

# HANDBOOK

FIVE  
FWU ISLAMIC EQUITY INDEX



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## 1. Overview

The FIVE ISLAMIC EQUITY INDEX (the “**Index**”) is a risk controlled, fx-hedged total return version of the FIVE ISLAMIC EQUITY NON-RC INDEX (the “**Top-Level Index**”). This Index is comprised of an equity exchange traded fund (“**ETF**”) which complies with Shariah investment principles. The Index and the Top-Level Index are denominated in EUR.

“**Index Business Days**”, for the calculation of the Index, the Top-Level Index and its Sub-Indices, are all weekdays except Munich<sup>1</sup> holidays. Throughout the document, if “**t**” is an Index Business Day, then “**t-b**” refers to the preceding Index Business Day. In case of a holiday on the relevant futures exchange which is not a Munich holiday, the stale price from the prior available Index Business Day is used for the respective constituent and the price of the Index is called “**indicative**”. ***In the case a financial product is linked to the Index, the financial product shall not be traded on such a day and the index level is published for information purposes only.***

The Index is available as Total Return Index. The values of the Index, the Top-Level Index and its Sub-Indices are calculated on each Index Business Day **t**, and shall reflect constituent prices as of market close in APAC. Hence, for non-APAC listed index constituents, the market price as of Index Business Day **t** is actually the market price as of the respective previous Trading Day.

The Index is calculated on a total return basis, whereas the Top-Level Index is excess return. The values of the Index and the Top-Level Index are calculated on each Index Business Day **t**, and shall reflect constituent ETF total return net dividends settlement prices as of market close in APAC. Hence, for non-APAC listed index constituents, the ETF price as of Index Business Day **t** is actually the total return net dividends settlement price of the relevant stock exchange as of the respective previous Security Trading Day (as defined below).

The Index Live Date (“**Index Live Date**”), which is the date the Index Administrator began calculating the Index is 29 January 2020. The Index Start Date is 2 January 2009 (the “**Index Start Date**”). The Index has an initial value of 100 EUR on its Index Start Date. The Index starts with an initial value of 100 EUR on its Index Start Date.

The level of the Index, as determined by the Index Calculation Agent (as defined below), will be reported on Bloomberg or any successor financial information service as defined by the Index Administrator (as defined below) in its sole and absolute discretion.

## 2. Index Calculation

### 2.1. Index Components

The index is initially starting with one “**Index Component**”, which is a **Security** (an exchange traded fund, “**ETF**”) listed in below table. The components on this list and the number of components may change in the future in accordance with section 5 of this handbook.

# MARKET	ASSET CLASS	SECURITY NAME	TICKER PREFIX <sup>ii</sup>	TICKER EXTENSION <sup>2</sup>	FX RATE	OFFSET
#1	EQ	LSE MSCI Islamic UCITS ETF	ISDW LN	Equity	USD/EUR	1

Table 1: Index components and specifications

<sup>1</sup> New Year’s Day, Epiphany, Shrove Tuesday, Good Friday, Easter Monday, Labour Day, Ascension Day, Whit Monday, Corpus Christi Day, Assumption Day, Day of German Unity, All Saints’ Day, Christmas Eve, Christmas Day, Christmas Holiday (St. Stephen’s Day), New Year’s Eve.

<sup>2</sup> Ticker as currently available on the market information service by Bloomberg L.P.

## 2.2. Security Indices

### Description

A Security Index (as defined below) is a continuously held position in the respective Security as outlined below.

Each Security Index #i starts with a value of 100 and is denominated in the underlying Security currency. Currently daily total return net dividend prices of the corresponding Security are used to calculate the daily levels of the Security Indices.

### Variables and Terms

The following terms are used within this section:

<b>Full Security Trading Day:</b>	is a trading day for the relevant exchange, on which a total return net dividends settlement price is determined and which is neither a full holiday on the relevant futures exchange (“full holiday”) nor a Partial Trading Day.
<b>Security Index:</b>	value of a position in a security as outlined below.
<b>Security Trading Day:</b>	either a Partial Security Trading Day or a Full Security Trading Day.
<b>Partial Security Trading Day:</b>	is a trading day for the respective exchange, which is only partially open for business on the respective day (“half-holiday”), but is a valid settlement day; a trading day that is only partially open for business, which is not a valid settlement day shall be counted as a “full holiday”.

The following variables are used within this section:

<b><math>o_i</math>:</b>	Index Business Day offset for prices of Security #i (as defined in table below), $t-o_i$ denotes the day $o_i$ Security Trading Days prior to Index Business Day $t$ .
<b><math>SP_{i,t-o_i}</math>:</b>	price level for Security #i on Security Trading Day $t-o_i$ . If $t-o_i$ is not a Security Trading Day, then the previous Security Trading Day’s price level is used, which is also an Index Business Day.
<b><math>SECI_{i,t}</math>:</b>	price of the Security Index for Security #i on Security Trading Day $t$ in the local currency.
<b><math>DIVS_{i,t-o_i}^{net}</math>:</b>	dividend payments of Security #i in its base currency, net of Luxembourg withholding tax, on the respective dividend ex-date $t$ .

### Security Index

Each Security Index #i starts with  $SECI_{i,1} = 100$ . On all other Security Trading Days, its value is determined as follows:

$$SECI_{i,t} = SECI_{i,t-b} + Z_{i,t-b} * [(SP_{i,t} - SP_{i,t-b}) + DIVS_{i,t}^{net}]$$

where the number of securities  $Z$  are determined as:

$$Z_{i,t} = \frac{SECI_t}{SP_{i,t}}$$

The Security Base Currency is the Security’s local currency, and the Security Index reflects a net total return performance.

## 2.3. Top-Level Index

### Description

The Top-Level Index represents a long-only fixed-proportion portfolio. It is rebalanced and reweighted on a daily basis. A monthly FX-Hedge is carried out for all non EUR-based Index Components. The Top-Level Index started on its Index Start Date with a value of 100 EUR.

### Variables and Terms

The following variables are used within this section:

- $P_t$ : the Top-Level Index on Index Business Day t.
- $w_i$ : target weight for Security Index #i in the Top-Level Index.
- $N_{i,t}$ : number of units of Security Index #i held in the Top-Level Index on Index Business Day t.
- $HPL_{i,t}$ : for Security Index #i, hedge PnL denominated in the Index Base Currency realised on Index Business Day t
- $RD_t^-$ : most recent actual Rebalancing Date prior to Index Business Day t
- $RD_{t-b}^-$ : Index Business Day prior to  $RD_t^-$
- $RD_t^+$ : actual Rebalancing Date subsequent to  $RD_t^-$
- $RD_{t-b}^+$ : Index Business Day prior to  $RD_t^+$
- $X_{i,t}$ : mid spot exchange rate from EUR to the currency of Security Index #i on Index Business Day t
- $FWD_{i,t}^{1m}$ : for Security Index #i, the mid 1-month (the next FX-Hedge Rebalancing Date equals the maturity date) FX-Forward Rate (between the Index Base Currency and the Index Component's local currency) as of Index Business Day t
- $FWD_{i,t}^{RD_t^+}$ : for Security Index #i, the interpolated mid FX-Forward Rate (between the Index Base Currency and the Index Component's local currency) as of Index Business Day t, with the next FX-Hedge Rebalancing Date being the maturity date

#	SECURITY NAME	TICKER PREFIX <sup>ii</sup>	TICKER EXTENSION <sup>3</sup>	$w_i$
i=1	LSE MSCI Islamic UCITS ETF	ISDW LN	Equity	100.0%

Table 2: Index component weights

### Rebalancing Process

A “**Target Rebalancing Day**” is defined as the first Index Business Day of each month.

For each Target Rebalancing Day t, the “**Actual Rebalancing Day**” is the latest Index Business Day until and including t, such that t-o is a trading day for all Index Components in the Top-Level Index.

If t is an Actual Rebalancing Day, then the number of units N of Security Index #i in the Top-Level Index are updated based on the previous Index Business Day's prices:

$$N_{i,t} = \frac{w_i * P_{t-b}}{SECI_{i,t-b} * X_{i,t-2b}}$$

Otherwise, the number of units of Security Index #i in the Top-Level Index is carried over from the previous Index Business Day:

$$N_{i,t} = N_{i,t-b}$$

<sup>3</sup> Ticker as currently available on the market information service by Bloomberg L.P.

### FX-Hedge

The FX-Hedge is rebalanced on each actual rebalancing. During such a period, the FX-Hedge generates a PnL in the Index Base Currency, which is calculated as follows:

$$HPL_{i,t} = SECI_{i, RD_{t-b}^-} / X_{i, RD_{t-b}^-} * \left( \frac{1}{FWD_{i, RD_{t-b}^-}^{1m}} - \frac{1}{FWD_{i, t-2b}^{RD_{t-b}^+}} \right)$$

and

$$FWD_t^{RD_{t-b}^+} = X_t + (FWD_t^{1m} - X_t) \times \frac{D-d}{D}$$

Where  $D$  : number of calendar days between  $RD_{t-b}^-$  and  $RD_{t-b}^+$

$d$  : number of calendar days between  $RD_{t-b}^-$  and Index Business Day t-b

### Top-Level Index Calculation

From index business day t-b to t, the EUR profit and loss for N units of Security Index #i is

$$PnL_{i,t} = (SECI_{i,t} / X_{t-b} - SECI_{i, RD_{t-b}^-} / X_{i, RD_{t-b}^-}) * N_{i,t} + HPL_{i,t}$$

The Top-Level Index on Index Business Day t is

$$P_t = P_{RD_t^-} + \sum_{i=1} PnL_{i,t}$$

## 2.4. FIVE FWU Islamic Equity Index (the “Index”)

### Description

The Index is a risk controlled and fx-hedged version of the Top-Level Index aiming at realizing a target volatility of 8% using a theoretical maximum leverage of 100%. The time series started on its Index Start Date. An EWMA based volatility estimator is used to realize the aforementioned volatility level. Transaction costs are charged whenever Securities are traded (see transaction cost table below). The Index starts with a value of 100 EUR on the Index Start Date. Its performance results from a) the price performance of the unhedged Index Components in their local currency, b) the PnL (“HPL”) stemming from the fx-hedge, c) the transaction costs (“TC”) stemming from portfolio adjustments, d) the negative drift (“f”) of 10 bps per annum (act/360) and e) the negative drift (“f\_FWU”) of 100 bps per annum (act/360).

### Variables

In addition to the previously defined terms, the following variables are used in this section:

- $a_t$ : actual leverage of the Top-Level Index in the risk control mechanism on Index Business Day t.
- $a_t'$ : actual units of the Top-Level Index held on Index Business Day t.
- $c$ : theoretical leverage cap (=100%).
- $days(t_1, t_2)$ : number of calendar days between Index Business Day  $t_1$  and  $t_2$ .
- $f$ : the negative drift of 10 bps per annum.
- $f\_FWU$ : FWU MANAGED ACCOUNT FEE of 100 bps per annum.
- $r_{t-b}$ : the overnight interest rate as of the most recent Index Business Day (Bloomberg ticker: EONIA Index)  
If t-b is not an TARGET2 business day, then the value as of the Index Business Day preceding t-b is used.
- $g_t$ : target leverage of the Top-Level Index in the risk control mechanism on Index Business Day t.

- $I_t$ : the Index on Index Business Day t.  
 $P_t$ : the Top-Level Index on Index Business Day t.  
 $\sigma_t^p$ : realized volatility of the Index on Index Business Day t as defined below.  
 $TC_t$ : transaction costs occurring on Index Business Day t in the Index (=0)  
 $v$ : target volatility of the Index (=8%).

#### *Volatility Estimator for the Risk Control Mechanism*

The parameters and variables necessary to compute the realized volatility are defined as follows:

$$j = 1, \dots, 89$$

$$\lambda = 0.98$$

$$\omega_j = (1 - \lambda) * \lambda^{j-1}$$

Now the volatility estimator can be determined:

$$\sigma_{j,t}^p = \sqrt{\frac{250}{\sum_{y=1}^j \omega_y} \times \sum_{j=1}^j \omega_j \times \text{LN} \left[ \frac{P_{t-j*b}}{P_{t-(j-1)*b}} \right]^2}$$

$$\sigma_t^p = \max(\sigma_{19,t}^p, \sigma_{89,t}^p)$$

#### *Rebalancing Process in the Risk Control Mechanism*

Based on this realized volatility, the target leverage in the Index  $I_t$  is calculated as follows:

$$g_t = \min \left( c, \frac{v}{\sigma_t^p} \right)$$

On the Index Start Date of the Index, the actual units  $a'_t$  of the Top-Level Index held are initialized as follows:

$$a'_1 = \frac{g_1 \times I_1}{P_1}$$

where  $I_1 = 100$ .

On all other Index Business Days, the actual leverage  $a_t$  of the Top-Level Index is calculated on the basis of the actual units of the Top-Level Index held in the Index:

$$a_t = \frac{a'_t \times P_t}{I_t}$$

On any Index Business Day t, the factual units of the Top-Level Index held in the Index  $a'_t$  are rebalanced as follow:

$$a'_t = \frac{g_{t-b} \times I_{t-b}}{P_{t-b}}, \text{ if } \left| \text{LN} \left( \frac{a_{t-b}}{g_{t-b}} \right) \right| > 5\% \text{ and } t-o_i \text{ is a Security Trading Day for all underlying Securities,}$$

$$a'_t = a'_{t-1}, \text{ else.}$$

#### *Index Calculation*

On the Index Start Date of the Index, the Index  $I_t$  is initialized with 100 EUR. On all other Index Business Days, it is updated by the following rule:

$$I_t = I_{t-b} \times \left( 1 - [f + f\_FWU] \times \frac{\text{days}(t-b,t)}{360} \right) + a'_{t-b} (P_t - P_{t-b}) - TC_t$$

## 2.5. Accuracy

The daily closing price of the Index will be rounded to five decimal places.

## 3. Index Owner

The Index Owner is Munich Reinsurance Company (“**Munich Re**” or “**Index Owner**”). The Index Owner will retain all ownership rights, expressed or otherwise, with respect to the Index, including the ability to license, sell or transfer any or all of its ownership rights with respect to the Index.

The Index Owner has appointed an independent Index Administrator and an independent Index Calculation Agent to maintain and calculate the Index. The Index Owner may in the future terminate the appointment of the Index Calculation Agent and/or the Index Administrator and appoint a replacement Index Administrator or Index Calculation Agent.

## 4. Index Administrator / Index Calculation Agent

The Index Owner has entrusted the day-to-day management and maintenance of the Index to an independent Index Administrator and an independent Index Calculation Agent.

The Index Administrator and the Index Calculation Agent is currently Solactive AG.

The Index Administrator and the Index Calculation Agent will maintain and employ the rules, procedures and methodology described in this document. This includes the implementation of changes to the Index and/or to the methodology under the instruction of the Index Committee (as defined below). The Index Calculation Agent is responsible for the publication of the values of the Index determined by it as well as any further publication in relation to the Index.

Subject to the terms set out in this document, any determination by the Index Calculation Agent will be made in its sole and absolute discretion by reference to such factors as it deems appropriate at such time. Any such determination by the Index Calculation Agent will, in the absence of manifest error, be final, conclusive and binding.

No assurance can be given that market, regulatory, juridical or fiscal circumstances will not arise that would, in the view of the Index Committee, make a modification or change of the methodology necessary, which then would have to be implemented by the Index Administrator.

## 5. Calculation during Market Disruption Events and Index Adjustments

In its role as Index Administrator Solactive AG (acting as applicable through the Index Committee) may in accordance with the terms of this document, adjust the calculation of, delay, suspend or permanently cancel the Index and may have no obligation to continue the calculation, publication and dissemination of the Index. Any such calculation adjustment, delay, suspension, cancellation or non-publication may have a negative impact on any instruments linked to the Index.

### 5.1. Index Committee

The “**Index Committee**” is composed of staff from Solactive AG. The Index Committee is responsible to oversee the Index and the methodology described in this document.

It is the Index Committee’s aim to maintain the Index liquid and tradable. This includes the response to an Market Disruption Event, Index Modification and/or Index Correction (each as defined below), which will be implemented by the Index Administrator.



To meet its objectives, the Index Committee may – based on a defined set of internal rules - exercise limited discretion with respect to the modification the methodology described in this document in relation to either of the Index, including, but not limited to, in case an Index Modification and/or Index Correction (together “**Index Adjustments**”) or a Market Disruption Event has occurred.

In case of a reaction by the Index Committee on one of these circumstances, the proposed change(s) and action(s) in relation to the Index will be reported by the Index Committee to the Index Administrator. Any such change(s) or action(s) are publicly announced by the Index Administrator as outlined in paragraph 5.3 below.

## 5.2. Market Disruption Event

Local market disruptions can have a global effect. Market disruptions can severely adversely affect the performance of the Index.

If on any Index Business Day a Market Disruption Event (as defined in the 2002 ISDA Equity Derivatives Definitions) has occurred, the Index Administrator shall calculate the value of the Index for such Index Business Day using a value for the affected Index Component(s), which is determined by the Index Committee in its sole and absolute discretion, having regard to the then prevailing market conditions, the last reported trade price of such Index Component(s) and such other conditions that the Index Committee, in its sole and absolute discretion, determines relevant for the valuation of such Index Component(s).

A Market Disruption Event is defined as the occurrence or existence of (a) a Trading Disruption, (b) an Exchange Disruption, which in either case the Index Committee determines is material at any time during the one hour period that end at the relevant settlement time, or (c) an Early Closure (each as defined in the 2002 ISDA Equity Derivatives Definitions).

## 5.3. Index Adjustments

### *Index Modification*

The Index is subject to certain modifications in situations, in which it is difficult or impossible for the Index Calculation Agent to calculate the value of the Index or to maintain the Index Principles with the chosen calculation parameters or variables and Index Components. Another reason for modifications includes situations, in which the index production costs increase, for example due to licensing issues, or situations, in which the index production costs can be decreased for example by using alternative data sources, which have at least the same quality as the replaced data source.

Consequently, the Index Committee may make discretionary decisions with regard to the calculation of the Index (including but not limited to changing the published methodology, make adjustments to the composition or calculation parameters and variables of the Index or the cancellation of the Index).

The Index Committee will make reasonable efforts to assure that such modifications, changes and replacements will result in a methodology that is consistent with the methodology described above.

### *Index Correction*

If the Index Administrator determines that a material error has occurred in the calculation of the Index, the Top-Level Index and/or its Sub-Indices, resulting in publication of a materially inaccurate value of the Index, the Index Administrator may instruct the Index Committee to advise the Index Calculation Agent to calculate and publish a corrected value for the Index.

The Index Committee shall determine according to its internal rules, whether such corrected value of the Index shall for the purposes of the calculations of the Index apply from the date such correction is published or on a retrospective basis.

### ***Publication of Index Adjustments***

Changes to the Index Components or to the methodology of any of the Index as decided by the Index Committee and implemented by the Index Calculation Agent will be announced as promptly as is reasonably practicable and normally at least 60 Index Business Days prior to the effective date of such change(s).

Changes decided by the Index Committee and implemented by the Index Calculation Agent in response to Market Disruption Events will be announced by the Index Calculation Agent as promptly as it is reasonably practicable.

## **6. Historical Data**

The values of the Index between the Index Start Date and the Index Live Date have been determined by reference to historical data and must be considered as simulated and thus purely hypothetical. It is provided as an illustration of how the Index would have performed during the period had the Index Calculation Agent began calculating the Index on the Index Start Date using the methodology described in this document. This data does not reflect actual performance, nor was a contemporaneous investment model run of the Index. Whilst any such methodology or assumption is, in the view of the Index Owner, reasonable, the use of historical data may result in material differences between the simulated performance of the Index, prior to the Index Live Date, and any subsequent actual performance. The Index history before the Index Live Date has been determined by the Index Owner and has only partially been verified by the Index Calculation Agent.

Historical levels of the Index for the period from and after the Index Live Date are calculated with reference to the official closing levels of the Index Components determined based on the latest available data published by the relevant futures exchanges and/or benchmark administrators and/or as delivered via the employed information systems.

Past performance of the Index is not a reliable guide to future performance and the past performance of the Index may have been determined on terms different to those described in this Index Handbook. No assurance, representation or warranty is given of the future performance of the Index or that it will achieve its objective. Instruments linked to the Index can fluctuate in price or value and prices, values or income may fall against the interests of any investor exposed to the performance of the Index. Changes in rates of exchange, rates of interest and prices of any Index Components, among other things, may have an adverse effect on the value of the Index.

## **7. Contact**

### **7.1. Index Owner**

The Index Owner can be contacted at the following address:

Munich Reinsurance Company  
Financial Solutions  
Königinstrasse 107  
80802 Munich  
Germany

Internet: <http://www.munichre.com>

## 7.2. Index Administrator

The Index Administrator can be contacted at the following address:

Solactive AG  
Platz der Einheit 1  
60327 Frankfurt am Main  
Germany

Internet: <http://www.solactive.com>

## 7.3. Index Calculation Agent

The Index Calculation Agent can be contacted at the following address:

Solactive AG  
Platz der Einheit 1  
60327 Frankfurt am Main  
Germany

Internet: <http://www.solactive.com>

## 8. Risk Provisions

Without prejudice to the Disclaimer in Section 9, regard should be had to the non-exhaustive risk factors below which describe events or circumstances that may affect the calculation and/or the performance of the Index and may be material for the purposes of assessing the risks associated with any investment related to the Index.

### 8.1. Nature of the Index

The Index is a rules-based formula that enables the value of the Index to be calculated from time to time. Although instruments may be issued or entered into whose return is linked to the performance of the Index, the Index is not itself an investment or instrument and does not give any person any entitlement to, or ownership interest in, any Index Components or any other obligation or asset referenced (directly or indirectly) by the Index.

### 8.2. Potential Conflicts of Interest

Potential conflicts of interest may exist in the internal teams, divisions or entities of the Munich Re Group. For example, one team may make determinations and take actions in relation to the Index in its capacity as Index Owner, while another team within the organisation may issue or promote/sell products linked to the Index.

In addition, a further team within the organisation may have trading positions in or relation to instruments and assets to which the performance of the Index is directly or indirectly linked (including any Index Component). No entity within the Munich Re Group shall have any duty or obligation to take into account any impact in the performance of the Index when effecting transactions in such instruments and assets.

### 8.3. Risks associated with an investment in instruments linked to the Index

#### *Counterparty Risk*

Instruments linked to the Index may be exposed to counterparty credit risk. If an entity trades, enters into or issues any such instruments and becomes insolvent it may not be able to meet all of its payment obligations.

### ***Interaction Risk***

The value of the Index is based on the performance of different investment types. Different types of financial risk may interact unpredictably on these investments, particularly in times of market stress.

### ***Tax***

The value of the Index may be reduced to account for certain taxes and other deductions and therefore, may impact the performance of the Index and returns on any instruments linked to the Index.

### ***Duty of Care***

Subject always to their regulatory obligations and except as may be required by applicable law, neither the Index Owner, the Index Administrator (including where it acts through the Index Committee) nor the Index Calculation Agent shall have a duty of care or any fiduciary duty to any person in respect of the Index including any investor in any instrument linked to the Index. Neither the Index Owner, the Index Administrator nor the Index Calculation Agent is acting as an investment adviser or manager or providing advice of any nature in relation to the Index or any instrument linked to the Index.

### ***Other Risks***

There is no guarantee, warranty or assurance that this document discloses all possible factors that may affect the performance of the Index and the risks of investing in any instrument that is linked to the Index.

Before investing in any such instrument, you must satisfy yourself that you fully understand the risks of such investment and you are solely responsible for making an independent appraisal of and investigation into the Index and should not rely on this document as constituting investment advice.

## 9. DISCLAIMER

THE INDEX OWNER, THE INDEX ADMINISTRATOR AND THE INDEX CALCULATION AGENT MAY EACH BE SUBJECT TO A NUMBER OF CONFLICTS OF INTEREST IN CONNECTION WITH THEIR ROLE AND SERVICES PERFORMED WITH RESPECT TO THE INDEX. IN THE EVENT THAT SUCH CONFLICTS ARISE, THE INDEX OWNER, THE INDEX CALCULATION AGENT AND THE INDEX ADMINISTRATOR SHALL USE THEIR REASONABLE ENDEAVOURS TO RESOLVE SUCH CONFLICTS OF INTEREST FAIRLY (HAVING REGARD TO THEIR RESPECTIVE OBLIGATIONS AND DUTIES).

ALTHOUGH THE INDEX OWNER, THE INDEX ADMINISTRATOR AND THE INDEX CALCULATION AGENT, AS APPLICABLE, WILL EACH OBTAIN INFORMATION FOR INCLUSION IN OR FOR USE IN THE PROVISION OF THE INDEX FROM SOURCES WHICH THE INDEX OWNER OR THE INDEX ADMINISTRATOR CONSIDERS RELIABLE, NEITHER THE INDEX OWNER NOR THE INDEX ADMINISTRATOR NOR THE INDEX CALCULATION AGENT WILL INDEPENDENTLY VERIFY SUCH INFORMATION AND OR GUARANTEE THE ACCURACY AND/OR THE COMPLETENESS OF THE INDEX OR ANY DATA INCLUDED THEREIN. THE INDEX IS COMPILED BY THE INDEX ADMINISTRATOR AND CALCULATED BY THE INDEX CALCULATION AGENT. POTENTIAL INVESTORS SHOULD BE AWARE THAT THE INDEX ADMINISTRATOR HAS A NUMBER OF SIGNIFICANT DISCRETIONS IN RELATION TO THE PROVISION OF THE INDEX.

THE INDEX OWNER, ANY OF ITS AFFILIATES, THE INDEX ADMINISTRATOR OR THE INDEX CALCULATION AGENT DO NOT MAKE ANY EXPRESS OR IMPLIED WARRANTY OR REPRESENTATION WHATSOEVER AS TO (A) THE ADVISABILITY OF PURCHASING OR ASSUMING ANY RISK IN CONNECTION WITH ANY TRANSACTIONS ANY INVESTMENTS OR TRADING PRODUCTS OR STRATEGIES BASED ON, INDEXED TO OR OTHERWISE RELATED TO THE INDEX, (B) THE RESULTS TO BE OBTAINED FROM THE USE OF THE INDEX OR ANY DATA INCLUDED THEREIN IN CONNECTION WITH ANY LICENSED RIGHTS OR FOR ANY OTHER USE, (C) THE LEVEL AT WHICH THE INDEX STANDS OR WILL STAND, ANY INDEX COMPONENT, OR THE WEIGHT OF ANY INDEX COMPONENT AT ANY PARTICULAR TIME ON ANY PARTICULAR DAY OR (D) ANY OTHER MATTER. NEITHER THE INDEX OWNER NOR ANY OF ITS AFFILIATES MAKES ANY EXPRESS OR IMPLIED REPRESENTATIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INDEX OR ANY DATA INCLUDED THEREIN. A POTENTIAL INVESTOR IN, OR COUNTERPARTY TO, PRODUCTS BASED ON THE INDEX HAS NO DIRECT RECOURSE TO EITHER THE INDEX OWNER OR ANY OF ITS AFFILIATES AND THE CHARACTERISTICS AND RISKS ASSOCIATED WITH SUCH PRODUCTS ARE AVAILABLE IN THE PRODUCT RELATED DOCUMENTS.

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