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Markit VolX Indices Guide

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Introduction

The Markit VolX Indices are the benchmark family of indices that track the realized volatility in the European and North American credit derivatives markets. The indices are based on the standard CDX and iTraxx indices and provide market participants with standardized measures of credit market volatility.

The indices in the Markit VolX Indices family are

- Markit VolX Europe Index,
- Markit VolX Europe HiVol Index,
- Markit VolX Europe Crossover Index,
- Markit VolX.NA.IG Index,
- Markit VolX.NA.IG.HVOL Index and
- Markit VolX.NA.HY Index.

The indices mirror the realized volatility calculated on the basis of the corresponding five year CDS index and for 20, 60 and 90 trading day rolling window lengths.

Methodology

The historical annualized volatility levels are calculated using the spread returns for the relevant index. The EOD Composite Spreads levels published by Markit are used for the calculation irrespective of whether the index is quoted in spread or price terms in the market.

On a roll date of a new series of the relevant index, spread levels of the new index series can be significantly different from the spread levels of the old index. In order to facilitate smooth transition of the volatility index level from one series to the next the spread levels of the old series is appropriately scaled and then combined with the new series spreads for calculation of the realized volatility levels. The scaling factor is the ratio of the EOD spreads for the new and the old series as on the roll date. The adjustment factor is also applied when new versions of the index are published following a credit event or succession event.

The detailed methodology for calculation of the annualized volatility is described below.

Let $s_{0,t}, s_{-1,t}, s_{-2,t}, s_{-3,t}, \dots, s_{-n,t}$ be the EOD index composite spreads for the index I for the last n days as on day t . Let k be the interval / window over which the volatility is calculated. The spread level used in the calculation of the realized volatility is defined as:

$$S_{-i,t} = \begin{cases} s_{-i,t} & \text{for } t - r > i \\ s_{-i,t} \times \frac{s_r^{NewSeries}}{s_r^{OldSeries}} & \text{for } t - r \leq i \end{cases}$$

where r is the last roll date prior to time t , and $s_r^{NewSeries}$ and $s_r^{OldSeries}$ are respectively the EOD spread levels for the new and the old series for index I as on the last roll date

The log return on the adjusted spread used in the volatility calculation is defined as:

$$r_{-i,t} = \ln\left(\frac{S_{-i,t}}{S_{-i-1,t}}\right)$$

The daily realized volatility of the index over the k day period is calculated as:

$$\sigma_{D,t} = \sqrt{\frac{1}{k-1} \sum_{i=1}^k (r_{-i,t} - \bar{r}_t)^2}$$

where

$$\bar{r}_t = \frac{1}{k} \sum_{i=1}^k r_{-i,t}$$

The annualized volatility is derived from the daily volatility using:

$$\sigma_{A,t} = \sigma_{D,t} \times \sqrt{252}$$

where

$\sigma_{A,t}$ is the relevant credit volatility index for the underlying credit index.