

J8 CAPITAL MANAGEMENT LLP

# J8 CTA Index

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## Index Handbook

**08 July 2017**

This Index Handbook contains the calculation methodology for the J8 CTA Index. The objective of the J8 CTAI is to provide an investible and replicable benchmark index for the commodity trade advisor (CTA) and managed futures industry.

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## DEFINITIONS

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Throughout this document, following definitions and abbreviations apply:

Abbreviation or definition	Description
3M	3 Months or 91 calendar days
12M	12 Months or 1 year or 365.25 calendar days
Close	Official settlement price provided by the exchanges.
CTA	Commodity Trading Advisor
ER	Excess Return
F0	0 months forward index: the near-by rolling futures index as described by the lead contract table.
Index	J8 CTA Index or any of its sub-indices
Index Close	See Index Value.
Index Value	Index value calculated on the Index Value Day. During holidays, the last previously available settlement price shall be used for the index calculation.
Index Value Day	Every weekday, including holidays.
Index Trading day	An Index Value Day on which all exchanges of the markets included in the index are open.
J8 CTAI	J8 CTA Index
TR	Total Return
Trading Day	See Index Trading Day.
UCITS	The Undertakings for Collective Investment in Transferable Securities Directive 2009/65/EC is a consolidated EU Directive that allows collective investment schemes to operate freely throughout the EU on the basis of a single authorisation from one member state. EU member states are entitled to have additional regulatory requirements for the benefit of investors. Source: Wikipedia.

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*Table 1: Abbreviations and definitions used in the Index Handbook*

# 1 OVERVIEW

## 1.1 INTRODUCTION

In the United States, trading future contracts dates back to the 1850s. Managed futures traders are commonly referred to as “Commodity Trading Advisor” (CTA) and the term was first recognized by the U.S. Commodity Futures Trading Commission (CFTC)<sup>1</sup> in 1974. Rollinger (2013) defines Managed Futures as a collection of liquid, transparent hedge fund strategies which focus on exchange-traded futures, forwards, options, and foreign exchange markets. He further elaborates that trading programs may take both long and short positions in as many as 400 globally diverse markets, spanning physical commodities, fixed income, equity indexes, and currencies. According to Barclay Hedge<sup>2</sup>, a provider of alternative investment databases, the managed futures industry had USD 330 billion assets under management (AUM) as of the end of the second quarter of 2015. The CTA industry constitutes about 12% of the \$2.7 trillion hedge fund industry.

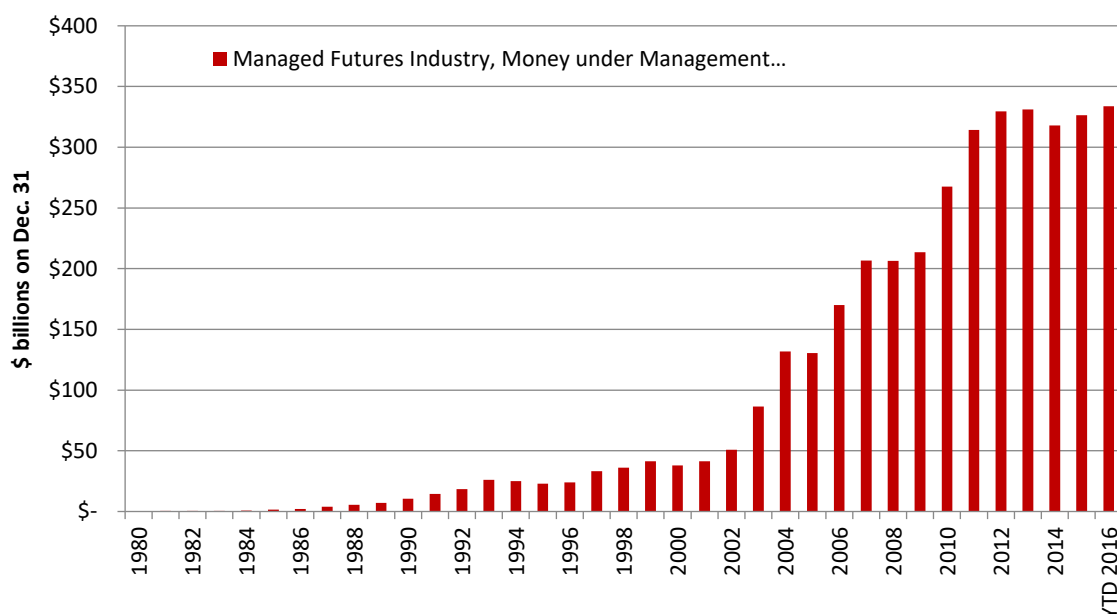


Figure 1: Managed Futures Industry AUM in USD billion as of Dec 31 since 1980. Source: Barclay Hedge Ltd. and J8 Capital Management LLP

CTAs often argue that they provide long-term portfolio insurance by taking long as well as short positions in rising and falling markets, provide portfolio diversification due to low or negative correlations with traditional as well as alternative asset classes, and long-term capital appreciation. Figure 2 illustrates the long-term value proposition of CTAs.

<sup>1</sup> <http://www.cftc.gov/index.htm>

<sup>2</sup> <http://www.barclayhedge.com/>

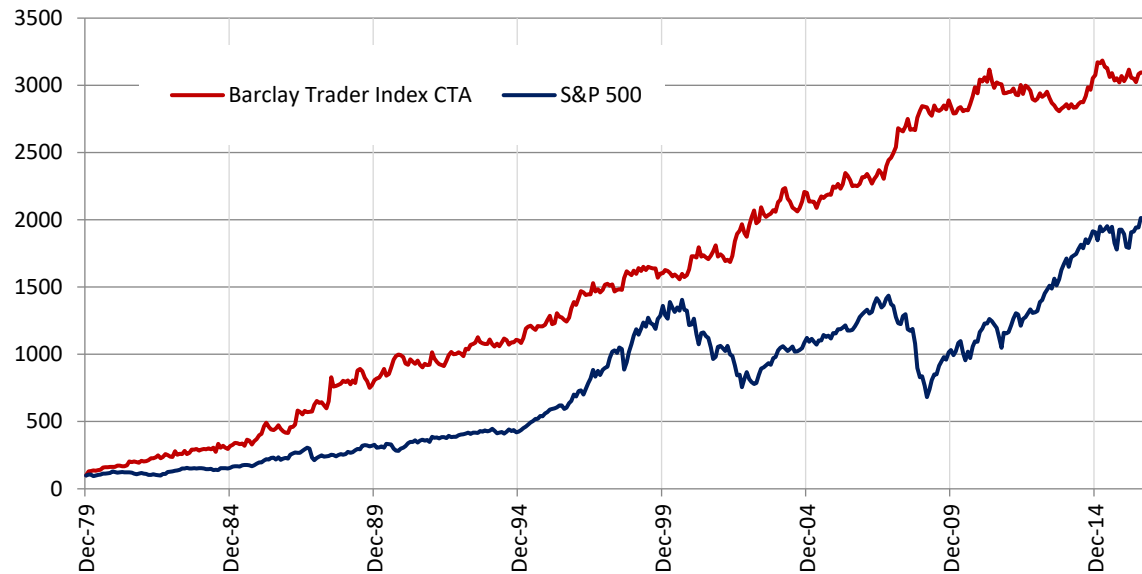


Figure 2: Long-term performance of the Barclay Trader CTA Index and the S&P 500 rebased to 100 on 31 December 1979. Source: Bloomberg LP and J8 Capital Management LLP. Note: Past performance is not indicative for future performance.

While we show later in this paper that these propositions may hold true, we first of all wanted to understand how CTAs generate returns and live up to that promise. We set out to investigate and asked: “CTAs - How do they do it”?

We chose to approach this question by survey. We wanted to know what people think how the CTA and managed futures industry is generating returns. We asked CTA investors and CTA managers to answer a detailed questionnaire with following headers from which we derived following survey-led parametrization:

- Q: What are the most popular markets CTAs are trading?
  - A: The Index uses the most popular markets traded by CTAs (S&P500, EURO FX, 10yr US T-Note, WTI Crude Oil, Gold, Copper)
- Q: What is the most popular method CTAs use to decide whether to go long or short a specific market?
  - A: The Index uses momentum, the most popular signal CTAs use to decide whether to go long or short a specific market.
- Q: What is the most popular method CTAs use to decide how to allocate their assets to specific markets?

- A: The index uses risk-weighted asset allocation, the most popular method CTAs use to decide how to allocate their assets to specific markets.
- Q: What is the most popular way CTAs manage risk?
  - A: The Index uses a target volatility mechanism, the most popular method CTAs use to control risk.
- Q: What is the most common fee structure in the CTA industry?
  - A: The Index applies a 2/20 fee structure, which is most common fee structure in the CTA industry.

After we collected the answers, we made an inspiring observation: when we implemented only the most popular answer per category into a simple index model, we found that the time series mimics popular CTA benchmark indices. Instead of tracking other managers, we used the managers' techniques instead. It is a minimalist approach trying to explain the industry by using common denominators which have been identified from the survey only. This minimalistic index offers an easy and intuitive explanation what the CTA and managed futures industry is all about: trading liquid global markets with slow moving momentum indicators in a risk-weighted asset allocation which is managed to a target volatility while applying a 2/20 fee structure.

Further, we realized another benefit of our discovery: while popular CTA indices are not investible, our minimalistic index is investible, because it is based on trading actual markets with a real trading system behind it. Also we decided to publish the methodology in an index handbook. This means that broker dealers or managers can implement and replicate the methodology and provide investors with products that offer exposure to the returns of this index. The index may offer to investors a core allocation to systematic returns. It alleviates the need for investors, who seek general exposure to systematic returns, to identify a specific target investment in the vast universe of CTAs. Instead, this index is a step towards "commoditizing" the CTA and managed futures industry and offers easy exposure to investible CTA-like returns.

We call the index "J8 CTA Index" (J8 CTAI) because it represents what survey participants agreed to be the most common markets, methods and approaches used by the CTA industry, and J8 Capital Management LLP (J8) initiated and sponsored the research. The survey findings and preliminary versions of the index have been published in international journals and magazines<sup>3</sup>.

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<sup>3</sup> Chen, H.Y., Sachs, T., Tiong R. "Common Denominators in the Commodity Trading Advisor and Managed Futures Industry". *Journal of Index Investing, Institutional Investor Journals*, Winter 2014, Volume 5, Number 3, pp. 46-58.; Sachs, T., Chen, H.Y., Tiong, R. "Common Denominators - Markets traded by CTA and managed futures funds". *The Hedge Fund Journal*, September 2014, Issue 95, pp. 24-25.; Sachs, T., Chen, H.Y., Tiong, R. "Common denominators: portfolio construction, fees. Building an index for the CTA industry". *The Hedge Fund Journal*, January 2015, Issue 101, pp. 54-57.



## 1.2 SIGNIFICANCE

A CTA and managed futures benchmark index should offer a fair representation of the CTA and managed futures industry and also be investible.

Existing benchmark indices of the CTA industry offer a fair representation but are not investible. They are not investible for mainly two reasons. One, they track large portfolios with many managers included which makes the minimum amount of investment needed to track such a portfolio impractically high, and second, they do not allow for sufficient subscription and redemption periods to accommodate for changes in the benchmark portfolios to practically replicate such portfolios by investing with the underlying managers.

The J8 CTA Index on the other hand takes a trading approach. It uses only those techniques that are widely accepted by the industry and represent a commonality among CTA managers. This offers a fair representation of the CTA and managed futures industry by the index. The index trades markets which are the most popular markets in the industry, and applies trading techniques which are commonly used by managers in the industry.

Two surveys were conducted to identify what is a fair representation of these traded markets and trading techniques of the industry.

## 1.3 DIVERSIFICATION AND LIQUIDITY

The J8 CTA Index trades a diversified and scalable portfolio of global liquid markets.

The portfolio is determined by taking the survey results of the most popular markets which are traded by the CTA and managed futures industry. The market portfolio of the J8 CTAI offers high liquidity, diversity, and high capacity.

## 1.4 CONTINUITY

It is important for the end-user to be reasonably confident that historical performance data is based on a structure that promises some resemblance with the current and future composition of the index. Certain index features, including monthly reweighting and leverage adjustment and the weekly calculation of the slow moving 12 months price momentum for determining the directional positioning, allow for a smooth response of the index to future market developments. The methodology allows for replication by industry participants and oversight bodies.

## 1.5 INDEX OVERSIGHT AND MAINTENANCE COMMITTEE

The purpose of the Index Oversight and Maintenance Committee (IOMC) is to review, discuss, and challenge all aspects of the Index in the benchmark process. The IOMC takes the “Principles for Financial Benchmarks” published by the International Organization of Securities Commissions (IOSCO) as instructive guidance.

The IOMC convenes annually in the fourth quarter of a year. It oversees all aspects of the Index, including the global annual surveys, publications in relation to the surveys and the indices, and the index methodology.

Any changes to the index methodology will be announced during the fourth quarter of the year and become effective on the first index trading day of the following year.

Members of the IOMC are:

#### 1.5.1 Tillmann Sachs, Ph.D.

Dr. Tillmann Sachs is the CIO and Head of Research of J8 Capital Management LLP. He is also the fund manager of the J8 Futures Fund and Executive Director of J8 Umbrella Funds SICAV plc in Malta.

Prior to founding J8 in 2012, Tillmann was a derivatives marketer and product originator for customized rule-based trading strategies with Barclays Capital, UBS, and AIG-FP. He was part of the DJ-UBS Commodity Index<sup>SM</sup> transition team from AIG to UBS. Tillmann joined Pairstech Capital Management LLP in 2012 as a non-equity Fund Partner.

Tillmann earned a Ph.D. in applying artificial intelligence to risk quantification from Nanyang Technological University in Singapore, a Dipl.-Ing. in Civil Engineering from RWTH Aachen in Germany, and a M.S. in Construction Management from Hanyang University in South Korea.

#### 1.5.2 Prof. Dr. Robert Tiong

Dr Robert Tiong is an Associate Professor at the School of Civil & Environmental Engineering and Deputy Director of the Centre for Infrastructure Systems, at the Nanyang Technological University (NTU) in Singapore.

His research and consulting focus on project feasibility, economic-financial analysis, integrated risk analysis and management, development of risk assessment and management frameworks, quantification of risks and project management for infrastructure projects.

Prof. Tiong has published extensively on project financing and financial modelling.

## 1.6 INDEX PUBLICATION

The index family is published by J8 Capital Management LLP on Bloomberg and on [www.j8capital.com](http://www.j8capital.com). The Index Handbook is published as well.

Index Name	Abbreviation	Bloomberg*
J8 CTA Index Excess Return	J8 CTAI ER	<i>J8CTAER Index</i>
J8 CTA Index Total Return	J8 CTAI TR	<i>J8CTATR Index</i>
J8 CTA Index Gross	J8 CTAI GROSS	<i>J8CTAGRS Index</i>
J8 CTA Index Net	J8 CTAI NET	<i>J8CTANET Index</i>
J8 CTA Index UCITS Excess Return	J8 CTAI UCITS ER	<i>J8CTAUER Index</i>

Table 2: Publication of the J8 CTA Index family. \* To be confirmed.

Please contact J8 for more information on [info@j8capital.com](mailto:info@j8capital.com).

## 2 INDEX CONSTRUCTION

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We used the 2015 survey to refine and confirm the 2014 preliminary index model and the 2017 survey to confirm the former two. Our objective is to create an investible and replicable financial benchmark index for the CTA and managed futures industry which allows investors to gain exposure to CTA-like, systematic returns. We use the survey findings for its main building blocks and follow the 19 principles of the International Organization of Securities Commissions (IOSCO) for financial benchmarks as guidance. We also develop a UCITS compliant version of the Index, following the guidelines of the European Securities and Markets Authority (ESMA) for Financial Indices.

This section sets out the calculation methodology of the J8 CTA Index ("J8 CTAI" or "Index").

### 2.1 SURVEY-LED INDEX PARAMETERIZATION

The survey found that the CTA and managed futures industry may be generalized in trading a risk weighted momentum portfolio of global core futures markets managed to a target volatility and applying a 2/20 fee structure. For the index construction, we chose the winners of each category only to avoid over fitting and optimization bias. This results in a minimalistic approach to index construction. We try to explain the complexity of the CTA and managed futures industry with the simplest possible index model.

We select the most popular markets to be included in the index construction: S&P 500, EURO FX, Gold, Copper, WTI Crude Oil, and 10yr US Treasury. We use these top markets in our index, which also represent the four key global markets of equity indices, currencies, commodities, and fixed income. Within the commodities, WTI Crude Oil, Gold, and Copper also represent the top three most popular sectors of energy, precious metals, and industrial metals. Also, the survey shows that most respondents perceive 5 to 10 single markets to constitute a diversified portfolio and our choice of six is within that range.

For the index, we also choose the most popular return driver of "momentum or trend following" and 12 month is the most popular lookback period. In annex 2, we also demonstrate that a 12 month lookback period is a robust parameter. However, we will be calculating the trading signals only weekly and not daily. A weekly signal calculation frequency also allows for better replicability and is also a requirement under UCITS guidelines for a replicable Financial Index (see section on the UCITS compliant index construction).

The constituent assets of the index will be allocated proportionally to the inverse their volatility as risk parity is the most popular asset allocation methodology. We will rebalance the portfolio monthly and not daily as suggested by the survey. In the long term, the relative volatility between markets is fairly stable and monthly rebalancing allows to reduce trading costs.

The index will be managed to a target volatility of 6% per annum for risk management purposes. Even though the most popular target volatility surveyed is 10% per annum, we discretionary set the target volatility at 6% in order to keep the index within a reasonable band to mimic popular benchmark indices. With a higher target volatility, the index would outperform the industry too

much. It would no longer serve the purpose of a representative benchmark index for the industry. The leverage capped at 200% and recalibrated monthly only, same as the asset allocation frequency. Finally, the index will apply the most popular fee structure of 2% per annum management fee and 20% high watermark performance fee with daily accruals. We ignore hurdle rates in the fee structure but we assume brokerage costs and slippage. We also apply US T-Bill returns on cash.

## 2.2 MARKETS

There are a total of six markets included in the J8 CTAs.

Asset Class	Market	Designated Contact	Exchange	Bloomberg
Commodities	WTI Crude Oil	Light, Sweet Crude Oil	NYMEX	CLA Comdty
Commodities	Copper	Copper	COMEX	HGA Comdty
Commodities	Gold	Gold	COMEX	GCA Comdty
Government Bonds	10-Year US Treasury Note	10-Year US Treasury Note	CBOT	TYA Comdty
Currencies	Euro	Euro FX	CME	ECA Curncy
Equity Indices	S&P 500	S&P 500	CME	SPA Index

*Table 3: Eligible markets and designated contracts for the J8 CTAs*

## 2.3 UNDERLYING LONG-ONLY ROLLING FUTURES CONSTITUENT INDICES

The J8 CTAI is calculated by applying directional signals, weights, and leverage on long-only rolling futures indices for each underlying constituent market.

### 2.3.1 Index calculation

The daily return  $r_t$  for each constituent long-only rolling future index on day  $t$  is calculated based on the daily change in price  $p_t$  of the underlying future contract.

$$r_t = \frac{p_t}{p_{t-1}} - 1 \quad \text{Equation 1}$$

The daily index values  $I_t$  of the long-only rolling future indices are then calculated with

$$I_t = I_{t-1} * (1 + r_t) \quad \text{Equation 2}$$

and  $I_t$  is set to 100 on 2<sup>nd</sup> January 1989 for each market.

### 2.3.2 Lead contract table

The inclusion of future contracts in the long-only rolling futures indices is determined by following lead contract table:

	Symbol	Crude WTI	Copper	Gold	10yr US Treasury	Euro	S&P 500
Jan	F	G	H	G	H	H	H
Feb	G	H	H	J	H	H	H
Mar	H	J	K	J	M	H	H
Apr	J	K	K	M	M	M	M
May	K	M	N	M	M	M	M
Jun	M	N	N	Q	U	M	M
Jul	N	Q	U	Q	U	U	U
Aug	Q	U	U	Z	U	U	U
Sep	U	V	Z	Z	Z	U	U
Oct	V	X	Z	Z	Z	Z	Z
Nov	X	Z	Z	Z	Z	Z	Z
Dec	Z	F	H	G	H	Z	Z

Table 4: Month symbols and lead contract table of included futures in the long-only index calculations

### 2.3.3 Roll schedule

The futures are rolled on the close of the first trading day of a month.

### 2.3.4 Examples for rolls in single constituent F0 indices

The long-only index returns are calculated based on the included contract in the index, which is given by the lead contract table above. The index returns are identical to the price returns of the underlying lead future contract.

For example, at the beginning of January, the WTI Crude Oil long-only index holds the futures contract which is expiring in February. During the roll in January, the index sells the February contract and buys, or rolls into, the March contract. At the beginning of February, the index still holds the March contract and then rolls again as defined by the lead contract table and roll schedule.

## 2.4 LONG/SHORT TRADING SIGNAL CALCULATION AND IMPLEMENTATION

The long/short trading signal  $S_t$  for holding either a long or a short position in a specific market is calculated during the first trading day of a week based on the closing prices of the previous week's last trading day, and implemented on the close of the first trading day of the week, so it becomes effective on the second trading day of the week.

For example, on Monday, signals are calculated based on Friday's official settlement prices and implemented on Monday's market close, subject to holiday schedules.

The trading signal takes the form

$$S_t = \begin{cases} +1, & I_{t-1} \geq I_{t-12M} \\ -1, & \text{otherwise} \end{cases} \quad \text{Equation 3}$$

$I_{t-12M}$  is the index value one 12 months prior to  $t$ .

The long/short (LS) returns,  $r_{t,LS}$  are calculated by applying the signal to the long only rolling futures index returns  $r_t$

$$r_{t,LS} = r_t * S_{t-1} \quad \text{Equation 4}$$

The long/short index value  $I_{t,LS}$  is then calculated by

$$I_{t,LS} = I_{t-1,LS} * (1 + r_{t,LS}) \quad \text{Equation 5}$$

The constituent indices are always invested in the markets and zero or neutral positions are not possible.

## 2.5 ASSET ALLOCATION AND RISK MANAGEMENT

The weights  $W_i(t)$  per market  $i$  and portfolio leverage  $K(t)$  are calculated during the first trading day of a month based on the closing prices of the previous month's last trading day, and implemented on the close of the first trading day of the month. For example, if Wednesday is the first trading day of a month, the weights and leverage are calculated based on Tuesday's official settlement prices and implemented on Wednesday's market close to be effective for Thursday's returns.

The weights are calculated and implemented monthly and remain unchanged during the month, i.e. at implementation  $t$ ,  $W_i(t-1)$  and  $K(t-1)$  are being used respectively.

### 2.5.1 Weights

The J8 CTAI uses a risk-weighted asset allocation for index construction. This is to allocate proportional to the inverse volatilities of the underlying long-only market indices  $i$ . First, the 3 months (3M) volatility,  $\sigma_i$ , is calculated as the standard deviation of the returns of the previous 3 months (or 91 calendar days).

$$\sigma_i(t) = \sqrt{\frac{1}{3M} \sum_{t=-3M}^{t=-1} (r_i - \mu)^2} \quad \text{Equation 6}$$

where  $\mu$  is the mean of the last 3 months returns including return at  $t$  and  $t=-1$  referencing the calculation using the last available official settlement prices, for example yesterday's closing prices.

Second, the inverse of that volatility per underlying market  $i$  is calculated by

$$Inv_i(t) = \frac{1}{\sigma_i(t)} \quad \text{Equation 7}$$

The individual weights for the markets are then calculated as follows:

$$W_i(t) = \frac{Inv_i(t)}{\sum_{i=1}^n Inv_i(t)} \quad \text{Equation 8}$$

where  $n$  is the number of underlying markets in the portfolio.

### 2.5.2 Risk management

The Index is risk controlled using a target volatility mechanism. The leverage factor,  $K$ , is calculated by

$$K(t) = \min \left\{ K_{max}, \frac{[Target Volatility]}{[Realized Volatility(t)]} \right\} \quad \text{Equation 9}$$

where  $K_{max}$  is the maximum leverage permitted, with  $K_{max} = 200\%$ . The annualized 3 month *Realized Volatility* at  $t$  is calculated on the unleveraged composite return,  $r_C$ , by

$$Realized Volatility(t) = \sqrt{N} \times \sqrt{\frac{1}{3M} \sum_{t=-3M}^{t=-1} (r_{C,t} - \mu_C)^2} \quad \text{Equation 10}$$

Where  $N$  is the number of index days per year,  $\mu_C$  is the mean of the last 3 months unleveraged composite returns  $r_C(t)$ , including return at  $t$ , and  $r_C(t)$  is the sum of the weighted long/short returns

$$r_C(t) = \sum_{i=1}^n (W_i(t-1) \times r_i(t)_{LS}) \quad \text{Equation 11}$$

Following table sets out the leverage cap and the target volatility of the J8 CTA Index.

	J8 CTA Index
Target Volatility	7.0%
Leverage cap $K_{max}$	200%

Table 5: Target volatility and leverage cap for J8 CTA Index

### 3 COMPUTATION OF INDEX FAMILY

The value of the J8 CTAI is set equal to 100 on 2<sup>nd</sup> April 1990 with leverage  $K$  equal to 100% until and including 31<sup>st</sup> August 1990. The index values are rounded to 8 decimals.

#### 3.1 J8 CTA INDEX EXCESS RETURN

The J8 CTAI ER allows comparison with other excess return indices. It is calculated as follows: The daily excess return  $r_{ER}(t)$  of the Index is calculated by multiplying the daily unleveraged returns with the leverage applicable for the month.

$$r_{ER}(t) = K(t) \times r_C(t) \quad \text{Equation 12}$$

The index value of the J8 CTAI ER (t) is calculated as:

$$J8 CTACDI ER(t) = J8 CTACDI ER(t-1) \times (1 + r_{ER}(t)) \quad \text{Equation 13}$$

#### 3.2 J8 CTA INDEX TOTAL RETURN

The J8 CTAI TR allows comparison with other fully funded indices. It is calculated as follows: The total return  $r_{TR}(t)$  of the index includes interest earned on cash. Interest is calculated as the risk-free daily returns on 3 Months US Treasury Bills and added to the daily excess returns of the index.

$$r_{TR}(t) = r_{ER}(t) + TBR_d \quad \text{Equation 14}$$

with

$$TBR_t = \left[ \frac{1}{1 - \frac{91}{360} \times TBAR_{t-1}} \right]^{\frac{1}{91}} - 1 \quad \text{Equation 15}$$

Where  $TBAR_{t-1}$  is the Treasury Bill Rate available on the immediately preceding index day  $t$ , as per the most recent auction for 3 Months U.S. Treasury Bills as reported on <http://www.treasurydirect.gov/instit/annceresult/annceresult.htm> and published by the Bureau of the Public Debt of the U.S. Treasury,

The index value of the J8 CTAI TR ( $t$ ) is calculated as:

$$J8\ CTACDI\ TR\ (t) = J8\ CTACDI\ TR\ (t - 1) \times (1 + r_{TR}(t)) \quad \text{Equation 16}$$

### 3.3 J8 CTA INDEX GROSS

The J8 CTAI GROSS allows comparison with other gross indices and manager performance which is reported in gross returns. It is calculated as follows: The J8 CTA Index Gross accounts for assumed trading slippage.

The Gross Index  $I_{t,gross}$  is calculated using gross returns  $r_{t,gross}$  as follows

$$I_{t,gross} = I_{t-1,gross} * (1 + r_{t,gross})$$

With  $r_{t,gross} = r_{TR}(t) - \text{slippage}$

Slippage is set at 25 basis points per annum on the unleveraged return  $r_{c,t}$ . Slippage is calculated daily accruing.

### 3.4 J8 CTA INDEX NET

The J8 CTAI NET allows comparison with other net indices and allows comparison with funds which report performance including fees. It is calculated as follows: The J8 CTA Index Net also accounts for assumed management and performance fees to allow for better comparison with other funds and managed futures programmes which often are reported net of fees.

The net Index  $I_{t,net}$  is calculated using net returns  $r_{t,net}$  as follows

$$I_{t,net} = I_{t-1,net} * (1 + r_{t,net})$$

With  $r_{t,net} = r_{t,gross} - \text{management fee} - \text{performance fee}$

Management fees are set at 2% per annum high-water-mark (HWM) performance fee are set at 20%. Management fees are accruing daily with  $\frac{2\%}{365.25}$  per calendar day, accounting for leap years. Performance fees are calculated daily against the previous day's NAV and current HWM (Note: Most CTA managers apply performance fees monthly only. However, the J8 CTAI is a daily liquid index, therefore it is applied daily).



## 3.5 J8 CTA INDEX UCITS EXCESS RETURN

The J8 CTAI UCITS ER is relevant for synthetic replication in UCITS products. It is calculated as follows: For the J8 CTAI to be an eligible Financial Index under UCITS guidelines, additional constraints on weights and leverage need to be introduced. The UCITS compliant index is called “J8 CTA Common Denominator UCITS Index Excess Return” (J8 CTAI UCITS ER). The constraints are applied on the J8 CTAI ER and the UCITS version of the index is an excess return index.

### 3.5.1 Weight constraints

Guidelines for Financial Indices by the European Securities and Markets Authority, ESMA/2014/937, stipulate diversification requirements for Financial Indices which contain commodities. The guidelines are relevant because the J8 CTAI contains commodity futures. The guidelines require the weight of each single index component not to exceed 20% and a subcategory not to exceed 35%.

None of the constituent components of the J8 CTAI form a subcategory. Their weights are capped at 20% and calculated with 10 iterations.

In each iteration, if a weight is exceeding 20%, it is reduced to 20% and the excess weight is proportionally redistributed to the other components and all weights are then normalized again. Now, the next iteration starts.

### 3.5.2 Leverage constraints

The Target Volatility of the J8 CTAI is increased to 750%. The Index leverage  $K$  is capped at  $K_{max} = 200\%$  and managed with the absolute VAR approach. The leverage is reduced by 50% of the previous day's effective leverage on the close of the trading day on which the Value at Risk (VaR) exceeds its upper threshold of 20%. The VaR is calculated based on the absolute VaR approach set forth by the Committee of European Securities Regulators, CESR/10-788 as set out in Box 15 of that regulation:

- “1. The absolute VaR of a UCITS cannot be greater than 20% of its NAV.*
  - 2. The calculation of the absolute and relative VaR should be carried out in accordance with the following parameters:*
    - (a) one-tailed confidence interval of 99 %;*
    - (b) holding period equivalent to 1 month (20 business days);*
    - (c) effective observation period (history) of risk factors of at least 1 year (250 business days) unless a shorter observation period is justified by a significant increase in price volatility (for instance extreme market conditions);*
    - (d) quarterly data set updates, or more frequent when market prices are subject to material changes;*
    - (e) at least daily calculation.*
- [...].”*

## 4 INDEX VALUE AND TRADING DAYS

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Every weekday is an Index Value Day. The J8 CTA Index values are calculated each week day, including holidays, based on the last available official settlement prices as reported by the exchanges. If there is no settlement price on a given Index Value Day due to market holiday, the previous available price shall be used.

Every day at which all exchanges which are included in the index calculation are open is an Index Trading Day.

Market disruption events shall be addressed separately by each index licensee and index trading part with their counterparties individually and is not subject of this Index Handbook.

## 5 LICENSING AND IP RIGHTS

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## 6 ANNEX: SURVEY RESULTS

The J8 CTA Index is derived from results of two surveys. One survey was conducted in the summer of 2014 and the second in the summer of 2015 to confirm the first survey's results and refine certain aspects of the survey. A third survey was conducted in summer 2017 to confirm the findings of the previous two surveys and to discover new trends in the industry, if any.

The surveys were conducted and designed by J8 Capital Management LLP in London and Prof. Robert Tiong from the Nanyang Technological University (NTU) in Singapore. The first survey was conducted from 17<sup>th</sup> June 2014 until 11<sup>th</sup> July 2014 with 51 responses globally. The results were published in Chen (2014)<sup>4</sup>, Sachs (2014)<sup>5</sup>, and Sachs (2015)<sup>6</sup>. The second survey was conducted from 21<sup>st</sup> May 2015 until 24<sup>th</sup> June 2015 with 33 responses globally, and results were published in and Sachs (2016)<sup>7</sup>. The 3<sup>rd</sup> survey was conducted from 3<sup>rd</sup> May 2017 until 16<sup>th</sup> June 2017 with 29 responses.

### 6.1 ABOUT THE RESPONDENTS AND THEIR FIRM

Respondents were asked to tick as appropriate.

	2014	2015	2017
Number of respondents	51	33	29
Type of market participant			
We are INVESTORS in CTAs and managed futures	20	13	13
We are MANAGERS and run a CTA or managed futures programme	16	13	14
We are CONSULTANTS to the CTA and managed futures industry	10	6	2
We are BROKER DEALERS and cater to the CTA and managed futures industry	5	1	0
Total firm AUM [USD]			
<50m	9	9	4
50-100m	4	3	0
100-500m	10	5	5
500m-1bn	2	3	3
1-5bn	4	0	8
>5bn	7	5	7
N/A	0	1	0
Type / Primary investors			

<sup>4</sup> Chen, H., Sachs, T., Tiong R. "Common Denominators in the Commodity Trading Advisor and Managed Futures Industry". *Journal of Index Investing, Institutional Investor Journals*, Winter 2014, Volume 5, pp. 46-58.

<sup>5</sup> Sachs, T., Chen, H., Tiong, R. "Common Denominators - Markets traded by CTA and managed futures funds". *The Hedge Fund Journal*, September 2014, Issue 97, pp. 32-33.

<sup>6</sup> Sachs, T., Chen, H., Tiong, R. "Common denominators: portfolio construction, fees. Building an index for the CTA industry". *The Hedge Fund Journal*, January 2015, Issue 101, pp. 54-57.

<sup>7</sup> Sachs, T., Tiong R. "A liquid and investible benchmark index for the CTA and managed futures industry". *Journal of Index Investing, Institutional Investor Journals*, Spring 2016, Vol. 6, No. 4: pp. 30-70.

Fund of (Hedge) Fund	16	0	5
Family Office	12	12	8
Pension Fund	7	0	3
Endowment Fund or Trust/Foundation	3	1	4
Insurance Company	3	3	4
Sovereign Wealth Fund	1	1	2
other	6	8	0
N/A	1	4	0
Preferred investment vehicle / Primary investor vehicle			
Managed Accounts	18	10	9
UCITS Fund	12	8	7
Cayman/BVI Fund	12	8	10
SIF/QIF/PIF	5	4	1
other	2	2	3
N/A	0	1	0
AUM in CTAs or managed futures [USD]			
<50m	19	23	12
50-100m	10	5	4
100-500m	12	3	10
500m-1bn	4	0	0
1-5bn	1	0	2
5bn -20bn	0	0	1
>20bn	1	0	0
N/A	4	4	0
Location			
Europe	28	15	10
UK	15	15	4
USA	18	4	10
Australia	2	1	0
Singapore	1	1	1
Hong Kong	1	1	2
Middle East	1	1	0
Canada	1	0	0
China	0	0	0
Africa	0	0	1
Latin America	0	0	1
N/A	0	0	0

## 6.2 MARKETS

Which are the most common or popular markets traded by the CTA and managed futures industry?  
Multiple ticks were possible.

Total			2014 Survey		2015 Survey		2017 Survey	
Number of respondents			51		33		29	
Rank	Number	Market	Rank	Number	Rank	Number	Rank	Number

of ticks			of ticks		of ticks		of ticks	
1	101	S&P 500	1	49	1	27	1	25
2	97	Euro FX	2	48	2	26	4	23
3	91	Gold	3	46	4	25	7	20
4	89	10yr US Treasury Note	7	41	5	24	2	24
5	87	Copper	4	45	6	23	12	19
6	86	Eurodollar	5	44	6	23	12	19
7	83	WTI Crude Oil	6	43	8	20	7	20
7	83	CBOE VIX	8	40	2	26	20	17
9	69	British Pound	13	31	12	14	2	24
9	69	Japanese Yen	9	38	16	11	7	20
11	67	Euro Bund (10yr)	12	32	11	15	7	20
12	64	Brent Crude Oil	10	37	12	14	36	13
13	62	Wheat	11	33	9	17	40	12
13	62	Euro STOXX 50	13	31	14	12	12	19
15	57	Coffee	16	28	10	16	36	13
16	56	Nikkei 225	16	28	24	8	7	20
17	55	Corn	13	31	19	9	27	15
18	54	DAX	22	24	19	9	5	21
19	50	Natural Gas (HH)	20	26	30	6	18	18
19	50	FTSE 100	25	23	30	6	5	21
19	50	Australian Dollar	20	26	27	7	20	17
22	48	Soybeans	16	28	30	6	30	14
23	47	Swiss Franc	25	23	36	5	12	19
24	46	Sugar #11	16	28	19	9	51	9
24	46	Silver	27	22	19	9	27	15
26	45	Live Cattle	31	20	16	11	30	14
26	45	5yr US Treasury Note	27	22	30	6	20	17
28	44	2yr US Treasury Note	33	19	30	6	12	19
28	44	Brazilian Real	22	24	19	9	45	11
30	43	Lean Hogs	22	24	14	12	63	7
31	42	30yr US Treasury Bond	27	22	39	4	26	16
31	42	3M Euro Euribor	27	22	24	8	40	12
31	42	Mexican Peso	31	20	36	5	20	17
34	41	10yr Japanese Government Bond	35	18	39	4	12	19
35	40	Aluminum (primary)	33	19	27	7	30	14
36	39	Nasdaq	40	15	18	10	30	14
37	36	Canadian Dollar	40	15	46	3	18	18
37	36	South African Rand	35	18	30	6	40	12
39	35	HANG SENG	43	14	39	4	20	17
40	34	Long Gilt	38	17	51	2	27	15
41	32	Russian Ruble	35	18	24	8	72	6
42	31	Euro Bobl (5yr)	39	16	46	3	40	12
42	31	Indian Rupee	40	15	39	4	40	12
44	29	CAC40	51	10	51	2	20	17
44	29	Korean Won	45	13	27	7	51	9
46	27	Euro Schatz (2yr)	53	9	39	4	30	14
46	27	Singapore Dollar	43	14	46	3	48	10
48	26	Cocoa	46	12	39	4	48	10
49	24	3M Sterling	46	12	39	4	55	8

50	23	KOSPI2	54	8	51	2	36	13
51	21	Cotton #2	46	12	51	2	63	7
51	21	Canadian 10yr Bond	60	6	60	1	30	14
51	21	Turkish New Lira	51	10	46	3	55	8
54	20	Heating Oil #2	46	12	75	0	55	8
54	20	New Zealand Dollar	60	6	46	3	45	11
56	19	3M Euroyen	50	11	60	1	63	7
57	17	Nickel (primary)	57	7	60	1	51	9
57	17	FTSE/MIB	65	5	51	2	48	10
57	17	IBEX 35	65	5	60	1	45	11
57	17	Taiwan Dollar	54	8	51	2	63	7
61	16	Gasoline RBOB	57	7	51	2	63	7
61	16	Swedish Krona	71	3	75	0	36	13
61	16	Polish Zloty	57	7	60	1	55	8
64	15	Platinum	54	8	60	1	72	6
65	13	Soybean Oil	60	6	75	0	63	7
65	13	Zinc (high grade)	69	4	60	1	55	8
65	13	S&P/TSX 60	69	4	60	1	55	8
65	13	VSTOXX	82	0	36	5	55	8
65	13	Malaysian Ringgit	65	5	60	1	63	7
70	12	Norwegian Krone	75	2	60	1	51	9
70	12	Indonesian Rupiah	60	6	60	1	75	5
72	11	Gas Oil	71	3	60	1	63	7
73	10	3M Euroswiss	60	6	75	0	78	4
73	10	Bank Accept (Canada)	71	3	60	1	72	6
75	9	Soybean Meal	65	5	75	0	78	4
75	9	Czech Koruna	76	1	75	0	55	8
77	8	Lead	76	1	75	0	63	7
77	8	Argentine Peso	76	1	51	2	75	5
79	6	Tin	76	1	75	0	75	5
79	6	Palladium	71	3	75	0	82	3
81	5	VDAX	82	0	60	1	78	4
81	5	Philippine Peso	76	1	75	0	78	4
83	3	Colombian Peso	82	0	51	2	83	1
84	2	Other	82	0	60	1	83	1
84	2	Chilean Peso	76	1	75	0	83	1

## 6.3 SIGNAL CALCULATION

What is the most popular method CTAs use to decide whether to go long or short a specific market?

The aggregate survey results are the weighted average of the 2014 and 2015 survey.

### 6.3.1 Return drivers

Which is the most common or popular return driver that drives the returns in the CTA and managed futures industry? Multiple ticks were possible.

Which is the most common or popular return engine?	2014	2015	2017
Momentum or Trend Following	42	26	26

Carry/Term structure arbitrage/Relative Value	28	3	12
Fundamental or Value	5	4	4
other	0	0	0

### 6.3.2 Trading frequency (2014 only)

This question was dropped in 2015 and substituted by the question how often trading signals which are generated by the return drivers are calculated.

2014		
	No. of ticks	Percentage
Medium	34	58.62%
High	14	24.14%
Low	10	17.24%

### 6.3.3 Signal calculation frequency (2015, 2017 only)

What is the signal calculation frequency?	2014	2015	2017
Intraday, multiple times per day		9	8
Daily		17	18
Weekly		8	7
Monthly		7	7
Quarterly		0	1
Annually		0	2
other		0	0

### 6.3.4 Management style

What is the most common management style in the CTA and managed futures industry?

What is the most common management style?	2014	2015	2017
100% systematic	33	21	21
A mix between systematic and discretionary management	19	9	8
100% discretionary	2	2	0

## 6.4 ASSET ALLOCATION

What is the most common risk or asset allocation method in the CTA and managed futures industry?  
What is the most common portfolio rebalancing frequency? Multiple ticks were possible.

### 6.4.1 Weighting mechanism

What is the most common asset allocation method?	2014	2015	2017
Equal volatility weighted or Risk parity	34	19	24
Equal notional weight	9	9	1
Minimum-variance portfolio	7	4	4
Sharpe ratio weighted	7	4	4

Full distribution/ Omega	0	1	0
other	3	0	0

#### 6.4.2 Portfolio rebalancing frequency

What is the most common portfolio rebalancing frequency?	2014	2015	2017
Daily	25	17	11
Monthly	17	6	9
Weekly	15	7	11
Intraday	9	4	5
Quarterly	3	2	0
Annually	1	0	1
other	0	0	0

### 6.5 RISK MANAGEMENT

What is the most common risk and money management method in the CTA and managed futures industry? What is the most common frequency of risk money management? Multiple ticks were possible.

#### 6.5.1 Risk management technique

What is the most common risk control method?	2014	2015	2017
Target volatility mechanism	29	16	22
Drawdown limits	24	10	7
Value at Risk (VaR)	20	13	9
Unconstrained/do nothing	0	1	2
other	2	0	0

#### 6.5.2 Risk management frequency

What is the most common frequency for risk control?	2014	2015	2017
Intraday	13	8	7
Daily	37	18	18
Weekly	9	4	11
Monthly	7	6	7
Quarterly	1	0	0
Annually	0	0	1
other	0	0	0

### 6.6 FEE STRUCTURE

What is the most common fee structure in the CTA or managed futures industry? Tick multiple option to increase range.



### 6.6.1 Management Fees

What is the most common Management Fees?	2014	2015	2017
< 0.25% p.a.	4	0	3
0.26 - 0.5% pa	3	4	2
0.6 - 1% pa	7	6	8
1.1 - 1.5% pa	16	11	11
1.6 - 2% pa	26	11	9
> 2% pa	2	0	0

### 6.6.2 High Water Mark Performance Fees

What is the most common High Water Mark Performance Fees?	2014	2015	2017
<5%	2	2	4
6 - 10%	6	1	3
11 - 15%	8	5	4
16 - 20%	28	24	16
>20%	7	0	5

### 6.6.3 Hurdle Rate

What is the most common Hurdle Rate?	2014	2015	2017
No Hurdle Rate			19
US Libor	20	9	7
A negotiated rate, e.g. 2, 3, or 5%	9	7	2
A benchmark such as e.g. S&P500, 10yr US Treasury, etc	7	6	3
other	9	6	0

## 6.7 PARAMETER SELECTION

The 2014 CTA survey identified the most common return drivers, risk and money management method, and markets. For these, what are the most common or popular parameters? Please tick.

### 6.7.1 Lookback period for a simple momentum or trend following strategy

What is a representative lookback period for a simple momentum or trend following strategy?	2014	2015	2017
1 month		7	2
2 months		3	2
3 months		8	7
6 months		4	10
9 months		2	2
12 months		10	3
15 months		0	0
18 months		2	0
2 years		2	3

### 6.7.2 Target volatility

What is the most common target volatility	2014	2015	2017
3% p.a.		1	1
5% p.a.		5	2
7% p.a.		5	3
10% p.a.		15	10
12% p.a.		5	7
15% p.a.		5	5
20% p.a.		1	3
other		0	0

### 6.7.3 Minimum how many single markets make a “diversified” portfolio?

How many single markets make a "diversified" portfolio?	2014	2015	2017
less than 5		1	2
6 to 10		15	1
11 to 20		7	14
21 to 50		7	11
51 or more		1	1

### 6.7.4 For the CTA and managed futures industry, do you agree that there is a need for an investible benchmark index?

Is there a need for an investible CTA benchmark index?	2014	2015	2017
Yes		19	14
No		11	15

### 6.7.5 For the CTA and managed futures industry, do you agree that using these survey findings in an index construction may create a representative benchmark index?

Using survey-led index parameterization creates a "relevant" benchmark index "from the industry for the industry"?	2014	2015	2017
Yes		13	16
No		17	13

*“Obviously we need to do a good deal of convincing here”. Tillmann*

## 6.8 GENERAL SURVEY COMMENTS

Survey participants were invited to provide their comments:

1. Most common markets can probably be derived through looking at market liquidity. Equity / Bonds are more liquid than most true commodities, large CTAs will thus be forced to trade more in those markets as there is less capacity available in the "smaller" markets. The larger the CTA becomes, the more liquidity tilted it becomes.

2. CTAs will concentrate their trading in the more liquid futures markets on the best exchanges.
3. Some CTAs have no hurdle rates. Or just CPI.
4. Thorough questionnaire, clearly prepared by people who understand the dynamics of the industry... Curious to see results to see if there are any surprises. My suspicion is that responses will be quite in line with our approach to the space...

## 6.9 DO YOU WANT YOUR FIRM'S NAME TO BE MENTIONED AS PARTICIPANT IN THIS SURVEY?

We extend our thanks for participating in our 2017 survey to:

- Martin Advisory & Consulting Services, LLC,
- SVQuant, Numen Capital,
- Metzler Asset Management,
- Gjensidige Forsikring,
- FEG,
- Kathrein Privatbank AG,
- Crescent Bay Capital Management, Inc.,
- CERN

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