NASDAQ-100® Currency Hedged Index^{SM} Methodology

Index Description

The NASDAQ-100 Currency Hedged Index (the "Hedged Index") is designed to represent returns for the NASDAQ-100 Index (the "Underlying Index") and global investment strategies used on the Underlying Index that involve hedging currency risk[1], but not the underlying constituent risk. The hedge ratio of the Index is the proportion of the portfolio's currency exposure that is hedged. The Index uses a hedge ratio of 100%. By selling foreign exchange forward contracts, global investors are able to lock in current exchange forward rates, and manage their currency risk. Profits (losses) from the forward contracts are offset by losses (profits) in the value of the currency, thereby negating exposure to the currency.

Index Rules for the Underlying Index

See the "NASDAQ-100 Index Methodology".

Index Calculation

The Index is calculated by hedging beginning-of-period balances using rolling forward contracts. Daily hedge returns are computed by interpolating between the spot price and forward price.

The formulas for calculating the Hedged Index Value is as follows:

m = the month in the calculation, represented as 0, 1, 2, etc.
d = the calendar day of the month, represented as 1, 2, 3 etc.
md is day d for month m, $m0$ is the last day of the month $m-1$ and $mr0$ is the index reference day of the month $m-1$
D = the number of calendar days of month m
SPI_EH_m = the Hedged Index level at the end of month m
SPI_EH_{m-1} = the Hedged Index level at the end of the prior month
SPI_EH_{mr-1} = the Hedged Index level at the end of the prior month index reference date. The index reference date for hedged indexes is one business day prior to the month-end rebalance date.
SPI_MAF = Monthly Index Adjustment Factor to account for the performance of the Hedged Index between the index reference and month-end rebalance dates. It is calculated as the ratio of the Hedged Index level on the reference date and the Hedged Index level at the end of the month.

$$SPI\_MAF = \left(\frac{SPI\_EH_{mr-1}}{SPI\_EH_{m-1}} \right)$$

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[1] Currency risk is defined as the risk attributable to the security trading in a currency different from the investor's home currency. This definition does not incorporate risks that exchange rate changes can have on an underlying security's price performance.

SPI_E_m = the Underlying Index level, in foreign currency, at the end of month m
SPI_E_{m-1} = the Underlying Index level, in foreign currency, at the end of the prior month
HR_m = the hedge return (%) over month m
S_m = the spot rate in foreign currency per local currency (FC/LC), at the end of month m
S_{mr} = the spot rate in foreign currency per local currency (FC/LC) on the index reference date for month m
F_m = the forward rate in foreign currency per local currency (FC/LC), at the end of month m
F_I_{md} = the interpolated forward rate as of day d of month m
AF_{md} = the adjustment factor for daily hedged indexes as of day d of month m

$$F\_I_{md} = S_{md} + \left(\frac{D-d}{D} \right) * (F_{md} - S_{md})$$

$$AF_{md} = SPI\_EL_{md-1} \Big/ SPI\_EL_{m0}$$

For the end of month $m = 1$,

$$SPI\_EH_1 = SPI\_EH_0 * \left(\frac{SPI\_E_1}{SPI\_E_0} + HR_1 \right)$$

For the end of month m,

$$SPI\_EH_m = SPI\_EH_{m-1} * \left(\frac{SPI\_E_m}{SPI\_E_{m-1}} + HR_m \right)$$

The hedge return for monthly currency hedged indexes is:

$$HR_m = \left(\frac{F_{m-1}}{S_{mr-1}} - \frac{S_m}{S_{mr-1}} \right) * SPI\_MAF$$

Daily Hedge Return Series

For the day d of month m,

$$SPI\_EH_{md} = SPI\_EH_{m0} * \left(\frac{SPI\_E_{md}}{SPI\_E_{m0}} + HR_{md} \right)$$

The hedge return for monthly currency hedged indexes is:

$$HR_{md} = \left(\frac{S_{mr0}}{F_{m0}} - \frac{S_{mr0}}{F\_I_{md}} \right) * SPI\_MAF$$

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The hedge return for daily currency hedged indexes is calculated as follows:

when day d is not the last business day month m,

$$\left|HR_{md} = \sum_{i=1}^{d} AF_{mi} * \left(\frac{S_{m0}}{F\_I_{mi-1}} - \frac{S_{m0}}{F\_I_{mi}} \right) \right.$$

when day d is the last business day of month m,

$$HR_{md} = \sum_{i=1}^{d-1} AF_{mi} * \left(\frac{S_{m0}}{F\_I_{mi-1}} - \frac{S_{m0}}{F\_I_{mi}} \right) + AF_{md} * \left(\frac{S_{m0}}{F\_I_{md-1}} - \frac{S_{m0}}{S_{md}} \right)$$

The Price Return Version is based on the NASDAQ-100 Index (NDX), the Total Return Version is based on the NASDAQ-100 Total Return Index (XNDX), and the Notional Net Return is based on the NASDAQ-100 Notional Net Return Index (XNDXNNR).

The Index is calculated and disseminated once at the end of each trading day, while the Underlying Index is calculated and disseminated once per second. The closing value of the Index may change up until 17:15:00 ET due to corrections to the closing value of the Underlying Index.

The following indexes are calculated:

Index Symbol	Type	Currency Hedge	Starting Date	Starting Value	Hedge Timing
NDXCADH	Price Return	Canadian Dollars	11-Jan-10	1000	Monthly
XNDXCADH	Total Return	Canadian Dollars	11-Jan-10	1000	Monthly
NDXEURH	Price Return	Euros	6-Dec-12	NDX	Daily
XNDXEURH	Total Return	Euros	6-Dec-12	XNDX	Daily
NDXERNRH	Net Total Return	Euro	6-Dec-12	XNDXNNR	Daily

NASDAQ OMX may, from time to time, will exercise reasonable discretion as it deems appropriate to ensure Index integrity.

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