

A CORE PORTFOLIO DIVERSIFIER

MAKING THE CASE FOR SYSTEMATIC
TREND FOLLOWING AND THE ASPEN MFBI

JANUARY 2017



ASPEN PARTNERS
ASPEN MANAGED FUTURES BETA INDEX

A Thoughtful Approach to Investor Portfolio Diversification

Overview

Aspen's mission is to provide investors and their advisors with an investment strategy designed to respond to ever changing market conditions with low correlation to traditional asset classes. We believe that diversified market exposure assists in reaching long-term performance objectives in today's challenging investment environment, while reducing the overall portfolio risk. We believe our commitment to provide a robust, liquid, low-cost product, along with ongoing education on alternatives and unmatched client support positions us as an industry leader in the liquid alternatives space.

EXECUTIVE SUMMARY

Firm:	Based in Richmond, Virginia, Aspen has been in the managed futures space for over 20 years, is independently owned and registered with the SEC and CFTC.
Strategy:	Aspen employs a robust, fully systematic, medium-to-long term trend following approach, across 4 sectors and up to 23 markets.
Value Proposition:	Aspen developed and brought to the marketplace a diversified, low-cost, fully transparent, "alternative beta" index for investors looking to add managed futures to a thoughtfully constructed portfolio and wanting non-correlated returns.
Experience:	The executive team has nearly 9 decades of combined experience in the managed futures arena, through numerous economic cycles and global crises.

Diversification with Systematic Trend Following

- Non-correlation

	Stocks	Bonds	Commodities	Currencies
Correlation	-0.04	0.20	0.07	0.12
R-Squared	0.2%	4.0%	0.5%	1.4%

- Convexity

	Stocks	Bonds	Commodities	Currencies
Up-Correlation	0.11	0.19	0.21	0.39
Down-Correlation	-0.23	-0.05	0.03	-0.15
Up-Beta	0.12	0.69	0.15	0.84
Down-Beta	-0.20	-0.22	0.02	-0.22

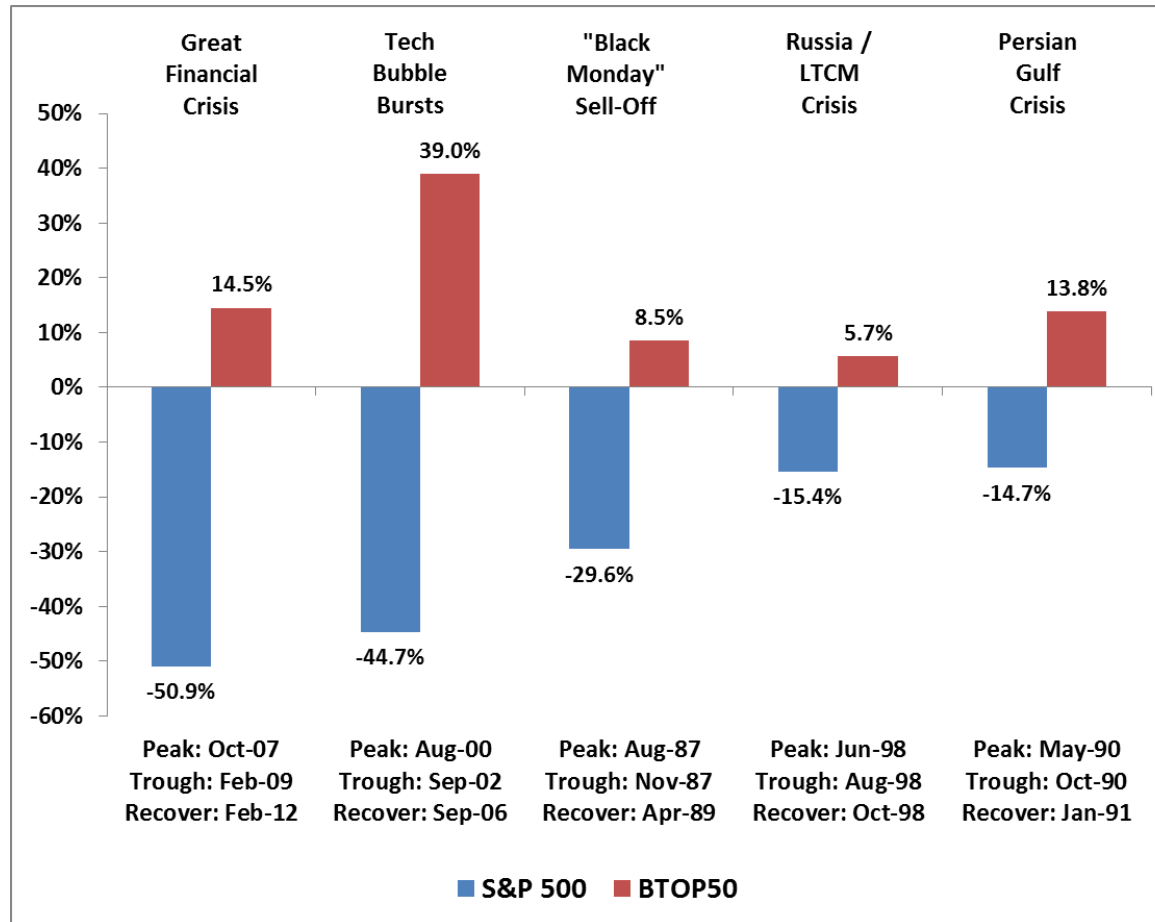
- Positive Skew

	Managed Futures	Stocks	Bonds	Commodities	Currencies
Skew	1.04	-0.81	-0.15	-0.20	-0.35

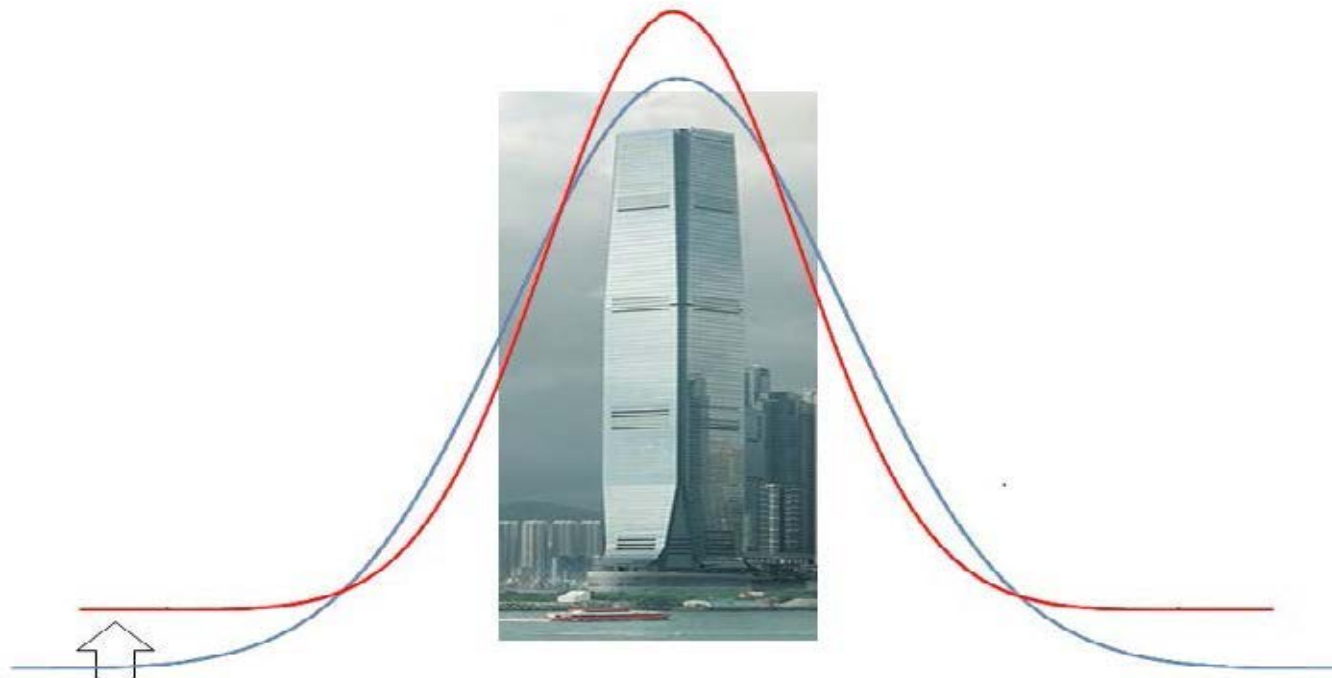
(Managed Futures: BTOP50; Stocks: S&P 500; Bonds: Barclays Aggregate Bond Index; Commodities: S&P GSCI; Currencies: Inverse return of the Dollar Index; Data since 1990. Source: Bloomberg)

Diversification with Systematic Trend Following

- “Crisis Alpha”



Volatility to Kurtosis – Impact of Government Intervention



- Volatility has been low, but does that mean the underlying risk is gone?
- Low *ex post* volatility can be indicative of a “high peak”—which implies increased risk of catastrophic “fat tail” observations.
- Systematic Trend Following can increase risk capacity via tail risk mitigation.

Due Diligence Considerations & Trends in Managed Futures

- Volatility Targeting
- Long Equity and Long Fixed Income Biases
- Insufficient Commodity Exposure

Aspen MFBI Strategy Development Notes

- Market selection process emphasized:
 - Liquidity: Only deep, liquid markets allowed
 - Diversification
 - Financials diversified by geography
 - Commodities diversified by sector
 - Operational effectiveness
 - Supports low-turnover weekly rebalance

Aspen MFBI Strategy Development Notes

- **Aspen MFBI markets:**

- Commodities:

- Copper
 - Corn
 - Crude Oil
 - Gold
 - Heating Oil
 - Silver
 - Soybeans
 - Sugar

- Equities:

- S&P 500
 - Nikkei (USD)
 - Euro Stoxx
 - FTSE

- Fixed Income:

- 10-Yr Treasury
 - Canadian Bond
 - German Bund
 - UK Gilt

- Currencies:

- AUD
 - CAD
 - CHF*
 - EUR
 - GBP*
 - JPY
 - NZD*

Aspen MFBI Strategy Development Notes

- Strategy design process emphases:
 - Robust
 - Utilize well-understood, time-tested, basic strategies
 - Parameter testing to demonstrate robustness, *not to curve-fit results to “best” parametric input*
 - Straightforward
 - As straightforward as possible: Transparent trend model, same model for all markets, no optimization, few parameters, etc.
 - Complexity only where needed: 5 trend lengths, equal risk-weighting, dynamic sub-model integration/convexity

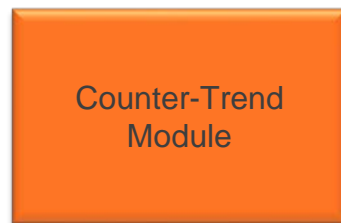
Aspen MFBI Strategy Development Notes

Modular design:

Quantitative Analysis



*Systematically
establishes long or
short positions on 20
futures markets*



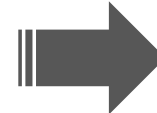
*Systematically
establishes long or
short positions in up to
4 of 7 futures markets*



Data Aggregation & Processing

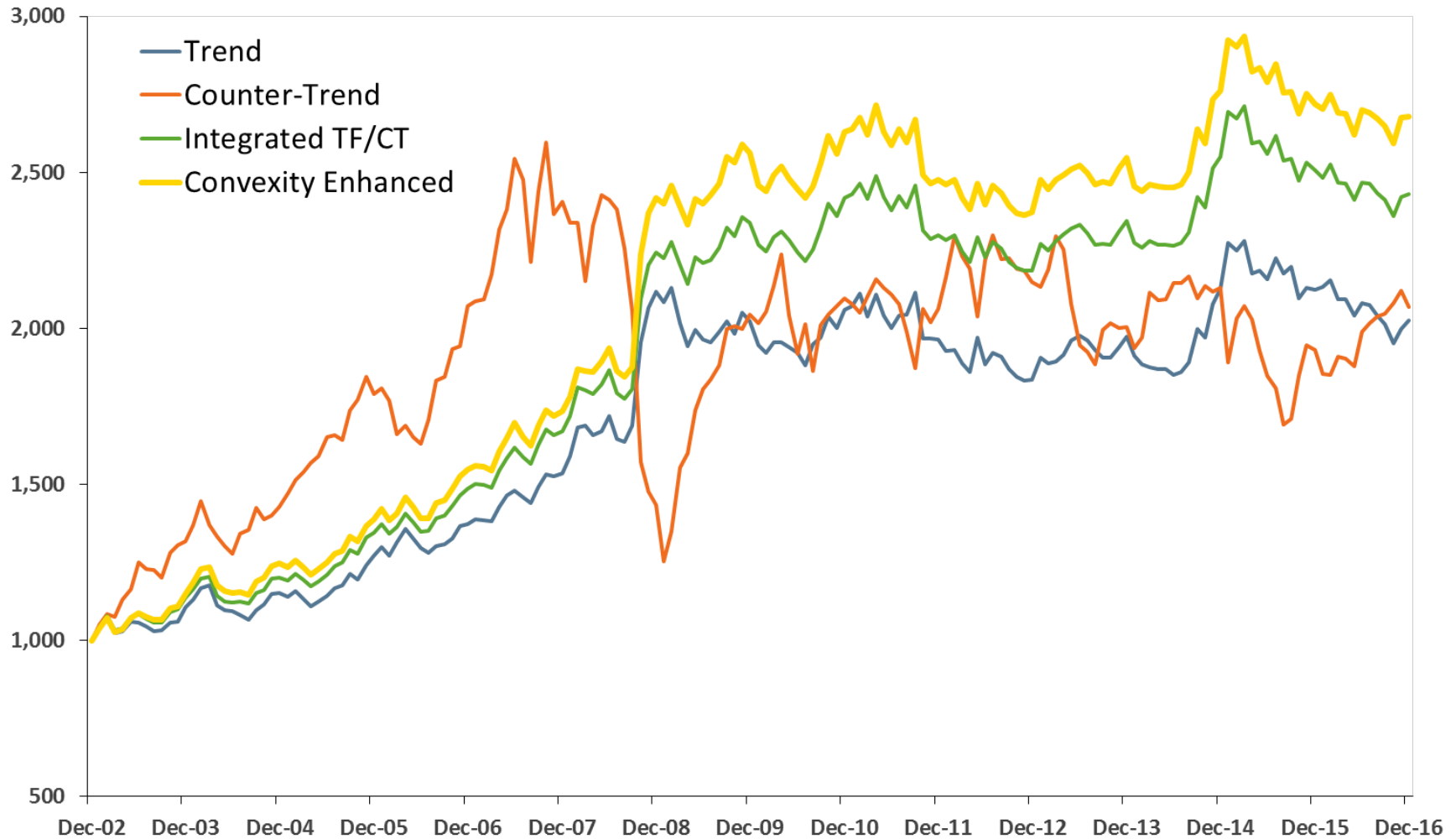


*Algorithm sizes &
combines positions of
Trend-Following &
Counter Trend Modules*



*Algorithm scales
notional positions
according to likelihood
of more or less
favorable conditions for
CTAs*

Aspen MFBI Methodology



Aspen MFBI Methodology

Performance Data

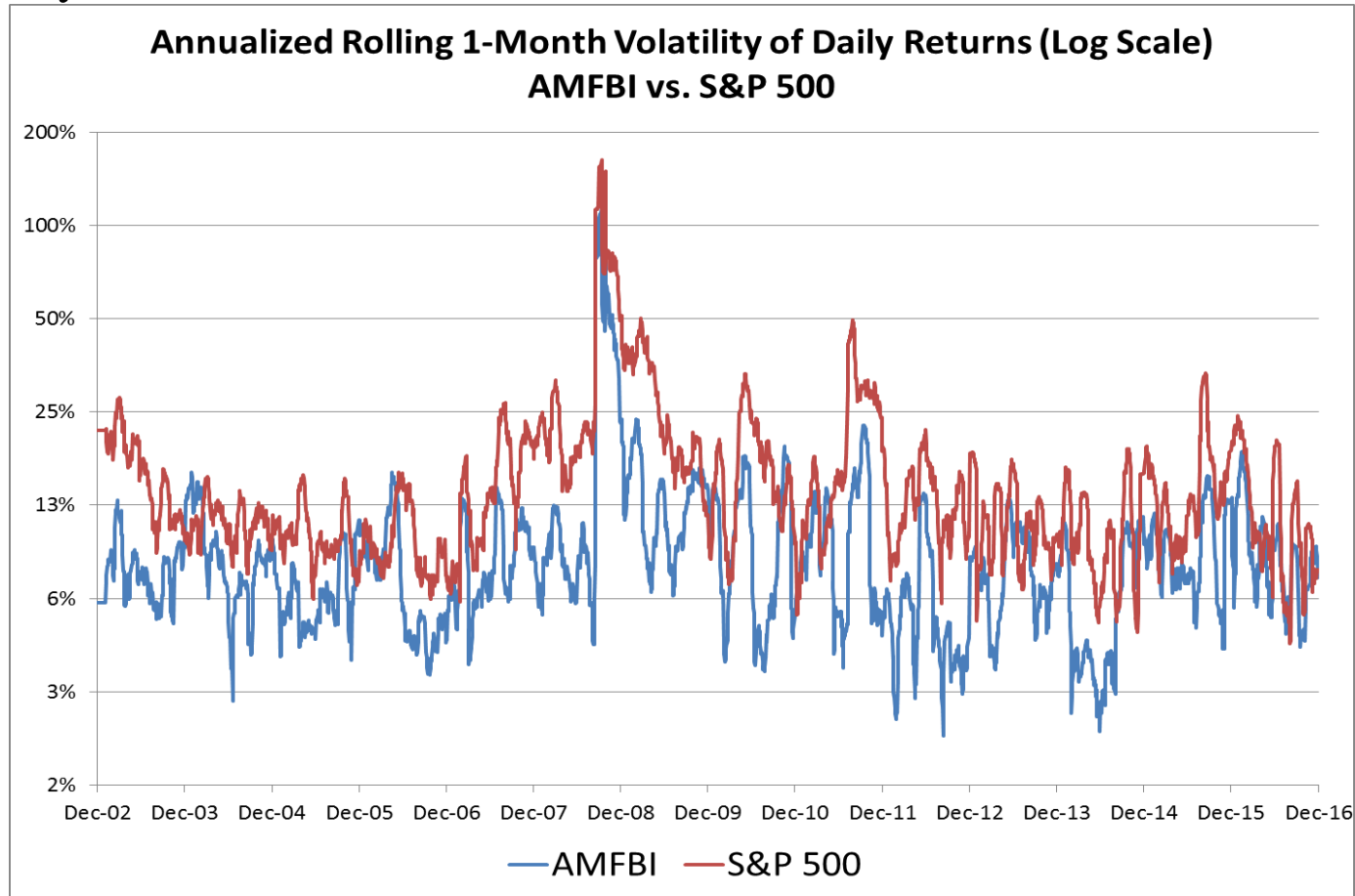
January 2003 – December 2016

	Trend Following Module	Counter Trend Module	Integrated of TF & CT Modules	Convexity Enhanced	BTOP50 Index
Compound Annual Growth Rate	5.2%	5.3%	6.5%	7.3%	3.3%
Standard Deviation	9.5%	16.8%	8.7%	9.4%	7.1%
CAGR / Standard Deviation	0.54	0.32	0.75	0.78	0.46
Sharpe Ratio (1.2%)	0.42	0.25	0.61	0.65	0.29
BTOP50 Index Correlation	0.77	0.05	0.77	0.74	1.00
Max Drawdown	-14.5%	-51.7%	-13.0%	-13.0%	-10.9%
Max Runup	128.1%	159.4%	171.3%	193.7%	74.7%

Sources: BarclayHedge

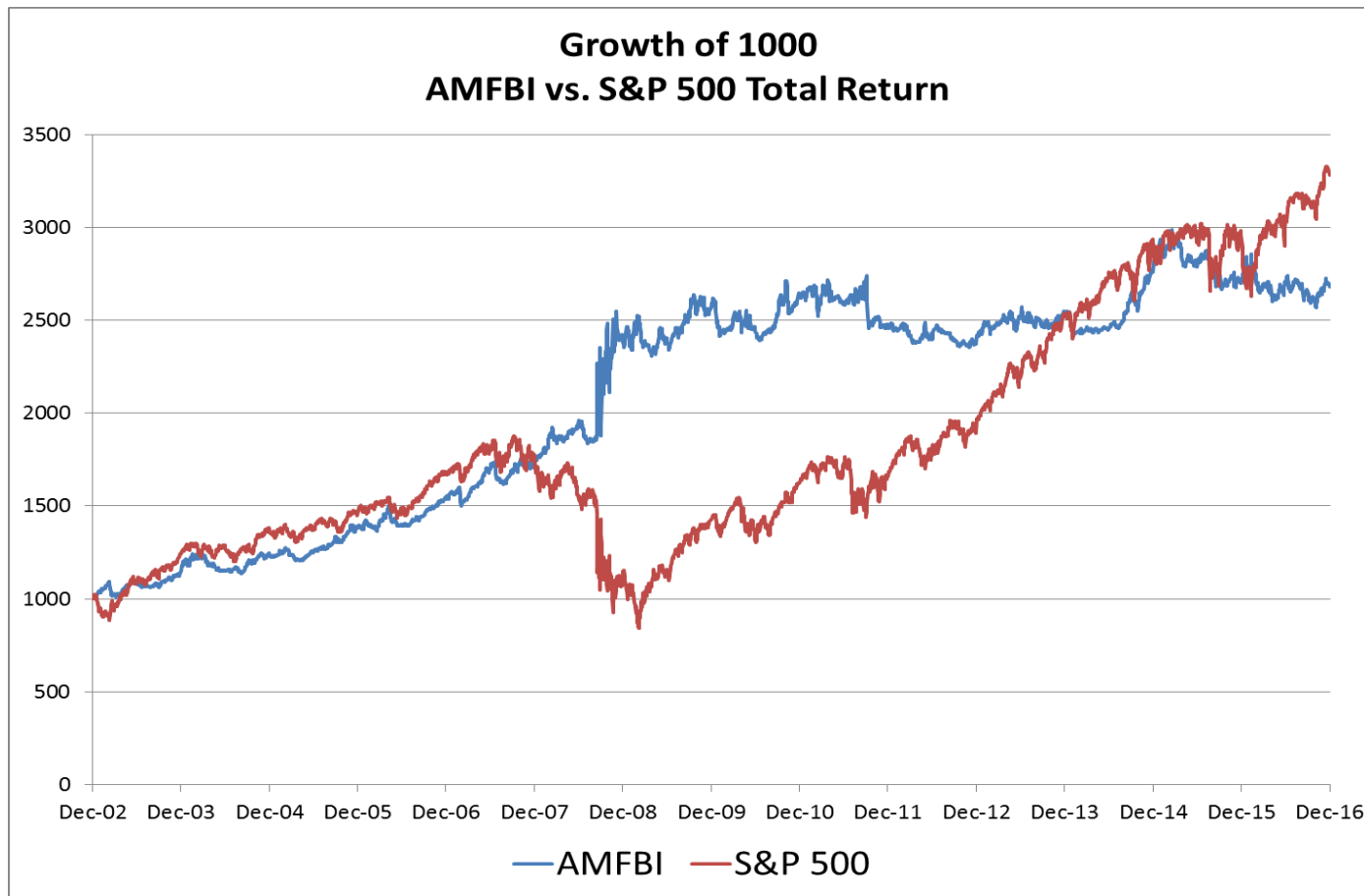
Case Study: Aspen MFBI vs. S&P 500

- Aspen MFBI volatility tends to spike at the same time as broad market volatility:



Case Study: Aspen MFBI vs. S&P 500

- Volatility spikes tend to occur when Aspen MFBI is most highly anti-correlated to risk markets:



Aspen MFBI Can Offer Superior Protection During Rising Rate Periods

- Notable rising rate periods:

		Barclays Agg	BTOP50	M-star Mgd. Futures	Aspen MFBI
Taper Tantrum:	May, 2013	-1.78%	-1.40%	-1.72%	+0.71%
	June, 2013	-1.55%	-1.53%	-1.69%	+0.55%
	May + June, 2013	-3.30%	-2.90%	-3.38%	+1.26%
Election Rate Jump:	November, 2016	-2.37%	-0.84%	-1.04%	+3.09%

- And more broadly:

Since Aspen MFBI Inception, Barclays Agg Down Months

	Barclays Agg	BTOP50	Aspen MFBI
Average Return	-0.69%	-0.13%	0.69%
% Months < AMFBI	64.29%	58.93%	N/A
Compound Return	-32.41%	-8.44%	42.56%

Aspen MFBI Retains Historical Managed Futures Style Purity

- Low fees enable efficient beta capture:

	BTOP50	Aspen MFBI
Annualized Return	3.3%	7.3%
Standard Deviation	7.1%	9.4%
Sharpe Ratio (1.3%)	0.28	0.64
Correlation	0.74	

- Upside > Downside

	BTOP50	Aspen MFBI
Upside Deviation	4.7%	7.8%
Downside Deviation	3.6%	4.3%
Skew	0.21	1.83
Max Drawdown	-10.9%	-13.0%
Max Runup	74.7%	193.7%

Aspen MFBI Retains Historical Managed Futures Style Purity

- Low Correlation + Positive Convexity:

	BTOP50	Aspen MFBI
Stock Correlation	0.01	-0.16
Stock Up-Correlation	0.10	-0.03
Stock Down-Correlation	-0.26	-0.54
Stock Beta	0.00	-0.11
Stock Up-Beta	0.08	-0.03
Stock Down-Beta	-0.19	-0.62

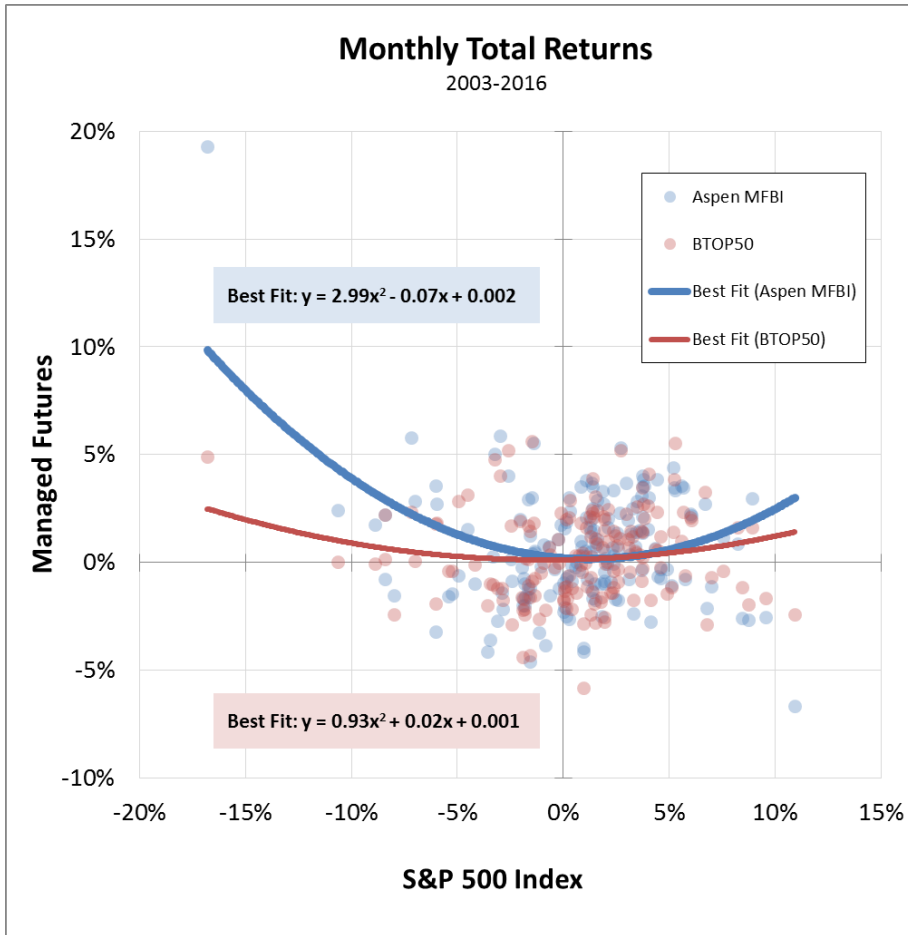
	BTOP50	Aspen MFBI
Bond Correlation	0.19	-0.01
Bond Up-Correlation	0.18	0.20
Bond Down-Correlation	0.03	-0.25
Bond Beta	0.39	-0.04
Bond Up-Beta	0.54	0.70
Bond Down-Beta	0.09	-1.22

	BTOP50	Aspen MFBI
Commodity Correlation	0.03	-0.10
Commodity Up-Correlation	0.31	0.22
Commodity Down-Correlation	-0.15	-0.43
Commodity Beta	-0.02	-0.06
Commodity Up-Beta	0.17	0.14
Commodity Down-Beta	-0.06	-0.28

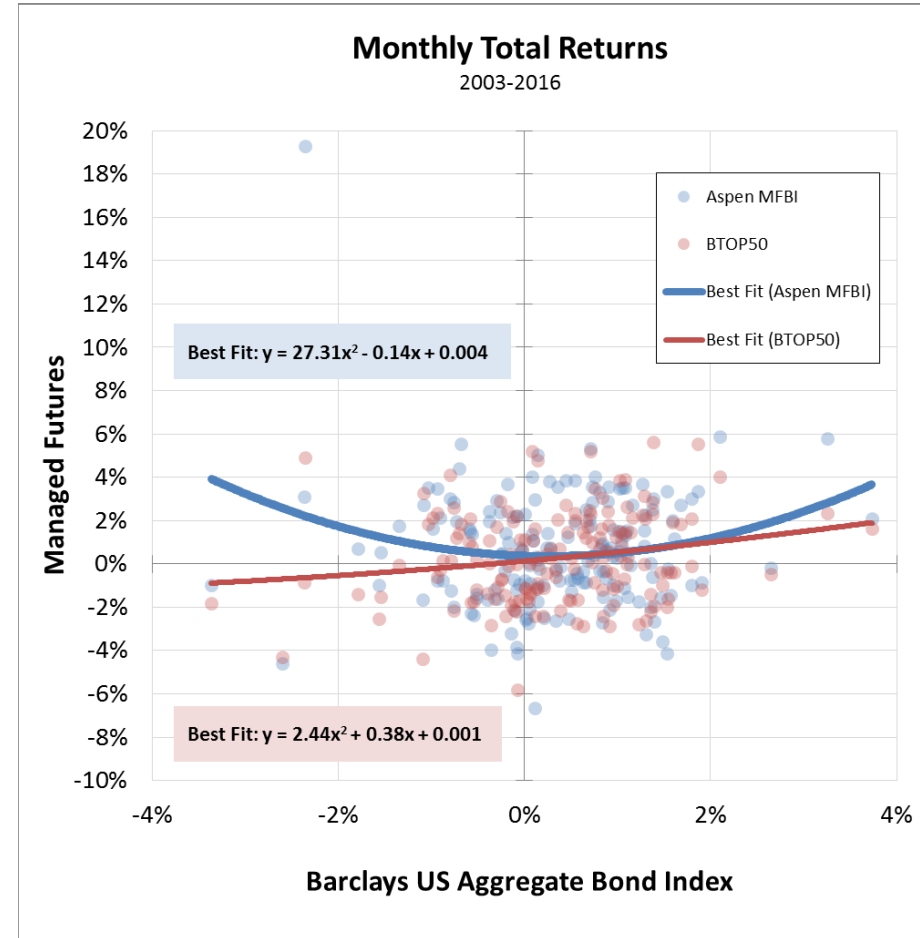
	BTOP50	Aspen MFBI
Currency Correlation	0.08	-0.07
Currency Up-Correlation	0.19	0.15
Currency Down-Correlation	-0.03	-0.31
Currency Beta	0.06	-0.08
Currency Up-Beta	0.28	0.25
Currency Down-Beta	-0.04	-0.58

Aspen MFBI Retains Historical Managed Futures Style Purity

Convexity: Equities

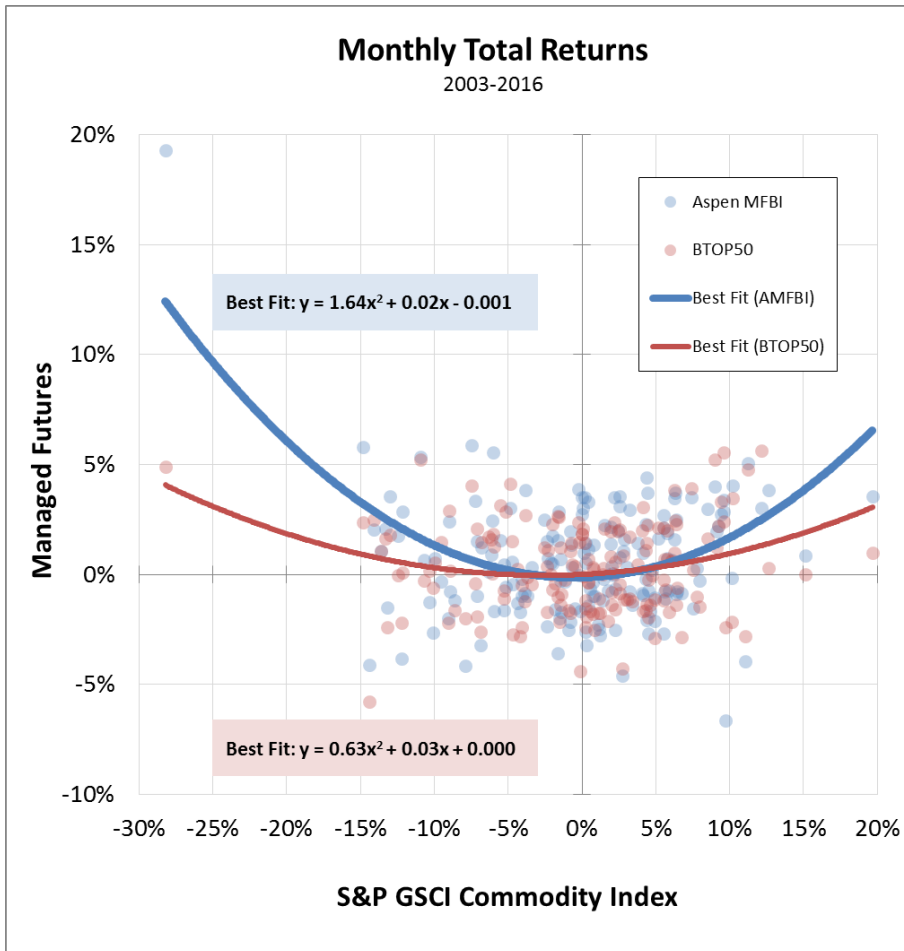


Convexity: Bonds

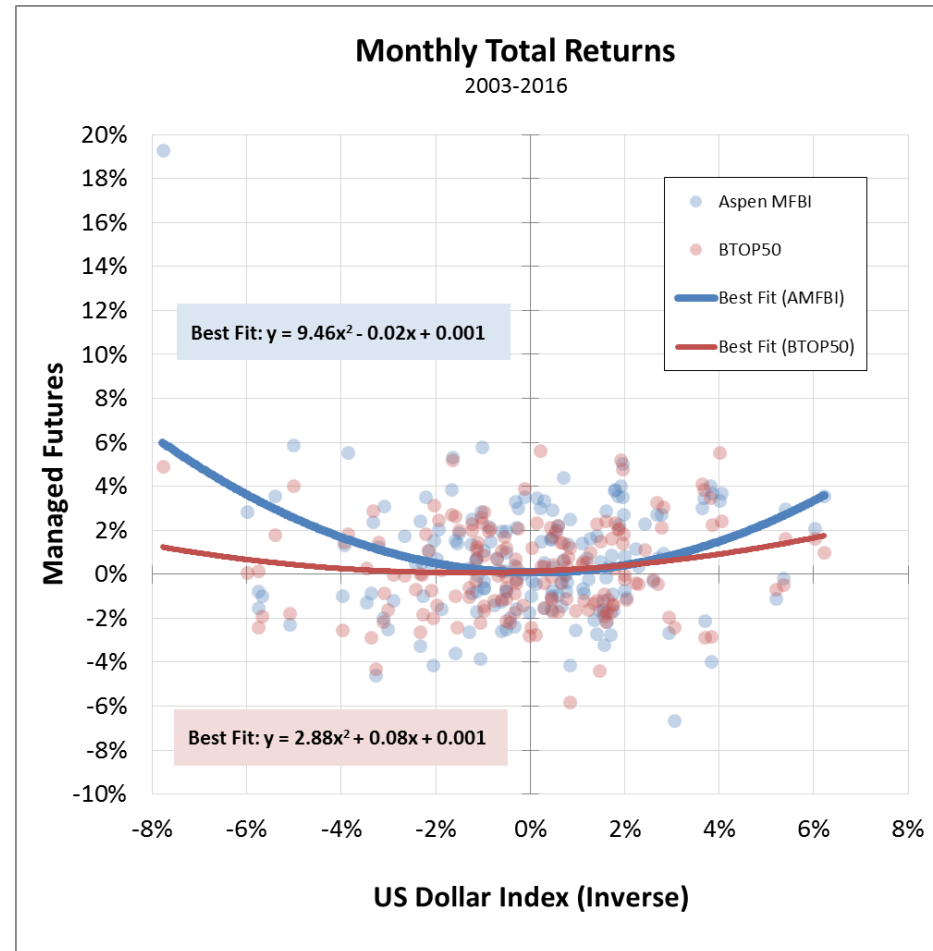


Aspen MFBI Retains Historical Managed Futures Style Purity

Convexity: Commodities

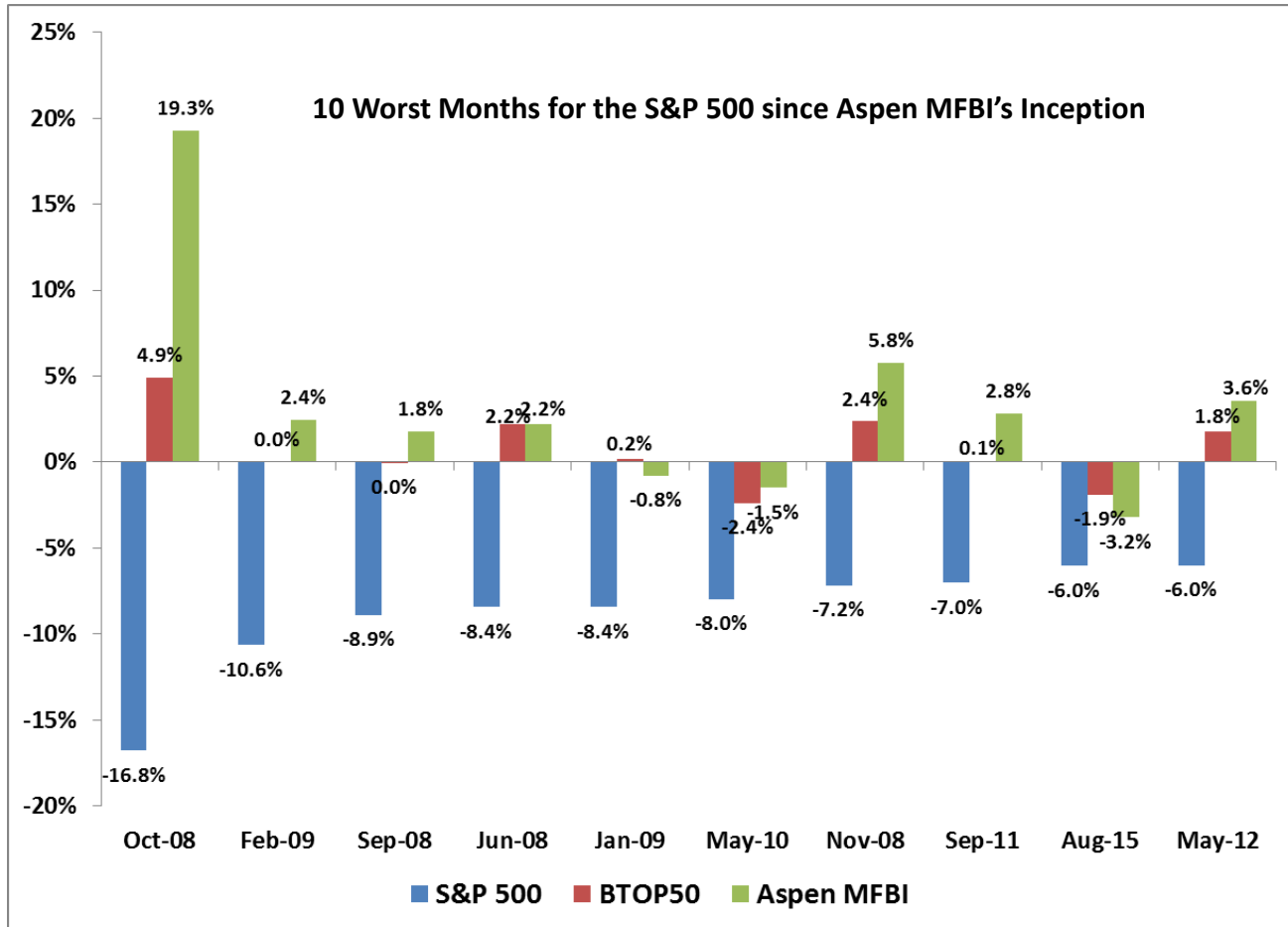


Convexity: Currencies (USD)



Aspen MFBI Retains Historical Managed Futures Style Purity

- “Crisis Alpha”



Aspen MFBI: Typical Managed Futures Win/Loss Pattern

- Within the Trend-Following Module:
 - Winning Trades: 30%
 - Losing Trades: 70%

 - Average Winner Attribution: +0.39%
 - Average Loser Attribution: -0.11%

 - Average Winner Duration: 18 Weeks
 - Average Loser Duration: 4 Weeks

Operational Due Diligence Considerations

- Onshore vs. Offshore
- Advisor vs. Sub-Advisor
- Fees and Disclosure



Managed Futures Due Diligence Considerations

- Investment Considerations:
 - Conservative cash management
 - Don't add credit risk to “crisis alpha”
 - No counterparty risk
 - Only exchange-traded futures
 - Sensible, measured use of leverage
 - Stems from having no volatility targeting

The Aspen MFBI Team

Bryan Fisher, *Managing Director*

Mr. Bryan R. Fisher, joined Aspen Partners in 2000, became a Director in 2007 and was promoted to Managing Director in September 2012. Mr. Fisher is responsible for overseeing and managing all aspects of Aspen's day to day business as well as setting the future direction of the firm. Mr. Fisher has been registered with the NFA as an associated person of Aspen Partners since December 2001, listed as a principal since September 2007, and was registered as a Branch Office Manager from December 2001 until June 2014. Mr. Fisher holds a Bachelor of Arts degree from Virginia Polytechnic Institute and State University.

Wm. Ware Bush, *Director*

Mr. William Ware Bush joined Aspen Partners, Ltd. in 1998 and has almost 30 years of experience in the financial services industry. Mr. Bush became a Director in 2007 and with his partner, Bryan Fisher, shares in all aspects of Aspen Partners' direction, strategy and investment. Mr. Bush has been registered with the NFA as an associated person of Aspen Partners since January 2000 and listed as a principal of Aspen Partners since September 2007. Mr. Bush received an undergraduate degree in History and International Political Science from Vanderbilt University and an M.B.A. in International Business from Georgia State University in Atlanta.

Ben Warwick, *Director*

Mr. Warwick has been in the investment management industry for 20 years, has held positions in trading, research for a number of alternative investment firms and is the author of several books on the futures markets. Mr. Warwick earned an M.B.A. from the University of North Carolina, a B.S. in Chemical Engineering from the University of Florida, and additional undergraduate degrees in Physics and Chemistry.

Brian Broadway, *Chief Operating Officer*

Mr. Broadway joined Aspen in 2014 as Chief Operating Officer and has over 20 years of experience in the financial services industry. Mr. Broadway's duties include overseeing Aspen's daily operations, compliance efforts and finance operations. Mr. Broadway has been listed with the NFA as a principal of Aspen Partners since August 2014 and registered as an associated person of Aspen Partners since September 2014. Mr. Broadway received his Bachelor of Science degree, with an emphasis in Accounting, from the University of Virginia and an M.B.A., with an emphasis in Finance, from the University of North Carolina – Chapel Hill.

Pat Kelly, *Director of Trading*

Mr. Kelly joined Aspen Partners in 2016 where his responsibilities include oversight of the firm's trading activities as well as development of financial technology to enhance Aspen Partners' investment and operational activities. Mr. Kelly was employed for ten years by Tremont Capital Management, a global alternative investment management firm, where he held several senior positions including supervision of the firm's Risk Management, Research and Product Development efforts. Mr. Kelly received a B.S. and an MBA from Hofstra University. Mr. Kelly is a Chartered Financial Analyst (CFA) and holds a Certificate in Investment Performance Measurement (CIPM).

Nathan Dutzmann, *Senior Financial Engineer*

Mr. Dutzmann has extensive experience in financial services, having previously worked as a consultant for a global macro hedge fund known for its work in managed futures, as a researcher in the analytics unit of a financial derivatives consultancy, and as a project manager for a private banking/wealth management firm. Mr. Dutzmann's responsibilities include daily oversight and ongoing research on Aspen's systematic investment models. Mr. Dutzmann received a Bachelor's degree in Mathematical and Computer Sciences and a Master's degree in International Political Economy of Resources from the Colorado School of Mines, and an MBA from the Harvard Business School.

Endnotes

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.

These benchmarks 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, fees, and other expenses. An investor cannot invest directly in an index.

Endnotes

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.

“BTOP50 Index” represents the Barclay BTOP50 Index, an index of the largest investable CTA programs, as measured by assets under management.

“Bonds” represents the Barclays Aggregate Bond Index, a market capitalization-weighted index, meaning the securities in the index are weighted according to the market size of each bond type.

“Commodities” represents S&P GSCI (formerly the Goldman Sachs Commodity Index), a composite index of commodity sector returns which represents a broadly diversified, unleveraged, long-only position in commodity futures.

“Currencies” represents an inverse monthly US Dollar Index excess returns. US Dollar Index is a measure of the value of the U.S. dollar relative to majority of its most significant trading partners.

The Morningstar Managed Futures Category

These funds typically take long and short positions in futures options, swaps, and foreign exchange contracts, both listed and over-the-counter, based on market trends or momentum. (A long position is a bet an investment will gain in value, while a short position is a bet that an investment will decline in value.) A majority of these funds follow trend-following, price-momentum strategies. Other strategies included in this category are systematic mean-reversion, discretionary global macro strategies, commodity index tracking, and other futures strategies. More than 60% of these funds' exposure is invested through derivative securities.

“S&P 500” and “Stocks” represents the S&P 500 Index, a widely recognized index of 500 large-cap US stocks.

The Barclays Aggregate Bond Index, Barclay BTOP50, S&P 500, US Dollar Index, Morningstar Managed Futures Category, and S&P GSCI 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.

Endnotes

Definitions

Annualized Return: The constant annualized rate of growth that produces the same end-to-end performance as a given investment's return stream.

Beta: A measure of an investment's sensitivity to market movements.

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

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

Maximum Runup: The greatest trough-peak increase during a specific period of an investment.

R-Squared: A measurement of the relationship between a portfolio and its benchmark.

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

Skewness, or Skew: An asymmetry distribution, in which the curve appears distorted or skewed either to the left or to the right. Skewness can be quantified to define the extent to which a distribution differs from a normal distribution.

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