

# Futures-CTA Correlation and Replication Monitor

**The “Futures-CTA Correlation and Replication Monitor” employs three methods to estimate how CTAs are positioned across a wide range of futures contracts.**

## 1st Method: Futures-CTA Returns Correlations Monitor

We first look at the correlations between the returns of each futures contract and the returns of the Newedge Trend index over the past 30 trading days<sup>1</sup>. **We assume that a high (positive or negative) correlation indicates that the CTA community has had a significant amount of (long or short) open positions in the futures contract.** A high positive correlation would mean that, in general, when the price return of a futures contract increased, so did the average price return of the Newedge Trend index; this would suggest that the CTA community had a material amount of long positions open in the futures contract. Conversely, a high negative correlation would mean that, in general, when the price of a futures contract increased, the price return of the Newedge Trend index decreased; this would suggest that the CTA community had a material amount of short positions open in the futures contract. We associate low or medium (positive or negative) correlations with the CTA community having little or no open positions in the futures contract.

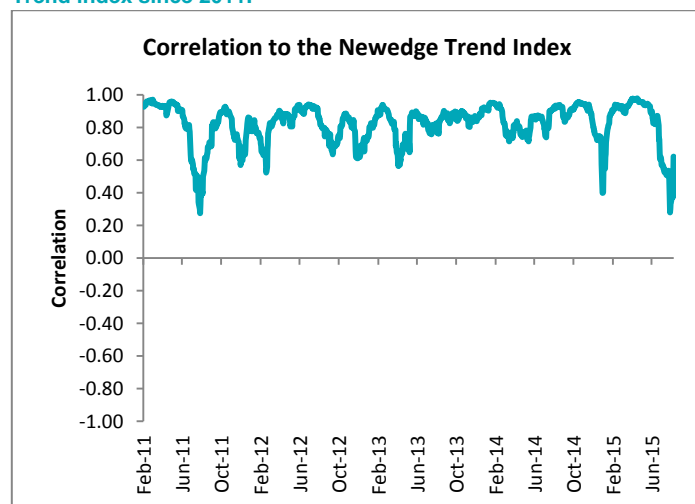
To estimate the significance of the futures-CTA correlations, we calculate the deviation from the mean for each futures contract by comparing its current correlation level to the average of its 30-day correlation to the Newedge Trend index returns since 2010. For example, a 30-day futures-CTA correlation of 0.70 that was 0.50 above average would suggest that CTAs have had a meaningful long position in the futures contract, and that this long position was considerably greater than average.

## 2nd Method: Replicated CTA Trend Following Strategy

The second component in our model is a simple CTA Trend Following strategy. From our replicated strategy, we determine whether CTAs are likely positioned long or short (at any given time) in any of the 80+ futures contracts that we track, as well as identify potential shifts in positioning based on our model's indicators.

The academic literature suggests that a simple trend following strategy, such as a moving average crossover, can explain most of the returns of CTA trend following community. In our model, we look at four moving average crossover strategies: 1) a short-term 10 vs. 100 day moving average strategy, 2) a medium-term 20 vs. 200 day moving average strategy, 3) a long-term 50 vs. 200 day moving average strategy, and 4) an equally weighted combination of the first three moving average crossover strategies. For each strategy, we compare each futures contract's near term moving average to its longer term moving average. For example, in our medium-term (20 vs. 200 day moving average) strategy the 20 day moving average being above the 200 day moving average would produce a long signal; the 20 day moving average being below the 200 day moving average would produce a short signal. Our indicators incorporate futures close prices and change daily. We assign equal risk-weights to each futures asset class (equities, interest rates, commodities, foreign exchange), and to each futures contract within each asset class. We assume that CTAs are either long or short their entire risk budget in each futures contract every day.

**Our weighted average strategy's returns have had an average strong positive correlation of 0.81 with the returns of the Newedge Trend index since 2011.**



<sup>1</sup>We reference the public Newedge Trend index with daily price return data available. The index calculates the net daily rate of return for a pool of trend following based hedge fund managers.

- Newedge Trend Index (Bloomberg ticker: NEIXCTAT Index)

### 3rd Method: Morgan Stanley Futures Open Positions

Finally, we present two metrics that describe **the net open positions, in each futures contract, of CTAs on our books**. The first metric takes the number of CTA managers who are long a given futures contract less the number of CTA managers who are short. We describe the net open position of CTAs as either “long,” “short,” or “flat.”

The second metric takes the number of CTA managers who are long less the number of CTA managers who are short, divided by the total number of managers who are active in the contract; we then calculate a z-score based on the average and standard deviation of this metric since

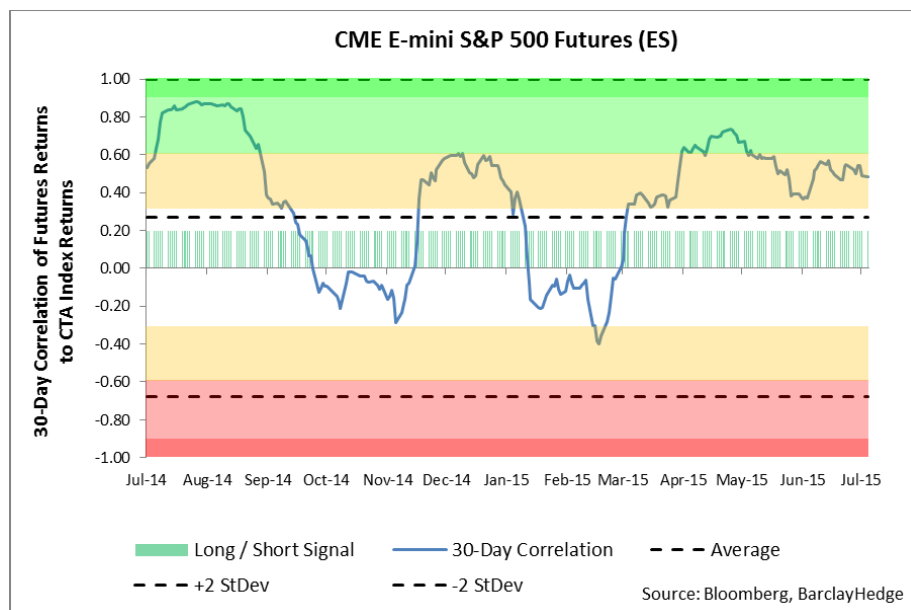
August 2013. The z-score describes how many more CTA managers are net long / fewer are net short (positive z-score) or how many more CTA managers are net short / fewer are net long (negative z-score) than on average. For example, a CTA “long” position with a 1.50 z-score indicates that CTAs on our books are net long a given futures contract, and that a considerably greater percent of CTAs are long than on average. In contrast, a CTA “long” position with a -0.50 z-score would indicate that CTAs on our books are net long a given futures contract, but that slightly fewer CTAs are long than on average. We highlight z-scores greater than |1.50| a shaded green (positive) / red (negative), and z-scores greater than |2.0| a solid green (positive) / red (negative).

### Output of our Futures-CTA Correlation and Replication Monitor (Equity Index Futures):

	Positioning -- 30-Day Correlations							Replicated Trend		MS CTA Positioning*	
								Following Signal			
	Short	-0.6	-0.3	Neutral	0.3	0.6	Long	Current Signal	Recent Shift?	Current Position	Position Z-Score
Equity Index Futures											

Source: Bloomberg, BarclayHedge, Morgan Stanley data

MS CTA positioning based on aggregated MS client Listed Derivatives data where sufficiently available.



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