

## ASPEN MANAGED FUTURES BETA INDEX QUARTERLY COMMENTARY

By historical standards for the Aspen Managed Futures Beta Index (“AMFBI” or the “Index”), the first half of 2017 was a difficult period. In fact, the return posted through June 30 of -6.95% is actually the worst end-of-quarter year-to-date return in AMFBI’s history. This commentary will analyze the sources of that performance, and the investigation process will also offer opportunities for context and perspective.

The first opportunity for such perspective comes with noting the implications of the fact that performance of this magnitude can conjure superlatives such as “worst ever.” If the year had ended on 6/30, this -6.95% performance would indeed be the worst year in AMFBI’s history; however, this actually illustrates one of the benefits of a trend following allocation: I.e., difficult periods for a trend following model do not tend to produce the sizable losses that investors can experience with other types of risk assets, like the 30%-50% losses experienced by most equity indices for the year 2008. Moreover, the positive skewness—i.e., the tendency for outliers to fall to the upside—for trend following is evidenced by the fact that a mirror-image 6.95% *gain* would actually be smaller than 8 out of the 10 up years in AMFBI’s history, including the post-crisis years of 2013 (+7.37%) and 2014 (+8.45%).

Nonetheless, there have been some notable occurrences in 2017 that have caused Index performance to lag. We analyzed some of these occurrences in depth in the first quarter commentary, and we investigate further in this commentary.

### Performance Overview

The Aspen Managed Futures Beta Index returned -2.8% in the second quarter. That figure may not qualify as a remarkably bad quarter on its own, but coming on the heels of an unusually poor first quarter (as discussed in the prior commentary), it was sufficient to produce the aforementioned year-to-date returns.

Quarterly performance was on par with that of peer benchmarks, though the path taken to end-to-end quarterly performance was notably different, as we discuss below. The BarclayHedge BTOP50 Index managed futures benchmark returned -3.0% in Q2. Consequently the year-to-date performance differential between AMFBI and BTOP50 was largely unchanged from Q1. (BTOP50 YTD performance stood at -4.8% through 6/30.)

Perhaps the most notable storyline in the financial markets in the first half of 2017 has been exceptionally low volatility. Since the end of the Great Financial Crisis (GFC), managed futures managers have bemoaned the abnormally low volatility regime (largely induced by central bank accommodation), given that trend following tends to perform better when volatility is elevated. But in 2017, the lack of volatility has been so evident that market commentators from all fields have documented it, questioned it, and pondered its implications. The VIX implied volatility index has even spent time in the single digits this year, prompting a rash of doomsday theorist extrapolations (from scant historical evidence, given that sub-10% VIX readings have been exceedingly rare historically—which of course is the point anyway). But VIX is mostly just a reflection of the current backdrop, and as such the low readings have been justified, given that annualized daily standard deviation for the S&P 500 was only 7% for the entire first half, and rolling 21-day (approximately one-month) annualized volatility has stood below 6% more than 25% of the time in 2017—incredibly low for an index whose long-run annualized daily vol has been around 18%. U.S. large-cap equities are no outlier either; market volatility has been low across geographies and across asset classes.

Over the long run, managed futures trend following strategies tend to produce better performance when volatility is elevated. This is the reason that trend following is often called a “long vol” strategy: It is not technically long volatility—i.e., its performance isn’t necessarily correlated to *changes* in volatility *per se*. Rather, it is colloquially “long vol” in the sense that its performance tends to be better when (market price) volatility is elevated.<sup>1</sup>

Yet the periods of “poor” performance for trend following when volatility levels are low do not typically produce sizable losses. Rather, over extended periods of low market volatility, trend following program performance tends to be closer to flat, via modest gains and modest losses compounding to just slightly up or slightly down performance over longer stretches. The approximately flat performance of many trend programs (including AMFBI) over the full post-GFC era serves as the ultimate example.

When backdrop volatility is abnormally low, occasional “events” that punctuate the markets with brief spikes of more elevated volatility can have an outsized effect on trend following performance. But while sustained high volatility is often beneficial for profitable trend formation, brief market dislocations are more like a coin flip for traditional intermediate-to-long-term trend programs. Q2 2017 exemplifies this reality. The majority of the time, daily model returns were unusually small in magnitude (particularly since AMFBI does not employ extra leverage to attain a volatility target). But the low-vol backdrop was disrupted by occasional economic or political events that drove most of the Index’s performance. However, this year the vast majority of those events have caused bursts of negative performance for AMFBI, rather than the usual “coin flip” pattern where some exogenous events are beneficial and others detrimental. Whether such a bad run of event-driven performance constitutes a broadly problematic environment for a trend model or whether it merely constitutes unusually bad luck is an interesting and perhaps ultimately unanswerable question. It’s a question we investigate with respect to a different but related streak in a later section of this commentary.

The previous commentary detailed a couple of the big events that drove much of Q1 AMFBI performance, such as the Fed-related V-bottom in currencies. Below we break down Q2 performance into the three constituent months, each of which contained a brief but significant market-moving event. The three episodes so detailed collectively account for virtually all of the Index’s negative quarterly performance. The remainder of the quarter was generally spent in a low-vol, minimal return regime.

#### **April: Event #1 (French Election Relief Rally)**

AMFBI returned -2.59% in April. In early April, the Trend model’s net long equity positioning weakened and fixed income positioning became meaningfully net long for the first time since the November interest rate spike. This was due in part to concern in the markets about the possibility that the first round of French elections would produce a runoff between extreme right candidate Marine Le Pen and extreme left candidate Jean-Luc Mélenchon. The April 23<sup>rd</sup> first-round election instead resulted in a runoff between Le Pen and centrist candidate Emmanuel Macron, virtually ensuring a centrist victory in the second round. (Macron did indeed win the election on May 7.)

Market reaction to the first-round French election results was a strong relief rally, which caused net losses for the Trend model’s mildly risk-off positioning. Despite the typically “risk-on” nature of the Counter-Trend model, the election results were more significantly problematic for Counter-Trend, because the European origin of the relief rally extended into strong gains for the euro and the Swiss franc, which are currently the

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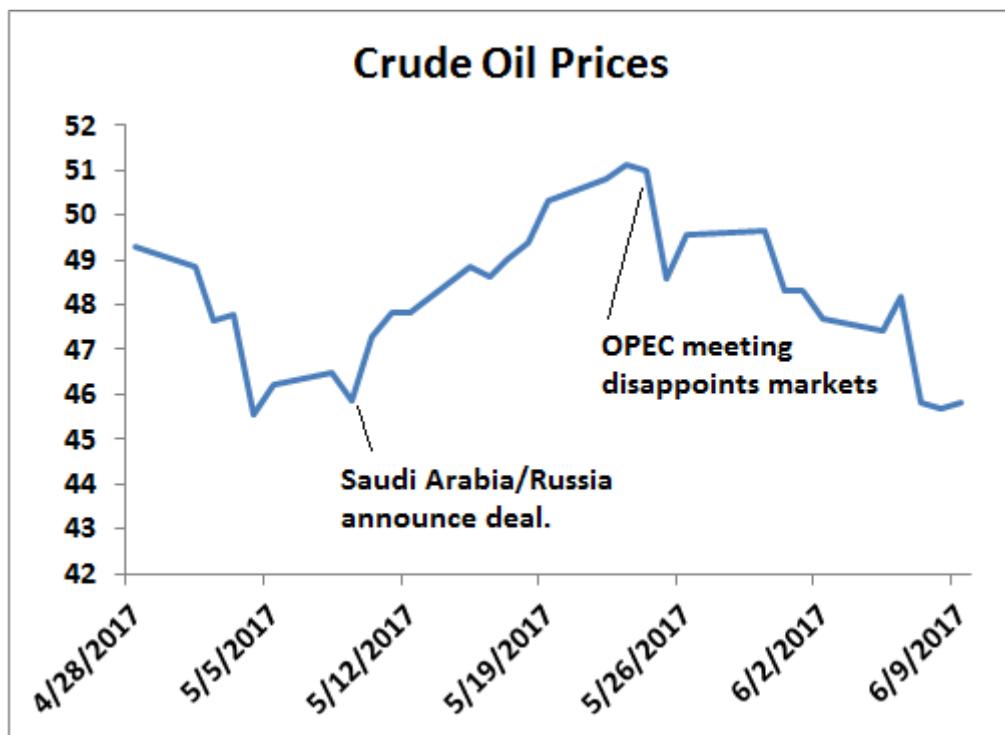
<sup>1</sup> For an excellent discussion, see Marc Malek and Sergei Dobrovolsky, “Volatility Exposure of CTA Programs and Other Hedge Fund Strategies,” *The Journal of Alternative Investments* [Spring 2009], also available at <http://www.followingthetrend.com/?mdocs-file=2565&mdocs-url=2564>

funding currencies in the Counter-Trend currency carry model. Counter-Trend losses in the three days following the April 23<sup>rd</sup> election accounted for more than 100% of the Counter-Trend losses for the quarter.

### May: Event #2 (OPEC-Driven Energy Choppiness)

AMFBI returned -1.33% in May. The month began in the black, with Trend model gains in every asset class in the opening week of May. Among the winners were recently established short positions in the energy complex. Then in mid-May, Saudi Arabia and Russia announced a deal in principle to extend an oil output freeze for an extra nine months. Energy prices soared on the news, more than reversing gains in short energy Trend positions.

The price jump was sufficient to shift AMFBI back into long positions in energy futures. In late May the official OPEC meeting occurred. Though OPEC members ratified the pre-announced deal, no further supportive measures were forthcoming. Disappointment in the markets caused energy prices to plunge once again.



The first quarter commentary discussed a “V-bottom” movement that produced trend losses in both directions in currencies. Because futures-based trend following is directionally agnostic, a “V-top” like the pattern that occurred in energies in May can be equally problematic. Losses in energy futures from this OPEC-driven whipsaw were responsible for the majority of May’s negative performance.

### June: Event #3 (European “Taper Tantrum”) Plus One “Sweet” Spot for Trend

June was a profitable month for AMFBI, with Index returns coming in at 1.13%. Positive return drivers are discussed below.

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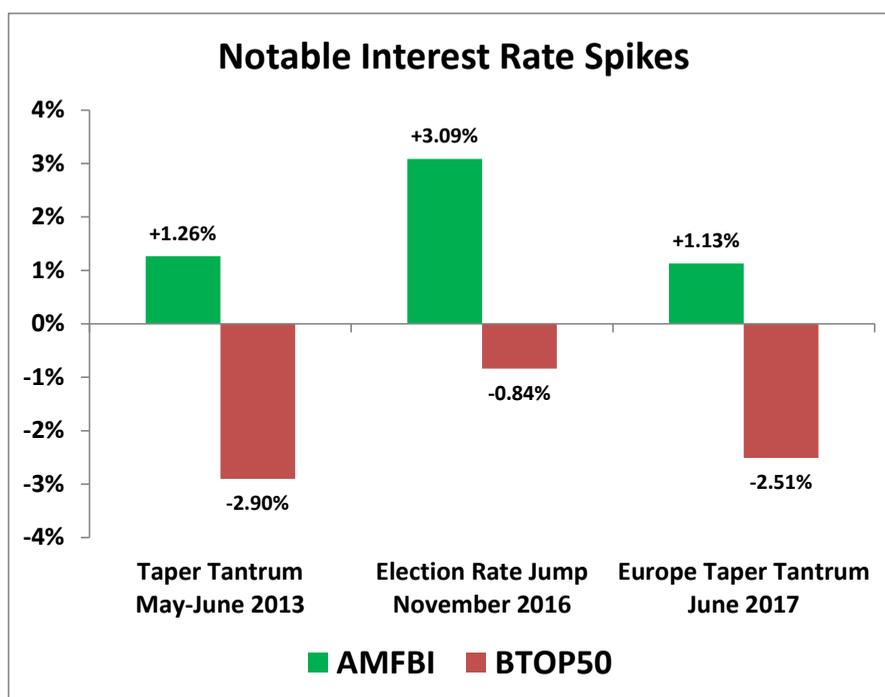
With less than a week left, the month was on pace to be more profitable when European Central Bank president Mario Draghi gave a speech that markets interpreted as unexpectedly hawkish. The resulting activity could be described as a European version of the “taper tantrum” that hit the markets after similar comments by US Federal Reserve president Ben Bernanke were interpreted similarly: Both equity and fixed income markets declined rapidly as markets contemplated the consequences of potentially faster-than-expected reductions in ECB accommodation. The non-U.S. origins of the tantrum also caused currency prices to spike relative to the US dollar, and (USD-denominated) commodity prices spiked as well.

AMFBI’s non-biased trend algorithm had enabled neutral fixed income positioning prior to the European taper tantrum, which evolved rapidly into net short positioning, enabling the Index to enjoy profits from fixed income markets in particular as events unfolded. Currency trends also profited from the drop in the dollar, though a larger move in EUR than in other currencies resulted in small losses in the Counter-Trend model. Long equity trends were unchanged, producing offsetting losses, but because AMFBI does not overemphasize equity positioning, those losses were not large. However, the Index had negative performance overall as the tantrum evolved, due to whipsaws in short commodity positions. Nonetheless, the losses for AMFBI in the European taper tantrum (-1.2% the last four days of June) paled in comparison to the carnage experienced by the managed futures category in general (e.g., BTOP50 returned -3.8% those same four days). Prior to the last week of June, AMFBI had been running behind the category averages for the quarter, but it made up all of the differential in the last few days of the quarter.

Long equity and long fixed income tilts in the CTA universe are well-documented, and of course we have commented repeatedly on how the absence of those tilts in the AMFBI model tends to affect relative performance in different backdrops. This year has offered demonstrations of those effects in both directions. In a low-vol, generally trendless backdrop, global equities and global bonds have both done reasonably well for most of the year. As a consequence, AMFBI has lagged the many managed futures funds that have large holdings in long equity and long fixed income positions. Of course we would argue that such tilts increase a trend model’s expected return at the cost of decreasing the model’s diversification characteristics, given that investors presumably already hold equity and bond positions in their traditional portfolios. The divergence in June performance as a consequence of the European taper tantrum fits the pattern of past rate spikes such as the original taper tantrum in 2013 or the post-U.S. election backdrop last November.

While those examples, shown in the chart below, obviously focus primarily on declines in bond prices, note that the performance of the CTA universe, as indicated by the BTOP50 benchmark, was significantly worse in the backdrops (U.S. and Europe taper tantrums) that also included declining equity prices. CTA algorithms that rely on generally prevalent anti-correlation between fixed income and equities can be caught particularly flat-footed when that anti-correlation suddenly disappears and bonds and stocks drop simultaneously.

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Given the ECB origins of the June event, Europe was the epicenter of the rate spike. Nonetheless, interest rates did rise globally in sympathy, including in the U.S., such that June contributed to a long-run phenomenon that is memorialized in AMFBI presentation materials via the following table:

Barclays Agg Down Months, Since AMFBI Inception			
	Barclays Agg	BTOP50	AMFBI
<b>Average Return</b>	-0.67%	-0.19%	0.63%
<b>% Months &lt; AMFBI</b>	63.79%	58.62%	N/A
<b>Compound Return</b>	-32.51%	-11.55%	39.57%

That table looks across all down months for U.S. bonds, as represented by the Bloomberg Barclays U.S. Aggregate Bond Index (“Barclays Agg”) since the 2003 inception of AMFBI. A small positive average monthly return for AMFBI and a small average negative return for BTOP50 in those months signify that AMFBI has outperformed the category by about 80 basis points on average in months where bond performance is negative. This compounds out into a more than 50 percentage point (5000+ basis point) long-run performance dispersion across all such months.

(A natural follow-up question is how performance compares across *up* months for bonds. Given the long fixed income tilts employed by many of the large CTAs captured in the BTOP50 Index, one would reasonably expect superior performance when bonds go up; yet the long-run answer is that since its 2003 inception AMFBI has moderately outperformed BTOP50 across those months as well. On the other hand, in the post-Great Financial Crisis era—i.e., April 2009 through June 2017—as long bond tilts have become particularly pronounced among trend following programs, BTOP50’s performance has somewhat exceeded that of AMFBI across up months for bonds. But we would argue that that tradeoff doesn’t remotely compensate investors for the concomitant sacrifice of fixed income diversification. Curious readers are encouraged to contact Aspen for a detailed analysis, but a brief hint as to why we draw this conclusion so confidently is the

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fact that even without long bond tilts, AMFBI has actually outperformed BTOP50 overall since the end of the Financial Crisis, despite the strong bull market in bonds over that period, despite the fact that up months for bonds have outnumbered down months by more than 2-to-1, and despite CTAs' employment of other plausibly performance-enhancing but potentially diversification-corroding techniques such as volatility targeting and long equity tilts.)

Narrowing our focus back to June, note that while AMFBI strongly outperformed competing models during the week of the European taper tantrum, it still posted mildly negative returns that week due to whipsaws in the commodity complex. So while the lack of tilts into long equity and fixed income positioning explains why AMFBI did not join the category averages in posting a significantly negative return for June, we must look elsewhere for the source of positive June Index performance overall.

One source of the gain in June was positive attribution from the Counter-Trend sub-model, though the positive June Counter-Trend performance was merely a partial clawback of negative Counter-Trend attribution from earlier in the quarter (particularly the French election reaction discussed above).

Within the Trend model, gains in June were attributable to a sustained short trend in sugar futures. The AMFBI Trend model has been on the short side in sugar since early March. While June was the best month for the sugar position, it was a profitable quarter in sugar overall, with full-quarter model attribution of +0.83%, which is more than six times that of the next-best Trend market in Q2. The short sugar trend benefited from persistent over-production by global sugar suppliers. The price decline was also intensified by a peculiar cause: Brazil's state-run oil company Petrobras announced a reduction in the price of gasoline in Brazil, the world's largest sugar-producing country, which in turn reduced the perceived attractiveness for the alternative use of sugar supplies in ethanol production.

In "normal" economic/financial backdrops, it is often the case that the majority of markets are not trending profitably. However, such "normal" market activity typically resembles a random walk, which doesn't tend to produce meaningful losses for a trend following program either. As a result, even one or two markets that are profitably trending can often be sufficient to overcome the majority of markets that are not, producing mildly positive performance for a trend program even in the absence of a driving event like a financial crisis. Those "one or two trending markets" have been notably absent for much of the post-GFC era, as range-bound low volatility has often prevailed across the market complex, at times exacerbated by the high correlations of the "risk-on/risk-off" phenomenon. While we would not be so naïve as to assert that the sugar trend heralds the return of a "normal" backdrop for trend following, it is encouraging to see the sugar market trend profitably due to the market's own supply/demand dynamics, rather than acting primarily in tandem with the prevailing low-vol, range-bound dynamics of the market complex as a whole.

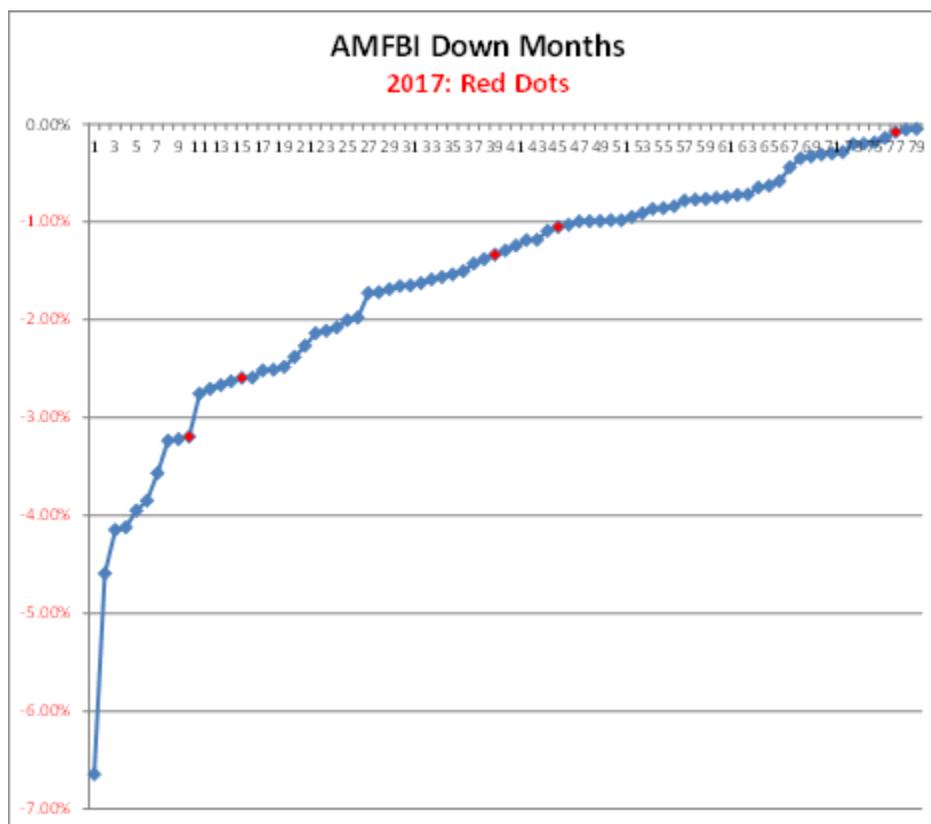
## **A String of Tails? Contemplating a Streak of Down Months**

Before it was snapped by June's positive AMFBI return, 2017 opened with the first-ever streak of five straight down months for the Index. On the other hand, there has been one streak each of 5, 6, and 7 consecutive positive months in AMFBI history. Moreover, though it resulted in a new low for year-to-date returns (as noted above), the five-month stretch does not constitute the Index's worst-ever drawdown within a calendar year. That distinction belongs to the May-November 2011 period. In fact, the two-month period of October-November 2011 was nearly as bad as the entire five-month stretch of January-May 2017. In other words, the low in YTD performance mentioned at the beginning of this commentary is largely just a quirk of the fact

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that the five-month streak happened to begin in January. All of this raises the question of exactly how much of an outlier the streak really is.

Toward that determination, the first thing worth noting is that the monthlies themselves are not markedly good or bad relative to other down AMFBI months:



The streak includes the 10<sup>th</sup> worst AMFBI month (out of 79 total down months), but it also includes the third least bad. (February was a mere 8 basis points shy of avoiding the streak altogether.) The streak’s average (-1.65%) was slightly but not meaningfully worse than the average AMFBI down month overall (-1.60%). In other words, the monthly returns that collectively constituted the five-month streak were not remarkably poor in and of themselves.

But is there a discernable pattern that explains the whole stretch of difficulty? Or is it rational to question whether the five-month streak could simply be attributable to randomness, the trend following equivalent of five straight tails in a string of coin flips? Such questions illustrate countervailing risks of performance analysis: On one side is the risk of attributing meaning to random noise. On the other side is the risk of dismissing as randomness a signal from which a deeper meaning could be extracted. A researcher must always be cognizant of these traps. In some ways they are unavoidable, partly because it is often actually impossible to distinguish between signal and noise when analyzing only a few data points.

One question worth investigating, however, is what would be the odds of getting five straight down months at random? Overall, about 45% of AMFBI’s monthly returns have been losers, so the odds of any particular five-month stretch all being losers is about  $45\%^5 \approx 2\%$ , which is not a large figure, but not unfathomably unlikely either.

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Given that AMFBI now has a 14.5-year history, perhaps the model was simply “due” for a five-month correction? Of course, “dueness” is a mathematically dubious concept, but a related question would be: Given that 45% of months are down months for the Index, what are the odds of a five-month losing streak occurring over 174 total observations? As disarmingly simple as this question appears, it is actually incredibly complicated to solve analytically.<sup>2</sup> Fortunately in an era of high-powered computing, a numerical approach can solve the problem.<sup>3</sup> The odds of having a five-month losing streak are about 84%.<sup>4</sup>

The above result is at least sufficient to demonstrate that a five-month losing streak is not such a large outlier as to necessarily indicate a deeper issue. Indeed, the distinction between signal and noise is not always clear-cut anyway. Investment performance investigation nearly always implicitly employs stochastic assumptions for statistical analyses. Yet investigations of individual periods nearly always look for underlying drivers of performance, as the “Performance Overview” section of this commentary does in describing the economic “events” that determined much of the performance of AMFBI in the second quarter. The distinction is often blurry, and both the stochastic approach and the deterministic approach should be employed with humility and a recognition of the deep, interlaced complexities involved in market dynamics.

## Looking Ahead

As June rolled into July, an important outstanding question was whether the European version of the taper tantrum had run its course or whether the pattern of declining bond and stock values could continue. As of this writing, there is some evidence that the tantrum may not be entirely complete, and it is unclear how much worse the damage could get. At any rate, AMFBI is much closer to “tantrum neutral” than are most trend following funds, so whether the pattern continues or reverses, the model will likely be able to adjust quickly (and neither gains nor losses are likely to be substantial in the meantime).

Draghi’s comments could be viewed as a trial balloon for gauging the markets’ reaction to the possibility of the ECB tapering its easy money policies. Ben Bernanke’s comments that fomented the original taper tantrum could be viewed the same way, with the result that actual tapering was subsequently delayed by more than a year. Once it became clear that a cycle of tightening was imminent in the U.S. however, that unleashed a wave of currency and commodity price adjustments that produced to the best performance period for trend followers in the post-crisis era. European tapering likely would not produce quite the same style of market behavior, since U.S. tapering was divergent with other central bank policies, whereas ECB tapering would at least be convergent with U.S. policy; but in a broad sense a reduction in accommodationism would be a welcome event for reasons we have discussed many times: It would likely reduce some of the present brittleness in the financial system (which may be increasing crisis risk by dampening markets’ usual function of uncovering problems areas), and it would also likely help normalize market volatility, thus potentially

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<sup>2</sup> See this discussion online for details: <http://www.askamathematician.com/2010/07/q-whats-the-chance-of-getting-a-run-of-k-successes-in-n-bernoulli-trials-why-use-approximations-when-the-exact-answer-is-known/>

<sup>3</sup> We used Wolfram Alpha to solve this problem. This link will perform the calculation: <https://www.wolframalpha.com/input/?i=sequence+of+trials;+45%25+chance+of+success,+5+consecutive+successes+in+174+trials>

<sup>4</sup> We’re implicitly assuming statistical independence. AMFBI monthlies have historically had a serial correlation of about 0.07 ( $R^2 \approx 5\%$ ), so the independence assumption is fairly reasonable, and positive serial correlation implies the actual odds of a five-month losing streak might be a bit higher. Of course, the streak itself also increased the long-run average monthly loss rate for the index, which skews the results the other way. Regardless, the precision of the number is unimportant. What is relevant is the general conclusion that a five-month streak is not a large outlier.

enabling managed futures trend following systems to generate profits even in the absence of a crisis—thus making it an ideal overall outcome for a diversified portfolio.

We recognize it has been a difficult backdrop for trend following and for the managed futures asset class. In the face of such difficulties, all systematic trend followers have been faced with questions about whether to adjust what they do or to stay the course. The decisions managers make will often depend on how they frame the value that they look to add in investor portfolios. For some CTAs, their goal is simply to generate returns in all backdrops, and trend following is just a means to that end. Many of those managers have understandably modified their approaches to trend following as the traditional trend premium has been largely absent in the post-GFC years. Philosophically, Aspen views the Aspen Managed Futures Beta Index as a liquid, low-cost, transparent access point for capturing the traditional trend premium. As such, we choose to stay the course. Our mandate is to provide access to a well-defined alternative return stream with historically demonstrated diversification and crisis mitigation benefits, and we will not stray from that mandate. As Aspen continues to provide access to a strategy designed to capture the traditional trend premium, we view the difficult backdrop as an extended pause in an alternative source of return that can experience such pauses, and we draw courage from the fact that an overall diversified investment portfolio—the risk-adjusted returns of which are the primary focus of AMFBI model design—continues to perform admirably in the very same backdrop.

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## **Important Disclosures**

*Past performance is no guarantee of future results.*

*All AMFBI 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**

*AMFBI 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.*

*“Barclays AGG” represents The Bloomberg Barclays U.S. Aggregate Bond Index is a market capitalization-weighted index, meaning the securities in the index are weighted according to the market size of each bond type.*

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

*“Euro Stoxx 50” represents a stock index of Eurozone stocks designed by STOXX, an index provider owned by Deutsche Börse Group and SIX Group. It is made up of fifty of the largest and most liquid stocks.*

*“Goldman Sachs Commodity Index,” also known as the S&P GSCI, is a long-only index of commodity returns.*

*“S&P 500” represents the S&P 500 Total Return Index, a widely recognized, unmanaged index of common stock prices.*

*“SG CTA Index (formerly, the Newedge CTA Index)” provides the market with daily performance benchmarks of major commodity trading advisors (CTAs).*

*The Barclays AGG, BTOP50 Index, Euro Stoxx 50, S&P GSCI, SG CTA Index, and S&P 500 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.*

## **Definitions**

*Broad Risk Indicator (BRI): A proprietary, broad market risk analysis system.*

*Compound Annual Growth Rate: The year-over-year growth rate of an investment over a specified period of time.*

*Forex: A commonly used abbreviation for "foreign exchange," it is typically used to describe trading in the foreign exchange market by investors and speculators.*

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

*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 annual rate of return’s dispersion from its mean, indicating an investment’s volatility.*

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