

# NASDAQ-100 MAX 30<sup>TM</sup> INDEX NDXMAX30<sup>TM</sup>

#### INDEX DESCRIPTION

The Nasdaq-100 Max 30 Index (NDXMAX30), the "Index", is designed to deliver exposure to Nasdaq-100 futures while targeting a volatility level of 30%. The Index uses the truVol® Risk Control Engine to dynamically adjust exposure to the Nasdaq-100 Futures Excess Return Index (the "Underlying Index") on a daily basis.

The truVol® Risk Control Engine is a proprietary risk management tool designed by Salt Financial LLC, to offer higher levels of responsiveness and accuracy in targeting volatility for risk-controlled indices. The mechanism generally increases exposure to the Underlying Index when volatility falls and decreases exposure when it rises.

The Index is rebalanced daily. Although the Index is designed to track a specific volatility, there is no guaranty the Index will achieve this result.

#### INDEX CALCULATION

For each Index Calculation Day, the value of the Index is calculated in accordance with the following formula:

$$I_t = I_{t-1} + U_{t-1} \times (UI_t - UI_{t-1}) - FC_t$$

where:

t = an Index Calculation Day t.

t-1 = the Index Calculation Day immediately preceding Index Calculation Day t.

 $I_x$  = the value of the Index for Index Calculation Day x.

 $U_x$  = the number of Units of the Underlying Index for Index Calculation Day x (see Rebalancing Process section below for more details).

 $UI_x$  = the level of the Underlying Index for Index Calculation Day x (rounded to two decimal places).

 $FC_x$  = the decrement costs for Index Calculation Day x.

$$FC_x = I_{t-1} \times Fee \times \frac{Days_{t-1,t}}{360}$$

where:

Fee =the decrement fee (0.01).

 $Days_{t-1,t}$  = the number of calendar days from Index Calculation Day t-1 (inclusive) and Index Calculation Day t (exclusive).

#### INDEX CONSTRUCTION

#### Index parameters

The table below details parameters specific to the construction and calculation of the Index.

Index (Ticker)	Underlying Index (Ticker)	Target Volatility	Maximum Exposure <sup>1</sup>	Maximum Change <sup>2</sup>
Nasdaq-100 Max 30 Index	Nasdaq-100 Futures Excess Return Index	30%	300%	15%
(NDXMAX30)	(NDXNQER)			

For information on the Underlying Index, please refer to the <u>Nasdaq-100 Futures Excess Return Index</u> Methodology document.

#### Index components and weighting

The Index may only include the Underlying Index.

For each Index Calculation Day, the truVol® Risk Control Engine is employed to determine the exposure to the Underlying Index. The Index then rebalances each Index Day into Units of the Underlying Index (see Rebalancing Process section below).

#### Rebalancing process

The Index is rebalanced daily after the market close. The number of Units of the Underlying Index in is determined in accordance with the following formula:

$$Units_t = U_t = \frac{FE_{t-1} \times I_{t-1}}{UI_{t-1}}$$

where:

 $FE_{t-1}$  = the Final Exposure to the Underlying Index for Index Calculation Day t-1. See Appendix B: Weighting Determination Process for more details.

 $I_t$  = the Index Value on Index Calculation Day t.

<sup>&</sup>lt;sup>1</sup> The maximum allowable exposure to the Underlying Index.

<sup>&</sup>lt;sup>2</sup> The maximum daily change in exposure to the Underlying Index.

 $UI_t$  = the level of the Underlying Index for Index Calculation Day t (rounded to two decimal places).

#### INDEX CALENDAR

### Holiday schedule

The Index is calculated Monday through Friday, except on days when the Nasdaq Stock Exchange is closed and the Underlying Index is not scheduled to be calculated.

#### Index calculation and dissemination schedule

Index values are made available after market close on each Index Calculation Day via the Nasdaq Global Index Watch (GIW) website.

#### ADDITIONAL INFORMATION

#### **Announcements**

Nasdaq announces Index-related information via the Nasdaq Global Index Watch (GIW) website at <a href="https://indexes.nasdaq.com/">https://indexes.nasdaq.com/</a>.

For more information on the general Index Announcement procedures, refer to the **Nasdaq Index Methodology Guide**.

#### Recalculation and restatement policy

For information on the Recalculation and Restatement Policy, refer to the **Nasdaq Index Recalculation Policy**.

#### Contact information

For any questions regarding an Index, contact the Nasdaq Index Client Services team at indexservices@nasdaq.com.

#### Index dissemination

Where applicable, Index values and weightings information are available through Nasdaq Global Index Watch (GIW) website at https://indexes.nasdaq.com/ as well as the Nasdaq Global Index FlexFile Delivery Service (GIFFD) and Global Index Dissemination Services (GIDS). Similar to the GIDS offerings, Genium Consolidated Feed (GCF) provides real-time Index values and weightings for the Nordic Indexes.

For more detailed information regarding Index Dissemination, refer to the **Nasdaq Index Methodology Guide**.

#### Website

For further information, refer to Nasdaq GIW website at <a href="https://indexes.nasdaq.com/">https://indexes.nasdaq.com/</a>.

#### FTP and dissemination service

Where applicable, Index values and weightings are available via FTP on the Nasdaq Global Indexes FlexFile Delivery Service (GIFFD). Index values are available via Nasdaq's Global Index Dissemination Services (GIDS).

### **GOVERNANCE**

All Nasdaq Indexes are managed by the governance committee structure and have transparent governance, oversight, and accountability procedures for the index determination process. For further details on the Index Methodology and Governance overlay, refer to the **Nasdaq Index Methodology Guide.** 

# **APPENDIX A: DEFINITIONS**

Term	Description		
Components	The Underlying Index.		
Consequences of a Market Disruption Event	If a Market Disruption Event occurs or is occurring on an Index Calculation Day that the Index Administrator determines materially affects the Index, the Index Administrator may:		
	<ul> <li>Delay the calculation of the Index and halt the dissemination of the value of the Index and /or other information relating to the Index until such time, which may be a subsequent Index Calculation Day, that the Index Administrator determines that such Market Disruption Event is no longer occurring.</li> <li>Determine a good faith estimate of any affected or missing input data required to calculate the Index or the value of the Index for such Index Calculation Day or time for such Index Calculation Day.</li> </ul>		
Rebalance Day Disruption	If a Market Disruption Event occurs on a scheduled Rebalance Day for a Component, then no change of units of that Component shall occur on that day.		
Disrupted Day	In respect of a Component, an Index Calculation Day on which there is a Market Disruption Event.		
Index Base Date	December 31, 2004		
Index Base Value	1,000.00		
Index Calculation Day	Starting with the Index Base Date, each weekday that is not a scheduled holiday according to the Index Holiday Schedule as defined in the <i>Index Calendar</i> section.		
Market Disruption Event	In respect of a Component, the occurrence of one or more of the following events that affects that Component and that the Index Administrator deems to be material to the Index:		
	<ul> <li>Trading Disruption: Any unscheduled closure of the relevant exchange; a material suspension, limitation or disruption of trading on such exchange; a failure of such exchange to publish the relevant price, level, value or other information; a halt in trading, such as a circuit breaker or other exchange imposed halt; or any other event that materially affects the ability of market participants to trade, effect transactions in, maintain or unwind positions in that Component.</li> <li>Exchange Disruption: Any exchange related event on a relevant exchange that disrupts or impairs the ability of market participants to effect transactions or obtain market values or price discovery of a component used directly or indirectly in the Index.</li> <li>Price Failure: Any event that impairs or prevents the ability of the Index Administrator to obtain a relevant price, level, rate, value or any other information from an exchange or other source necessary, on a timely basis and in a manner acceptable to the Index Administrator, in order to perform the calculation of the Index.</li> <li>Inaccurate Data: The price or value of a component that has been calculated by reference to data that, in the determination of the Index Administrator, is inaccurate, incomplete and/or does not adequately reflect the true market price or value of such component.</li> </ul>		

	<ul> <li>Force Majeure: Any event or circumstance (including, without limitation, a systems failure, natural or man-made disaster, act of God, armed conflict, act of terrorism, riot or labor disruption or any similar intervening circumstance, or restrictions due to emergency powers enforced by federal, state or local government agencies), that is beyond the reasonable control of the Index Administrator and that the Index Administrator determines, in its sole discretion, affects the Index, a component of the Index, any input data required to calculate the Index, or that prevents the ability of the Index Administrator to calculate the Index.</li> <li>General Moratorium: the Index Administrator observes on any day that there has been a declaration of a general moratorium in respect of banking activities in any relevant jurisdiction.</li> </ul>	
Rebalance Day	Each Index Calculation Day that is not a Disrupted Day.	

For additional key term not defined above, refer to the **Nasdaq Index Methodology Guide**.

#### APPENDIX B: WEIGHTING DETERMINATION PROCESS

In order to consistently target the desired level of volatility, the Index has the ability to adjust the notional exposure to the Underlying Index up and down each day, subject to a maximum leverage constraint and a maximum daily change constraint. In other words, when the measured volatility is below the target level, the Index has the potential to increase exposure. Alternatively, when the measured volatility is above the target level, the Index may reduce exposure. The Index also employs dynamic scalars which may increase the allocation when short-term volatility exceeds long-term volatility, as further defined below.

This daily exposure determination mechanism consists of the following determination steps:

#### 1. Dynamic Scalars

$$Dynamic\_Scalars_{t} = \begin{cases} 1.3, & if \ Vol_{t}^{20} > Vol_{t}^{40} \\ & 1, \quad Else \end{cases}$$

$$Vol_{t}^{N} = \sqrt{252 \times \frac{1}{N-1} \times \sum_{i=0}^{i=N-1} \left( R_{t-i} - \frac{1}{N} \times \sum_{k=0}^{k=N-1} R_{t-k} \right)^{2}}$$

where:

$$R_{x} = \frac{UI_{x}}{UI_{x-1}} - 1$$

 $UI_x$  = the level of the Underlying Index for Index Calculation Day x (rounded to two decimal places).

#### 2. Volatility Adjustment Factor

The Volatility Adjustment Factor ("VAF") is used to help nudge the realized volatility back to the target and correct for any temporary over- or under-shoots from the risk scaling mechanism. It uses a slow decay Exponentially Weighted Moving Average ("EWMA") on the Index:

$$VAF_t = Min\left(3.0, Max\left(0, \frac{VolTarget^2}{252 \times EWMA\_VAR_t}\right)\right)$$

$$EWMA_{-}VAR_{t} = 0.97 * EWMA_{-}VAR_{t-1} + 0.03 * ln \left(\frac{I_{t}}{I_{t-1}} + Fee \times \frac{Days_{t-1,t}}{360}\right)^{2}$$

where:

*VolTarget* = Target Volatility as denoted in the Index Parameters section.

 $EWMA\_VAR_t$  = the EWMA variance of the Index for Index Calculation Day t.

 $I_t$  = the level of the Index for Index Calculation Day t.

$$EWMA\_VAR_{t \le BaseDate} = \frac{VolTarget^2}{252}$$

#### 3. Exposure

$$Exposure_t = Min \left( MaxExposure, \frac{VolTarget}{\sqrt{252 \times \widehat{y^+}_t}} \right) \times Dynamic\_Scalars_t \times VAF_t$$

where:

 $\widehat{y^+}_t$  = truVol+ QQQ Variance for Index Calculation Day t, which is made available to relevant authorized individuals by Salt Financial LLC. See Appendix C: Supplemental TruVol+ Definition for more details.

## 4. Final Exposure<sup>3</sup>

$$Final\_Exposure_t = FE_t = Min \binom{MaxExposure, Final\_Exposure_{t-1} + MaxChange,}{Max(Exposure_t, Final\_Exposure_{t-1} - MaxChange)};$$
 where:

MaxExposure = Maximum Exposure as denoted in the Index Parameters section. MaxChange = Maximum Change as denoted in the Index Parameters section.

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 $<sup>^{3}</sup>$  Prior to the Base Date, the formula used was  $Final\_Exposure_t = Exposure_t$ .

#### APPENDIX C: SUPPLEMENTAL TRUVOL DEFINITION

This Methodology document has a companion document, the Nasdaq-100 Max 30 Index – truVol Calculation Module (truVol Calculation Module) that contains proprietary information designated as trade secrets by Salt Financial LLC. The truVol Calculation Module is made available to a more limited group of authorized individuals within the banks engaging in hedging activity of the Index.

The key output of the truVol Calculation Module is the truVol+ QQQ Variance estimate parameter for a given day t ( $\widehat{y^+}_t$ ). By default,  $\widehat{y^+}_t$  for day t is equal to the truVol Variance estimate for day t ( $\widehat{y}_t$ ), which incorporates intraday and overnight price values of the Invesco QQQ Trust<sup>sM</sup>, Series 1 ("QQQ"), up to the close of day (t). However, if the maximum intraday truVol Variance estimate ( $\widehat{y}_{t+1}^{\sim}$ ) observed up to 2:00PM<sup>4</sup> ET on the following day (t+1) is greater than a specified proportion (15%) of the prior days end-of-day truVol Variance estimate ( $\widehat{y}_t^{\sim}$ ), then  $\widehat{y^+}_t$  for day t, is updated to take on the value of such intraday truVol Variance estimate ( $\widehat{y}_{t+1}^{\sim}$ ).

<sup>&</sup>lt;sup>4</sup> Or 11:00AM ET for days where the Nasdaq Stock Exchange is scheduled to close early.

#### DISCLAIMER

Nasdaq may, from time to time, exercise reasonable discretion as it deems appropriate in order to ensure Index integrity, including but not limited to, quantitative inclusion criteria. Nasdaq may also, due to special circumstances, if deemed essential, apply discretionary adjustments to ensure and maintain the high quality of the index construction and calculation. Nasdaq does not guarantee that any Index accurately reflects future market performance.

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Salt Financial LLC licenses its truVol® Risk Control Engine and other methodologies (collectively, "Salt IP") to Nasdaq as a contributor to the Nasdaq-100 Max 30 Index. Salt Financial LLC and its affiliates, employees, partners, and vendors shall not be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Salt IP even if advised of the possibility of such damages.