Multi Asset Global Futures EUR Index

(Excess Return – EUR)

Index Rules

Draft Version as of June 26th 2018

Multi Asset Global Futures EUR Index

(**Excess Return – EUR**)

Index Rules Summary

1.1 Index Description

The Multi Asset Global Futures EUR Index (the "**Index**") is a rules-based index that tracks the performance of a systematically weight-adjusted basket of multi-asset Indices with a volatility control mechanism. Specifically, the Index employs an algorithmic and rules-based strategy to track a systematically risk-balanced basket of underlyings representing various asset classes, with the aim of providing risk and asset diversification via the Equal-Risk Contribution Methodology discussed below. The Index undergoes a systematic rebalancing process (based on historical volatilities, correlations and performances of the underlyings in the Underlying Basket (as defined below)) to adjust the weightings of its exposure to the Underlying Basket while maintaining its volatility close to a pre-defined target level of 6%. The exposure of the Index to the Underlying Basket can reach a maximum of 150% of the level of the Index.

The Index is calculated and published by Stoxx Limited, Zurich, Switzerland (the "**Index Calculation Agent**") and is sponsored by Société Générale (the "**Index Sponsor**").

Main Characteristics

Bloomberg ticker:	IND1MAGF <Index>
Type of Return:	Excess Return
Calculation Frequency:	Daily
Publication Time:	End of Day
Index Launch Date:	June 1st, 2018
Currency:	EUR
Fees and Costs:	As specified under the "Index Fees and Costs" section below
Index Asset Class:	Multi-Asset
Index Components:	SGI Underlying Index and Market Data

1.2 Mechanism

1.2.1 Index Composition

The Index is composed of a basket of SGI Underlying Indices (each, a "**Basket Component**", and together, the "**Underlying Basket**") where the weightings assigned to each of the Basket Components are determined on a monthly basis in accordance with a methodology described under 1.2.2 below. The Basket Components are described in Appendix 1.

In order to keep the risks associated with the Index under a certain limit, the Index also includes a volatility control mechanism, where the exposure of the Index to the Underlying Basket varies on a daily basis in accordance with input parameters described under 1.2.4 below.

1.2.2 Composition and Monthly Review of the Underlying Basket

The composition of and allocations within the Underlying Basket are reviewed on a monthly basis according to a proprietary model based on a momentum filter and the Equal-Risk Contribution methodology (the "**ERC Momentum Methodology**") developed by the Index Sponsor and described in Section 3. The ERC Momentum Methodology aims to weight the allocations of the Basket Components in the Underlying Basket so that each Basket Component provides the same marginal additional volatility to the Index, taking into account each Basket Component's historical volatility and its respective historical correlation to the other Basket Components. Thus, each Basket Component theoretically should contribute a relatively equal amount of risk to the Underlying Basket. The resulting weightings are applied to the Basket Components so as to determine the composition of the Underlying Basket. The initial allocation of the Underlying Basket is displayed in Appendix 1.

1.2.3 Momentum Strategy

The ERC Momentum Methodology employs a "trend-following" strategy that looks at the past performance of each Basket Component. The trend-following strategy tends to overweight the past best performing Basket Components and underweight the past worst performing Basket Components. The maximum weight of an individual Basket Component is limited by the maximum weight allowable for such Basket Component.

1.2.4 Daily "Vol Target" Mechanism

The Index is constructed pursuant to a daily volatility target process where the deemed exposure of the Index to the Underlying Basket (the "**Exposure**") is based on a formula using the following input parameters:

(i) the short term historical volatility of the Underlying Basket;
(ii) a target volatility of 6%; and
(iii) the historical volatility of the Index itself;

so that, in most cases:
- when the short-term historical volatility of the Underlying Basket exceeds 6%, the Exposure will generally be less than 100% (subject to a minimum Exposure of 0%) and the Index will be exposed to money market instruments referencing the 3-month EURIBOR rate (the **"Euribor Rate"**) for the difference between 100% and the Exposure;
- when the short-term historical volatility of the Underlying Basket falls below 6%, the Exposure will generally be greater than 100% (subject to a maximum leveraged Exposure of 150%, such leveraged Exposure obtained at the Libor Rate for the difference between the Exposure and 100%).

1.3 Index Fees and Costs

The Index is calculated net of the following fees and costs:

Fixed Replication Costs: As per Appendix 1 under RC_i. These fixed costs correspond to costs that would be incurred by a Hypothetical Replicating Party replicating long positions in the Basket Components for purposes of replicating the strategy of the Underlying Basket. These costs are fixed and applied on a daily and accrued basis on the level or price of the Basket Components.

Fixed Transaction Costs: As per Appendix 1 under C_i. These fixed costs corresponds to the execution costs incurred by a Hypothetical Replicating Party related to the deemed purchase or liquidation of Basket Components pursuant to changes in allocations and rebalancings that impact the Index Level upon such reallocations and rebalancing.

1.4 SGI Global Methodology

The Index is computed and maintained pursuant to these Index Rules whichincorporate by reference the SGI Indices Global Methodology (version dated 16 January 2017, as supplemented, amended and restated or replaced from time to time, the "**SGI Global Methodology**"). The SGI Global Methodology is published on the SGI website under the link "SGI Cross Asset Methodology" at https://sgi.sgmarkets.com. These Index Rules should be read together with the SGI Global Methodology.

Capitalized terms used but not defined herein shall have the respective meanings ascribed to such terms in the SGI Global Methodology.

In the event of any inconsistency between the SGI Global Methodology and the Index Rules, for purposes of the Index, the Index Rules will prevail.

The SGI Global Methodology notably includes important events applicable in respect of the Index Components selected in section 1.1 above.

The SGI Global Methodology is expected to be updated and revised from time to time where necessary or desirable, pursuant to legal developments and for the purpose of technical improvement. The Index Sponsor may also act in good faith and a commercially reasonable manner to amend the SGI Global Methodology in order to cure ambiguities, errors and omissions, if any, thereunder. SGI Global Methodology subsequently updated and revised shall be approved in accordance with the Index Sponsor's internal index procedures and published on the SGI website under the link "SGI Cross Asset Methodology" at https://sgi.sgmarkets.com and shall, upon such publication, apply to the Index and these Index Rules.

1.5 Technical Rectification of Index Rules

The Index Rules may be amended from time to time, consistent with the economic strategy of the Index, by the Index Sponsor acting in good faith and a commercially reasonable manner to cure ambiguities, errors and omissions.

For convenience, the Index Sponsor may from time to time replace a data provider, publisher or source of Market Data or Index Data (a "Data Provider"), provided that the relevant data content remains equivalent. In any case where the Index Sponsor reasonably determines that the replacement of a Data Provider is necessary or desirable whilst the data content may not remain strictly equivalent, the Index Sponsor shall select such replacement Data Provider (a) in a commercially reasonable manner; (b) consistent with the objectives of the Index; and (c) in compliance with the Index Sponsor's internal procedures for Index modification.

1.6 Information available on the SGI website

The Index Level (including the performance and volatility of the Index), further Index data, news, and important disclaimers relating to the Index are available on the SGI website at the following address: https://sgi.sgmarkets.com.

IMPORTANT:

The Index seeks to track the performance of hypothetical long positions in the Underlying Basket; however, the Index does not actually invest in or hold the Underlying Basket or any other instruments or securities comprising the Basket Components in the Underlying Basket. An investor in any product linked to the performance of the Index (if any) will have no rights whatsoever to any Basket Components or any other instruments or securities underlying the Index or the Basket Components. The Index is a statistical measure of the performance of a systematic model that aims to deliver a performance potentially equivalent to Basket Components while seeking to maintain relatively equal contributions of risk from each Basket Component; it is not an investment fund, pool or any other investment vehicle.

The strategy tracked by the Index is not guaranteed to be successful.

2 Index Rules:

2.1 Terms and definitions relating to Dates:

ACT(t-1,t)	means the number of calendar days between Calculation Date (t-1) (included) and Calculation Date (t) (excluded).
Calculation Date	means any Scheduled Calculation Date on which no Index Disruption Event exists.
N(t-1,t)	means the number of Calculation Dates between the Calculation Date (t-1) included and the Calculation Date (t) (excluded).
Rebalancing Date	means the third Calculation Date immediately following the Review Date.
Review Date	means the last Calculation Date of any calendar month.
Scheduled Calculation Date	means any day when all the Underlying SGI Indices are published on Bloomberg
$t_R(t)$	means the Rebalancing Date immediately preceding and including Calculation Date (t): $t_R(t) \leq t$.
$t_{Rev}(t)$	means the Review Date immediately preceding and including Calculation Date (t): $t_{Rev}(t) \leq t$.
Valuation Time	means 6:30 p.m. (New York time).
Basket Component Base Date, "t_{CB}"	means December 29th, 2018

2.2 Terms and definitions relating to the Index:

Aggregate Transaction Cost, "TC(t)"	means in respect of Calculation Date (t) the transaction costs as determined pursuant to the Index Rules set out in Section 2.15.
Index	means either the Index Net Total Return or the Index Excess Return.
Decrement, "D"	means 1% per annum
Index Back Test Start Date, "t_0"	March 5th, 2008.
Index Calculation Agent	Stoxx Limited, Zurich, Switzerland
Index Component	means any Basket Component and Market Data.
Index Currency	EUR ("Euro").
Index Excess Return	means the "Multi Asset Global Futures EUR Index (EUR – Excess Return)" (Bloomberg Ticker: IND1MAGF <Index>).
Index Launch Date, "t_L"	June 1st, 2018.

Index Level Excess Return, "ILER(t)"	means in respect of any Calculation Date (t), the level of the Index Excess Return calculated and published by the Index Calculation Agent on such date at the Valuation Time, pursuant to the Index Rules set out in Section 2.6.
Index Level Net Total Return, "ILNTR(t)"	means in respect of any Calculation Date (t), the level of the Index Net Total Return calculated and published by the Index Calculation Agent on such date at the Valuation Time, pursuant to the Index Rules set out in Section 2.6.
Index Scientific Committee	means the scientific committee comprising two (2) members of the Index Sponsor (including a managing director) and one (1) member of the Index Advisor.
Index Sponsor	Société Générale ("SG").
Underlying Basket	means the basket comprising the Basket Components specified in Appendix 1 and allocated according to the ERC Momentum Methodology.
Underlying Basket Level, "UBL(t)"	means in respect of Calculation Date (t), the level of the Underlying Basket determined pursuant to the Index Rules set out in Section 2.7.

2.3 Terms and definitions relating to the Vol Target Mechanism:

Exposure, "E(t)"	means in respect of any Calculation Date (t), the deemed exposure of the Index to the Underlying Basket determined in accordance with the formula set out in Section 2.14.
Historical Volatility, "HV(t)"	means in respect of a Calculation Date (t), the annualized historical volatility of the Notional Underlying Basket (t) over the past 20 Calculation Dates, determined by the Index Calculation Agent in accordance with the formula specified in Section 2.9.
Index Historical Volatility, "IHV(t)"	means, in respect of any Calculation Date (t), the annualized historical volatility of the Index determined over the past 125 Calculation Dates, determined by the Index Calculation Agent in accordance with the formula specified in section 2.12.
Notional Underlying Basket (t)	means in respect of a Calculation Date (t), the daily rebalanced theoretical basket of Basket Components as adjusted by the weights determined by the Index Calculation Agent according to the ERC Momentum Methodology on the Review Date immediately preceding (and excluding) such date.
Notional Underlying Basket Level, "NUBL(t_{ref},t)"	means in respect of Calculation Dates (t_{ref}) and (t), the level as of Calculation Date (t) of the Notional Underlying Basket (t_{ref}) determined pursuant to the Index Rules set out in Section 2.10.
Target Volatility, "TV"	6%.
Volatility Adjustment Factor	means in respect of any Calculation Date (t), the volatility adjustment

"VAF(t)"	factor based on the Index Historical Volatility and determined by the Index Calculation Agent in accordance with the formula specified in Section 2.14.

2.4 Terms and definitions relating to the Basket Components :

Basket Component	Any component of the Underlying Basket as provided in Appendix 1.
Basket Component Currency	means in respect of a Basket Component, its default currency as provided in Appendix 1.
Basket Component Level	means, in respect of a Calculation Date (t) and a Basket Component (i), the Fund Net Asset Value or the Closing Price of such Basket Component on such date.
Basket Component Level Net TR Euro, "$BCLNTRE_i(t)$"	means, in respect of a Calculation Date (t) and a Basket Component (i), the euro version of the Basket Component Level Net TR, pursuant to the Index Rules set out in Section 2.8.
Basket Component Return Type	means, in respect of a Basket Component, its return type as provided in Appendix 1.
Basket Component Target Weight, "$TW_i(t_{Rev})$"	means in respect of a Basket Component (i) and Calculation Date (t), the target weight (expressed in percentage) of such Basket Component in the Underlying Basket as determined by the Index Calculation Agent on the Review Date t_{Rev} immediately preceding (and including) such Calculation Date (t) pursuant to the Index Rules set out in section 3.
Basket Component Type	means, in respect of a Basket Component, its type as provided in Appendix 1.
Basket Component Weight, "$W_i(t)$"	means in respect of a Basket Component (i) and Calculation Date (t), the effective weight (expressed in percentage) of such Basket Component in the Underlying Basket as effective on such Calculation Date (t) and determined by the Index Calculation Agent pursuant to the Index Rules set out in section 2.12.
Closing Price, "$CP_i(t)$"	means, in respect of Calculation Date (t) and Basket Component (i): - in respect of an Underlying Index, the official closing level of the Underlying Index published and announced by its sponsor ; - in respect of an ETF, the official closing price of the ETF on the Exchange. or, in each case, the latest official closing price available on such date.
Exchange Business Day	means, in respect of each Basket Component, any Scheduled Trading Day on which each relevant Exchange and Related Exchange are open for trading during their respective regular trading sessions, notwithstanding any such Exchange or Related Exchange closing prior to its Scheduled Closing Time.

Exchange(s)	means, in respect of a Basket Component, each exchange or quotation system (if applicable) on which such Basket Component trade, any successor exchange or quotation system or any substitute exchange or quotation system to which trading in such Basket Component has relocated.
Hypothetical Replicating Party	means a hypothetical party taking positions in the Index Components for the purposes of replicating the performance of the Index.
Maximum Weight	means, in respect of a Basket Component (i), its Maximum Weight as provided in Appendix 1.
Related Exchange(s)	means, in respect of a Basket Component, each exchange or quotation system where trading has a material effect on the overall market for futures and options contracts relating to such Basket Component, any successor exchange or quotation system or any substitute exchange or quotation system to which trading in futures or options contracts relating to such Basket Component, has temporarily relocated.
Scheduled Closing Time	means in respect of an Exchange or Related Exchange, the scheduled weekday closing time of such Exchange or Related Exchange, without regard to after hours or any other trading outside of the regular trading session hours.
Scheduled Trading Day	means, in respect of a Basket Component, any day on which each Exchange and each Related Exchange for such Basket Component are scheduled to be open for trading for their respective regular trading sessions.
Fixed Replication Costs, "RC_i"	means, in respect of a Calculation Date (t) and a Basket Component (i), the fixed running costs associated with replicating the performance of the Underlying Basket or financing the holding of such Basket Component (i). The Replication Costs are calculated daily and accrued on a daily basis on the level or price of the Basket Components. The initial Replication Costs are provided in Appendix 1.
Fixed Transaction Costs, "C_i"	means, in respect of Basket Component (i), the execution costs related to the deemed purchase or liquidation of Basket Components pursuant to changes in allocations and rebalancings that impact the Index Level upon such reallocations and rebalancings. The Fixed Transaction Costs are provided in Appendix 1.
Underlying Index	means any Basket Component with a Basket Component Type specified as Index in Appendix 1.
Unit	means in respect of a Fund, a share or unit of such Fund.

2.5 Terms and definitions relating to the Market Data

Euribor Rate, "ER(t)" means in respect of any Calculation Date (t), the percentage rate of the 3-month EURIBOR rate as displayed under EUR003M <Index> Bloomberg page (or any successor service or page for the purpose of displaying such rate) or the latest percentage rate displayed under EUR003M <Index> Bloomberg page, if such percentage rate dated as of Calculation Date (t) is not available.

Forex, "FX(i,t)" means in respect of a Basket Component (i) and a Calculation Date (t), the foreign spot exchange rate to convert in the Index Currency one unit of the Basket Component Currency obtained using the ECB source on the Bloomberg page of such rate on such Calculation Date, or any successor service or page for the purpose of displaying such foreign spot exchange rate, as determined by the Index Calculation Agent after instruction from the Index Sponsor, or the latest foreign spot exchange rate available if no such rate is published as of such date.

Market Data means a rate (including an interest rate, a foreign exchange rate or a swap rate), a spread, or any other data specified in the Index Rules (including any rate specified in this section 2.5) or any other similar instrument specified herein.

2.6 Determination of the Index Level Net Total Return and the Index Level Excess Return:

The Index Level Net Total Return and the Index Level Excess Return are in respect of Calculation Date (t), calculated by the Index Calculation Agent at the Valuation Time, subject to the occurrence or existence of an Index Disruption Event or an Index Extraordinary Event, according to the following formula:

$$ILNTR(t) = ILNTR(t-1) \times \left[1 + E(t-1) \times \left(\frac{UBL(t)}{UBL(t-1)} - 1\right) + (1 - E(t-1)) \times ER(t-1) \times \frac{ACT(t-1,t)}{360}\right] \times \left(1 - D \times \frac{ACT(t-1,t)}{360}\right) - TC(t-1)$$

And,

$$ILER(t) = ILER(t-1) \times \left(\frac{ILNTR(t)}{ILNTR(t-1)} - ER(t-1) \times \frac{ACT(t-1,t)}{360}\right)$$

2.7 Determination of the Underlying Basket Level "UBL(t)":

The Underlying Basket Level is, in respect of Calculation Date (t), determined by the Index Calculation Agent in accordance with the following formula:

$$UBL(t) = UBL(t-1) \times \left[1 + \sum_{i=1}^{11} W_i(t-1) \times \left(\frac{BCLNTRE_i(t)}{BCLNTRE_i(t-1)} - 1\right)\right]$$

Where,

$UBL(t_0) = 1000$

2.8 Determination of the Basket Component Level Net TR Euro, "$BCLNTRE_i(t)$":

For any Calculation Date (t) and any Basket Component (i), the Basket Component Level Net TR Euro is determined as follows:

$$BCLNTRE_i(t) = BCLNTRE_i(t-1) \times \left[1 + \left(\frac{CP_i(t) + I_{PR}(i) \times Div_i(t)}{CP_i(t-1)} - RC_i \times \frac{Act(t-1,t)}{360} - 1\right) \times \frac{FX(i,t)}{FX(i,t-1)} + ER(t-1) \times \frac{ACT(t-1,t)}{360}\right]$$

2.9 Determination of the Historical Volatility "HV(t)":

The Historical Volatility of the Notional Underlying Basket is, in respect of Calculation Date (t), determined by the Index Calculation Agent in accordance with the following formula, which :

$$HV(t) = \sqrt{\frac{1}{20} \times \sum_{k=0}^{19} \left(\frac{365}{ACT(t-k-3,t-k)} \times ln\left(\frac{NUBL(t,t-k)}{NUBL(t,t-k-3)}\right)^2\right)}$$

Where,

"ln" means the logarithm to the base e.

2.10 Determination of the Notional Underlying Basket Level "NUBL(t,t-k)":

The Notional Underlying Basket Level NUBL(t,t-k) is calculated by the Index Calculation Agent on every Calculation Date in accordance with the following formula:

For any k>0:

$$NUBL(t,t-k) = NUBL(t,t-k-1) \times \left[1 + \sum_{i=1}^{11} W_i(t+2) \times \left(\frac{BCLNTRE_i(t-k)}{BCLNTRE_i(t-k-1)} - 1\right)\right]$$

With,

$$NUBL(t,t) = 1000$$

2.11 Determination of the Basket Component Weight "$W_i(t)$":

For any Calculation Date (t) and any Basket Component (i), the Basket Component Weight is determined as follows:

If $t_R(t) \leq t \leq t_R(t)+4$:

$$W_i(t) = W_i(t-1) + \frac{TW_i(t_{Rev}(t)) - W_i(t_{Rev}(t)-1)}{5}$$

Otherwise

$$W_i(t) = W_i(t-1)$$

2.12 Determination of the Index Historical Volatility "IHV(t)":

The Index Historical Volatility is, in respect of Calculation Date (t), determined by the Index Calculation Agent in accordance with the following formula:

For any Calculation Date $t \geq t_0+3$:

$$IHV(t) = \sqrt{\frac{1}{\alpha(t)-2} \times \sum_{k=0}^{\alpha(t)-3} \left(\frac{365}{ACT(t-k-3,t-k)} \times ln\left(\frac{ILNTR(t-k)}{ILNTR(t-k-3)}\right)^2\right)}$$

Where,

$\alpha(t) = MIN\ (N(t_0,t); 125)$, and

"ln" means the logarithm to the base e.

2.13 Determination of the Volatility Adjustment Factor "VAF(t)":

The Volatility Adjustment Factor is, in respect of Calculation Date (t), determined by the Index Calculation Agent in accordance with the following formula:

a) For any Calculation Date $t > t_0+2$,:

$$VAF(t) = MIN\left[120\%; MAX\left[80\%; \sqrt{MAX\left[0; 1 + \frac{\alpha(t)}{125} \times \left(1 - \left(\frac{IHV(t)}{TV}\right)^2\right)\right]}\right]\right]$$

Where,

$$\alpha(t) = MIN\ (N(t_0, t); 125)$$

b) For any Calculation Date on or before the Index Launch Date ($t \leq t_0+2$) :

$$VAF(t) = 1$$

2.14 Determination of the Exposure "E(t)":

The Exposure is, in respect of Calculation Date (t), determined as follows:

$$E(t) = E(t-1) + MIN\left[10\%; MAX[-10\%; TE(t) - E(t-1)]\right]$$

Where,

$$TE(t) = MIN\left[\frac{TV}{HV(t-2)} \times VAF(t-2); 150\%\right]$$

With,

$$E(t_0) = TE(t_0)$$

2.15 Determination of the Aggregate Transaction Cost, "TC(t)":

The Aggregate Transaction Cost in respect of a Calculation Date (t) is determined as follows:

$$TC(t) = \sum_{i=1}^{11} C_i \times ABS\left(ILNTR(t) \times E(t) \times Wi(t) - ILNTR(t-1) \times E(t-1) \times Wi(t-1) \times \frac{CP_i(t) \times FX(i,t)}{CP_i(t-1) \times FX(i,t-1)}\right)$$

Where

$TC(t) = 0$ for any Calculation Date $t \leq t_0$.

3 Determination of the Basket Components Target Weights

3.1 Weights Optimization

3.1.1. General Principle

The Underlying Basket is constructed based on the Equal-Risk Contribution methodology and a momentum filter developed by the Index Sponsor. The risk-based portfolio (the "ERC Portfolio") is optimized via an equal-risk contribution approach in order to find a risk-balanced allocation such that the risk contribution of each asset in the portfolio is equal. The final composition of the Underlying Basket is further optimized based on the ERC Portfolio and a trend following analysis, whereby the past best (resp. worst) performing constituents tend to be overweighed (resp. underweighted) compared to the ERC Portfolio under the certain constraints as displayed hereunder (such basket construction process, the "ERC Momentum Methodology"). The composition of the Underlying Basket shall be implemented on the close of the subsequent Rebalancing Date, effective on the immediately following Scheduled Calculation Date.

3.1.2. Determination of the Covariance Matrix

The Covariance Matrix is computed on the Review Date (t_{Rev}) using 3-day returns for each Underlying Basket Component over the last 262 trading days according to the following formula:

$$\sum(i,j,t_{Rev}) = \frac{1}{262} \times \sum_{k=0}^{261} \left(r_i(t_{Rev}-k) - \overline{r_i(t_{Rev})}\right) \times \left(r_j(t_{Rev}-k) - \overline{r_j(t_{Rev})}\right)$$

where,

$$r_i(t_{Rev}-k) = \sqrt{\frac{365}{ACT(t_{Rev}-k-3, t_{Rev}-k)}} \times ln\left(\frac{BCLNTRE_i(t_{Rev}-k)}{BCLNTRE_i(t_{Rev}-k-3)}\right)$$

and,

$$\overline{r_i(t_{Rev})} = \frac{1}{262} \times \sum_{k=0}^{261} r_i(t_{Rev}-k)$$

3.1.2. Determination of the ERC Portfolio Weights

The ERC Portfolio weights are determined on the Review Date (t_{Rev}) such that the risk contribution of each Underlying Basket Component should be equal under the following constraints:

- the weighting of each Underlying Basket Component shall be strictly positive
- the sum of the weightings of the portfolio constituents must be equal to 1

The ERC Portfolio weights are the solution of the following optimization program:

$$X^{ERC}(t_{Rev}) = \underset{x}{\text{Argmin}} \sum_{i=1}^{11}\sum_{j=1}^{11} \left(X_i\left(\sum X\right)_i - X_j\left(\sum X\right)_j\right)^2$$

Under the constraints:

$$\begin{cases} {X^{ERC}}_i > 0 \quad for\ i = 1,2,\dots,11 \\ \sum_{i=1}^{11} {X^{ERC}}_i = 1 \end{cases}$$

with,

∑ means the Covariance Matrix on the Review Date (t_{Rev}).
The optimization shall start with an equally weighted portfolio.

3.2 Underlying Basket Composition

A momentum filter is added to the ERC Portfolio to get the final portfolio (the "**Optimized Portfolio**"). The weight of each Underlying Basket Component used on the relevant Review Date to constitute the Optimized Portfolio will be determined under the following constraints:

- the weighting of each Underlying Basket Component must be strictly positive
- the sum of the weightings of the Underlying Basket Components must be equal to 1
- the weighting of each Underlying Basket Component must not exceed the Maximum Weight (as defined in Appendix 1)
- the tracking error of the resulting allocation vs the ERC Portfolio shall remain close to or below 3%

The Underlying Basket Component Weights are the solution of the following optimization program:

$$\omega(t_{Rev}) = \underset{\omega}{\text{Argmax}} \sum_{i=1}^{11} \omega(i) \times \mu(i, t_{Rev})$$

Under the constraints:

$$\begin{cases} \omega(i) > 0 \quad for\ i = 1,2,\dots,11 \\ \omega(i) \leq Max\ Weight(i) \quad for\ i = 1,2,\dots,11 \\ \sum_{i=1}^{11} \omega(i) = 1 \\ \sqrt{\left(\omega - X^{ERC}(t_{Rev})\right)^T \sum \left(\omega - X^{ERC}(t_{Rev})\right)} \leq 3\% \end{cases}$$

with,

$$\mu(i, t_{Rev}) = \frac{BCLNTRE_i(t_{Rev})}{BCLNTRE_i(t_{Rev} - 262)} - 1$$

∑ means the Covariance Matrix on the Review Date (t_{Rev}).

The Target Weight of any Underlying Basket Component (i) used on the relevant Review Date (t_{Rev}) to constitute the Underlying Basket will be determined as follows:

$$TW(i, t_{Rev}) = \omega(i, t_{Rev})$$

The composition of the Underlying Basket shall be implemented on the close of the subsequent Rebalancing Date, effective on the immediately following Scheduled Calculation Date.

Disclaimers

The Multi Asset Global Futures EUR Index is calculated and maintained by STOXX Limited, Zurich, Switzerland, specifically for SG.

Multi Asset Global Futures EUR Index

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Appendix 1

(i)	Basket Component	RIC	Ticker	Basket Component Currency	Basket Component Type	Index Component Type	RC_i	C_i	Maximum Weight	Basket Component Return Type
1	SGI Long Gilt	SGIXGILT	SGIXGILT Index	GBP	Underlying SGI Index	Debt Instrument	0.12%	0.02%	30%	ER
2	SGI- 10 Y JGB (JPY - ER)	SGIXJB10	SGIXJB10 Index	JPY	Underlying SGI Index	Debt Instrument	0.12%	0.02%	30%	ER
3	SGI - 10y US Treasury	SGIXTY10	SGIXTY10 Index	USD	Underlying SGI Index	Debt Instrument	0.15%	0.02%	30%	ER
4	SGI-Euro Bund	SGIXRX	SGIXRX Index	EUR	Underlying SGI Index	Debt Instrument	0.10%	0.02%	30%	ER
5	SGI Gold Static Roll	SGICGCSR	SGICGCSR Index	USD	Underlying SGI Index	Commodity Instrument	0.15%	0.01%	10%	ER
6	Brent Crude Oil Benchmark Excess Return Index	SGICBRB	SGICBRB Index	USD	Underlying SGI Index	Commodity Instrument	0.15%	0.01%	10%	ER
7	SGI CrudeOil Static Roll	SGICCLSR	SGICCLSR Index	USD	Underlying SGI Index	Commodity Instrument	0.15%	0.01%	10%	ER
8	SGI Futures Series - US Equity Index (USD - Excess Return)	SGBVRSP1	SGBVRSP1 Index	USD	Underlying SGI Index	Equity Instrument	0.08%	0.01%	30%	ER
9	SGI Futures Series - European Large Cap Equity Index (EUR - Excess Return)	SGBVRVG1	SGBVRVG1 Index	EUR	Underlying SGI Index	Equity Instrument	0.16%	0.02%	30%	ER
10	SGI Futures Series - UK Equity Index (GBP - Excess Return)	NA	SGBVRZ1 Index	GBP	Underlying SGI Index	Equity Instrument	0.16%	0.02%	30%	ER
11	SGI Futures Series - Japan Equity Index (JPY - Excess Return)	SGBVRNK1	SGBVRNK1 Index	JPY	Underlying SGI Index	Equity Instrument	0.16%	0.02%	30%	ER