

# truVol<sup>®</sup> US Large Cap Dynamic Hedge

Index Methodology  
March 2020

## Version History

No.	Date	Author	Comments
1.0	1/10/2020	R.Poirier	Initial
1.1	1/16/2020	T.Barchetto R.Poirier	Revised name Decrement
1.2	2/11/2020	R.Poirier	Cash buffer for tracking purposes

## Introduction

The Salt truVol® US Large Cap Dynamic Hedge Index (the “Index”) is designed to track the return of a strategy that adjusts net exposure to a constant position in the S&P 500® (the “Underlying Index”) by dynamically hedging using futures contracts in an attempt to capitalize on the inverse relationship between volatility and returns. When market volatility is high (low), the strategy will generally decrease (increase) net exposure to the Underlying Index.

The strategy uses truVol®, a proprietary model developed by Salt Financial Indices LLC (“the “Index Sponsor” or “SFI”) to estimate future volatility to adjust the hedge daily. truVol® is designed to be a more accurate and responsive forecast of volatility by using more recent, higher frequency returns.

Although the Index is designed to reduce risk and drawdowns in volatile markets, there are no guarantees the Index will achieve these results.

The Index was developed by SFI with calculation services provided by S&P Dow Jones Indices LLC (“Calculation Agent”).

## Components

The index allocates net exposure to the S&P 500® using two sub-indices in order to arrive at the final index value. The first index, the Underlying Index, is represented by the S&P 500 Total Return Index. The second index, used for dynamic hedging (denoted the “Hedge Index”), is represented by the S&P 500 Futures Excess Return Index.

The final index level is comprised of a weighted average between the Underlying Index and the Hedge Index, subject to the table below.

Sub Index	Index Ticker	Daily Exposure
S&P 500 Total Return Index	SPXT	95%
S&P 500 Futures Excess Return Index	SPXFP	-95% to 0%
Non Interest-Bearing Cash	N/A	5%

The Index maintains a static 95% weight in the Underlying Index and 5% in noninterest-bearing cash, which accounts for the margin required to maintain the short futures position. The Index is then reduced by a fixed fee of 0.30% (annualized) to account for the maintenance of the two offsetting positions.

## Hedge Ratio

The variable percentage to be hedged is governed by truVol®, a proprietary volatility estimate developed by SFI. truVol® is designed to offer higher levels of responsiveness and accuracy in estimating future volatility for risk-controlled index products. The model leverages the use of higher frequency return data and volatility regime detection to power a variety of high-performance index strategies.

The truVol® value is expressed in the Index as a Hedge Ratio—the percentage allocated to the Hedge Index. If volatility rises, the Hedge Ratio will generally rise, subject to a maximum of 100% (no net exposure to the Underlying Index). As volatility falls the Hedge Ratio will generally decline to as low as 0% (100% net exposure to the Underlying Index).

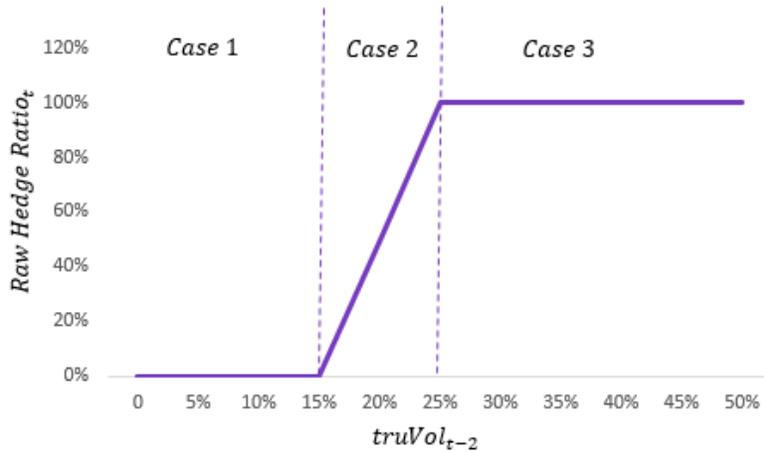
The Hedge Ratio is calculated on a one-day lag to account for the timing of implementing the updated hedge daily. Today’s Index return (t) depends on the Hedge Ratio implemented on the previous trading day (t-1) from the value calculated the prior day (t-2). Prior to an adjustment to reduce turnover, the Hedge Ratio is denoted as the Raw Hedge Ratio as follows:

$$Raw\ Hedge\ Ratio_t = \begin{cases} 0\%, & \text{if } truVol_{t-2} < 15\% \\ 10 * (truVol_{t-2} - 15\%), & \text{if } 15\% \leq truVol_{t-2} \leq 25\% \\ 100\%, & \text{if } truVol_{t-2} > 25\% \end{cases}$$

Where

*Raw Hedge Ratio<sub>t</sub>* = Percentage of portfolio to be hedged on day t  
*truVol<sub>t</sub>* = SFI's proprietary volatility estimate on day t

A visual representation of the relationship between truVol<sup>®</sup> and the Raw Hedge Ratio is illustrated below:



## Rebalancing

The Index is rebalanced daily but is subject to a buffer aimed at reducing turnover and trading costs. On each calculation date, the buffer compares the Raw Hedge Ratio against the prior day's Hedge Ratio to determine whether the new Raw Hedge Ratio should be used, or the prior days' Hedge Ratio will be carried forward.

The buffer also implements a weighted average of the prior two Raw Hedge Ratios to minimize lower impact, day-to-day noise while remaining sensitive to changes in market dynamics. Specifically, this is expressed as the following:

*Hedge Ratio<sub>t</sub>*

$$= \begin{cases} \frac{5 * \text{Raw Hedge Ratio}_t + \text{Raw Hedge Ratio}_{t-1}}{6}, & \text{if either } \left\{ \begin{array}{l} \sum_{i=0}^1 \text{Raw Hedge Ratio}_{t-i} \in \{0\%, 200\%\} \\ \text{or } \Delta \text{Hedge Ratio}_t > 25\% \end{array} \right. \\ \text{Hedge Ratio}_{t-1}, & \text{Otherwise} \end{cases}$$

Where

$$\Delta \text{Hedge Ratio}_t = \text{ABS}(\text{Raw Hedge Ratio}_t - \text{Hedge Ratio}_{t-1})$$

$$\text{Hedge Ratio}_0 = \text{Raw Hedge Ratio}_0$$

*ABS()* = Absolute value of input in parentheses

In plain language:

- If the past two Raw Hedge Ratios are both 0% or both 100%, then the Hedge Ratio is 0% or 100%, respectively.

- If the absolute value of the change from yesterday's Hedge Ratio to today's Raw Hedge Ratio is greater than 25%, the updated Hedge Ratio is equal to a weighted average of the past two Raw Hedge Ratios (5/6<sup>th</sup> of t, 1/6<sup>th</sup> of t-1).
- If neither of those two events have occurred, roll the prior day's Hedge Ratio forward (no change).

The Hedge Ratio (*Hedge Ratio<sub>t</sub>*) is calculated by SFI and disseminated to the Calculation Agent daily.

### Index Calculation (Total Return) with Fee Decrement

The Total Return version of the Index is designed to track a fully funded investment in the Underlying Index less an unfunded position in the Hedge Index. On each NYSE business day, the total return level can be calculated as follows:

$$TR\ Level_t = TR\ Level_{t-1} * (1 + TR_t);$$

$$TR_t = 0.95 * \left( \frac{Underlying\ Index_t}{Underlying\ Index_{t-1}} - 1 \right) - 0.95 * (Hedge\ Ratio_t) * \left( \frac{Hedge\ Index_t}{Hedge\ Index_{t-1}} - 1 \right) - \frac{Fee}{360} * days(t, t - 1)$$

Where

*TR Level<sub>t</sub>* = Total return level of the Index on day t

*TR<sub>t</sub>* = Total return of the Index on day t

*Hedge Ratio<sub>t</sub>* = Percentage of portfolio to be hedged on day t

*Underlying Index<sub>t</sub>* = Underlying Index level on day t

*Hedge Index<sub>t</sub>* = Hedge Index level on day t

*Fee* = 0.30% annual decrement

*days(t, t - 1)* = Actual day count between day t and day t - 1 (previous business day)

### Index Ticker

Bloomberg: SFTDH

Reuters: SFTDH

### Unscheduled Market Closures

In situations where an exchange is forced to close early due to unforeseen events, such as computer or electric power failures, weather conditions or other events, S&P Dow Jones Indices will calculate the closing price of the indices based on (1) the closing prices published by the exchange, or (2) if no closing price is available, the last regular trade reported for each security before the exchange closed. If the exchange fails to open due to unforeseen circumstances, S&P Dow Jones Indices treats this closure as a standard

market holiday. The index will use the prior day's closing prices and shifts any corporate actions to the following business day.

## Disclaimer

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