# NASDAQ US Dividend Achievers Select Currency Hedged Index<sup>SM</sup> Methodology

#### **Index Description**

The NASDAQ US Dividend Achievers Select Currency Hedged Index (the "Hedged Index") is designed to represent returns for the NASDAQ US Dividend Achievers™ Select Index (the "Underlying Index") and global investment strategies used on the Underlying Index that involve hedging currency risk¹, 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 US Dividend Achievers Select 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 formula 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-1and 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.

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

 $^{1}$  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 unhedged Underlying Index level, in hedged currency terms, at the end of month m

 $SPI\_E_{m-1}$  = the unhedged Underlying Index level, in hedged currency terms, at the end of the prior month

 $HR_m$  = the hedge return (%) over month m

 $S_m$  = the spot rate in hedged currency per 1 unit of base currency, at the end of month m  $S_{mr}$  = the spot rate in hedged currency per 1 unit of base currency on the index reference date for month m

 $F_m$  = the forward rate in hedged currency per 1 unit of base currency, at the end of month m

 $F_{\perp}I_{md}$  = 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

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

$$AF_{md} = \frac{SPI - \frac{EL_{md-1}}{SPI - EL_{m0}}}$$

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:

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

For the above formulas, the fields are sourced below:

Spot Rate	WM Rate at London 4PM
Forward Contract	End of Month
Base Currency	United States Dollars (USD)
Hedged Currency	Canadian Dollars (CAD)
Month	Last Trading Day of the Month

The Price Return Version is based on the NASDAQ US Dividend Achievers Select Index (DVG) and the Total Return Version is based on the NASDAQ US Dividend Achievers Select Total Return Index (DVGTR)

The Index is calculated and disseminated every 15 seconds from 09:30:15 to 17:16:00 ET, 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	Туре	Currency Hedge	Starting Date	Starting Value	Hedge Timing
DVGCADH	Price Return	Canadian Dollars	19-Jun-13	DVG	Monthly
DVGTCADH	Total Return	Canadian Dollars	19-Jun-13	DVGTR	Monthly

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

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