BTOP50, without sacrificing the characteristics that make managed futures an excellent diversifier (as will be shown below).

Table I presents comparative statistics for Aspen MFBI and BTOP50. Monthly data was analyzed from January 2003 (the pro forma inception of Aspen MFBI) through December 2016. On a risk/return basis, Aspen MFBI compares well to BTOP50, in that Aspen MFBI produces about 120% more annualized return with only about a 33% increase in standard deviation over the lookback period, resulting in higher risk-adjusted return metrics. Aspen MFBI also manages a strong correlation to BTOP50—the first indication that Aspen MFBI meaningfully captures the alternative beta characteristics of managed futures returns.

Table I: Aspen MFBI and BTOP50 Index, Comparative Statistics
January 2003 – December 2016

	Aspen MFBI	BTOP50
Annualized Return	7.29%	3.27%
Annualized Standard Deviation	9.44%	7.11%
Return / Standard Deviation	0.77	0.46
Sharpe Ratio (1.21% Risk Free Rate)	0.64	0.29
Maximum Drawdown	-12.97%	-10.93%
Correlation to BTOP50	0.74	1.00
Jensen's Alpha to BTOP50 (1.21% Risk Free Rate)	4.07%	0.00%
Alpha Standard Error	1.74%	0.00%

Source: Quantitative Equity Strategies

Its excellent risk/return characteristics allow Aspen MFBI to post a strong, positive alpha[5] to the BTOP50 Index.[6] Given that Aspen MFBI is a beta product, this "alpha" is primarily generated by Aspen MFBI's lower fee structure. The persistence of Aspen MFBI's lower fees largely explains the stability of Aspen MFBI's alpha to BTOP50, as demonstrated by the low alpha standard error (a statistical measure of the dispersion of alpha).

[5] Jensen's Alpha is probably the most common way of measuring an investment's alpha to a benchmark. It is defined as: $\alpha = Ri - [Rf + \beta im * (Rm - Rf)]$, where Ri is the investment's return, Rf is the risk-free return, Rm is the return of the benchmark (often the market portfolio), and βim is the beta of the investment to the market, where beta is calculated as βim = Covariance(Ri, Rm) / Variance(Rm).

[6] Aspen MFBI is calculated net of a 1.5%/year fee, with no incentive fee; a typical CTA charges around 2%/year in management fees and a 20% incentive fee.

Managed Futures Beta and Portfolio Diversification

The previous section demonstrates that the risk/return and correlation characteristics of managed futures indices can be reasonably replicated via a mechanical managed futures beta methodology. One criticism sometimes levied against this kind of analysis is that the value added by individual managers in the alternatives space gets diversified away in alternatives index construction. In other words, according to this line of reasoning, even if an index such as BTOP50 can be replicated, the resulting product would be of little value because the "real" value in alternatives investing comes from the alpha produced by the best alternative fund managers. Leaving aside the dicey question of how an investor is supposed to identify the "best" funds, this line of reasoning raises a fair question as to whether the strong "beta" element of managed futures returns, by itself, has value in portfolio construction. The answer is an emphatic "yes"!

The role of managed futures as a potent portfolio diversifier has been demonstrated repeatedly, beginning with Harvard professor John Lintner's seminal study on the topic in 1983.[7] The diversification potential for managed futures stems primarily from the industry's long-term low-to-negative correlation to traditional asset classes (e.g., stocks and bonds). Demonstrating this attribute, Table II shows the correlation of Aspen MFBI and BTOP50 to stocks (represented by the S&P 500 Index), fixed income (represented by the Barclays Aggregate Bond Index), and long-only commodities (represented by the Goldman Sachs Commodity Index).

Table II: Aspen MFBI and BTOP50 Index Correlations to Traditional Asset Classes, January 2003 – December 2016

	Aspen MFBI	BTOP50
S&P 500 Index	-0.16	0.01
Barclays Aggregate Bond Index	-0.01	0.19
Goldman Sachs Commodity Index	-0.10	0.03

Source: Quantitative Equity Strategies

Between perfect positive correlation of +1.00 and perfect negative correlation of -1.00, how do managed futures co-move with traditional assets over the long run? The strongest positive correlation is 0.15 between the BTOP50 Index and the Barclays Aggregate Bond Index. At most, then, passive long-only fixed income returns explain about 4% (0.19 * 0.19) of managed futures performance. BTOP50 and Aspen MFBI returns are effectively uncorrelated to those of long-only stocks, bonds and commodities over the long run. Aspen MFBI's correlation characteristics are actually somewhat superior, since negative correlations are preferable to positive.

Given the essentially uncorrelated (i.e., idiosyncratic or diversifiable) volatility of managed futures and its expected return above the risk-free rate, modern portfolio theory would predict that the inclusion of managed futures in a portfolio of traditional assets would improve the portfolio's risk/return characteristics.[8] A simple portfolio construction exercise demonstrates that this is indeed the case. Table III begins with a standard "Base" portfolio of 60% stocks and 40% bonds, rebalanced monthly. It then shows the improvements obtained by allocating 5%, 10%, or even 25% of portfolio capital of Aspen MFBI or the BTOP50 Index.

[7] John Lintner, "The Potential Role of Managed Commodity-Financial Futures Accounts (and/or Funds) in Portfolios of Stocks and Bonds," Presentation to the Annual Conference of the Financial Analysts Federation [May 1983].

[8] For more in-depth information about the role of managed futures as a portfolio diversifier, please request a copy of Aspen's "Ultimate Diversifier" whitepaper.

Table III: Portfolio Diversification with Managed Futures Beta
January 2003 – December 2016

Diversification with Aspen MFBI

	Base	95%/5%	90%/10%	75%/25%
Annualized Return	7.38%	7.42%	7. 467%	7.54%
Annualized Standard Deviation	8.33%	7.85%	7.41%	6.32%
Return / Standard Deviation	0.89	0.94	1.01	1.19
Sharpe Ratio (1.21% Risk Free Rate)	0.74	0.79	0.84	1.00
Maximum Drawdown	-32.5%	-29.8%	-26.9%	-17.8%

Source: Quantitative Equity Strategies

Diversification with BTOP50 Index

	Base	95%/5%	90%/10%	75%/25%
Annualized Return	7.38%	7.20%	7.02%	6.45%
Annualized Standard Deviation	8.33%	7.94%	7.56%	6.56%
Return / Standard Deviation	0.89	0.91	0.93	0.98
Sharpe Ratio (1.21% Risk Free Rate)	0.74	0.75	0.77	0.80
Maximum Drawdown	-32.5%	-30.6%	-28.7%	-22.6%

Source: Quantitative Equity Strategies

The inclusion of managed futures substantially improves risk-adjusted portfolio returns (as measured by the Sharpe ratio) and reduces the severity of portfolio drawdowns. These results are more pronounced as the size of the managed futures allocation is increased, without exception.

Due to the exceptional diversification characteristics of the alternative beta embedded in managed futures returns, a managed futures beta product is a manifestly beneficial addition to a portfolio of traditional assets. In investment portfolios where the value of liquidity and accessibility outweighs the potential benefits of managed futures alpha, a managed futures beta product offers the perfect solution.

Important Disclosures

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS. There is no assurance that the investment process will consistently lead to successful investing. There is no guarantee that stated objectives will be met.

All Aspen MFBI monthly returns shown do not include transaction cost, but are net of 1.50% for estimated fees and other expenses. An investor cannot invest directly in an index.

This document does not constitute an offer to sell or solicitation of an offer to buy any security. The information contained herein is provided for educational purposes only and is not intended to solicit interest in any investment opportunity.

Data has been obtained from reliable sources. Aspen Partners believes the information herein to be reliable; yet no warranty or guarantee is made as to its accuracy or completeness.

Benchmarks & Indices

Aspen Managed Futures Beta Index (Aspen MFBI) is constructed using a quantitative, rules-based model designed to replicate the trend-following and counter-trend exposure of futures markets by allocating assets to liquid futures contracts of certain financial and commodities futures markets. The Index therefore seeks to reflect the performance of strategies and exposures common to a broad universe of futures markets, i.e., managed futures beta.

The Barclay BTOP50 Index is an index of the largest investable CTA programs as measured by assets under management.

The S&P 500 Index is an index of 500 large-cap US stocks.

The Barclays Aggregate Bond Index is a broad-based index of investment grade bonds traded in the U.S.

The Goldman Sachs Commodity Index (also known as the S&P GSCI) is a long-only index of commodity returns.

The Barclays Aggregate Bond Index, Barclay BTOP50, S&P 500 Index and Goldman Sachs Commodity Index are unmanaged and do not represent the attempt of any manager to generate returns on an investment. These benchmark indices do not include transaction costs and other expenses. An investor cannot invest directly in an index.

Definitions

Annualized Return: The year-over-year growth rate of an investment over a specified period of time. The rate of return that, if compounded every year, would have produced the same total return as was produced by the investment.

Correlation: A statistical measure of how an index moves in relation to another index or model portfolio.

Jensen's Alpha: A risk-adjusted performance measure that represents the average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return.

Maximum Drawdown: The greatest peak-to-trough decline during a specific period of an investment.

Managed Futures Alternative Beta: A liquid, inexpensively replicated return stream with high correlation and similar statistical characteristics to the managed futures universe.

Sharpe Ratio: A measurement of risk-adjusted performance which subtracts the "risk-free" rate of return from an investment's performance.

Standard Deviation: A measurement of the return's dispersion from its mean, indicating an investment's volatility.