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Solactive Index Modelling Assessment

1   Introduction

The index is a stock index made up of imaginary stocks. Initial level of the index is 100. The level of the index is calculated each business day based on the provided stock prices. The index is a total return index.

2   Index Selection

The index universe consists of all stocks from "Stock_A" to including "Stock_J". Every first business day of a month the index selects from the universe the top three stocks based on their market capitalization, based on the close of business values as of the last business day of the immediately preceding month. The selected stock with the highest market capitalization gets assigned a 50% weight, while the second and third each get assigned 25%. The selection becomes effective close of business on the first business date of each month.

3   Calculation of the Index

$$\text{Index}_t : \text{Index}_{t-1} \times (1 + \text{Daily Total Return}_t) \tag{1}$$

where

- Index_{t-1}: The level of the index as of calculation day t

- Index_t: The level of the index as of calculation day $t-1$

- Daily Total Return$_t$: Total daily return of the index constituents considering the assigned weights and selected stock (based on the index selection rules) as of calculation day t

4   Requirement

To run the index calculation model, the index report start date and end date are required. To calculate the daily total return, the historical stock prices are required. The final output will be the index value at different reporting dates.