

GUIDELINE

Solactive Balanced Global Funds Decrement Index

Version 1.0 dated August 15th, 2018



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This document contains the underlying principles and regulations regarding the structure and the operating of the Solactive Balanced Global Funds Decrement Index ("the Index"). Solactive AG shall make every effort to implement regulations. Solactive AG does not offer any explicit or tacit guarantee or assurance, neither pertaining to the results from the use of the Indices nor the Index values at any certain point in time nor in any other respect. The Indices are merely calculated and published by Solactive AG and it strives to the best of its ability to ensure the correctness of the calculation. There is no obligation for Solactive AG – irrespective of possible obligations to issuers – to advise third parties, including investors and/or financial intermediaries, of any errors in the Index. The publication of the Index by Solactive AG is no recommendation for capital investment and does not contain any assurance or opinion of Solactive AG regarding a possible investment in a financial instrument based on these Indices.

Introduction

This document is to be used as a guideline with regard to the composition, calculation and management of the Solactive Balanced Global Funds Decrement Index. Any changes made to the guideline are initiated by the Committee specified in section 1.6 of this document. The Index is calculated and published by Solactive AG. The name “Solactive” is copyrighted.

1 Index specifications

The Solactive Balanced Global Funds Decrement Index is calculated and distributed by Solactive AG.

The Index consists of two layers, the Fund Basket Index and a Volatility Control Index on top of the Fund Basket Index (in the following “the Index”), combining the Fund Basket Index with a volatility control mechanism. The Index is designed to capture the evolution of price movements of a monthly rebalanced basket of funds, achieving a certain level of volatility in the Index. This is done by dynamically allocating to the Fund Basket and a hypothetical money market position (the Cash Asset) depending on the level of volatility in the Fund Basket.

The Index is calculated and published in USD.

1.1 Short name and ISIN

The Index is distributed under the following identifiers:

Name	ISIN	WKN	Characteristic	BBG
Solactive Balanced Global Funds Decrement Index	DE000SLA56Z3	SLA56Z	Volatility Target	SOBGFDVT Index

1.2 Initial value

The Index is launched with a level of 1000 at the close on the start date, March 7th 2013. The Fund Basket Index is based on 1000 at the close of trading on the Fund Basket Start Date, 30th November 2012.

1.3 Distribution

The Index is published via the price marketing services of Boerse Stuttgart AG and are distributed to all affiliated vendors. Each vendor decides on an individual basis as to whether he will distribute/display the Solactive Balanced Global Funds Decrement Index via his information systems.

1.4 Prices and calculation frequency

The price of the Index is calculated for each Business Day based on the Net Asset Values of the relevant Fund Basket Components. The most recent Net Asset Values of all Index Components are used. Net Asset Values of Index Components not listed in the Index Currency are translated into the Index Currency by the application of a simulated currency hedge mechanism, using the levels of hypothetical money markets and WMCO 4pm London fixings.

The price of the Index on Business Day t is calculated every Business Day following such Business Day t . In the event that data cannot be provided to Reuters or to the pricing services of Boerse Stuttgart AG the Index cannot be distributed.

1.5 Weighting

On each Business Day, each Index Component of the Index is weighted according to the methodology as outlined in Section 2.1.

1.6 Decision-making bodies

A Committee composed of staff from Solactive is responsible for decisions regarding the composition of the Index as well as any amendments to the rules (in this document referred to as the "Committee" or the "Index Committee"). The future composition of the Index is determined by the Committee on the Selection Days according to the procedure outlined in 2.1 of this document. The Committee shall also decide about the future composition of the Index, if any Extraordinary Events should occur and the implementation of any necessary adjustments.

Members of the Committee can recommend changes to the guideline and submit them to the Committee for approval.

1.7 Publication

All specifications and information relevant for calculating the Index are made available on the <http://www.solactive.de> web page and sub-pages.

1.8 Historical data

Historical data will be maintained from the launch of the Index on 15th August 2018.

1.9 Licensing

Licences to use the Index as the underlying for investment products issued by stock exchanges, banks, financial services providers, financial institutions and investment houses or for benchmark usage are granted by Solactive AG.

2 Composition of the Index

2.1 Selection of the Index Components

The initial composition of the Index as well as any ongoing adjustment is based on the following rules, which are described separately for the Fund Basket Index and the Index.

2.1.1 Selection of the Index Components for the Fund Basket Index

The Fund Basket Components (as defined in Section 4) are transformed to the Index Currency on each Business Day t according to the following methodology:

$$P_{i,t}^{USD} = P_{i,t-1}^{USD} * \left(\frac{MM_t^{USD}}{MM_{t-1}^{USD}} - \frac{MM_t^{EUR}}{MM_{t-1}^{EUR}} * \frac{FX_t}{FX_{t-1}} + \frac{P_{i,t}}{P_{i,t-1}} * \frac{FX_t}{FX_{t-1}} \right)$$

where:

on the index start date: $P_{i,0}^{USD} = 100$

Subscript (i) refers to the relevant Asset;

Subscript (t) refers to the given Asset Business Day

$P_{i,t}^{USD}$: The USD price of Fund Basket Component i on Business Day t

$P_{i,t}$: The Net Asset Value of Fund Basket Component i on Business Day t

MM_t^{USD} : The level of the US-Dollar Money Market Asset on Business Day t

MM_t^{EUR} : The level of the Euro Money Market Asset on Business Day t

FX_t : The 4pm London fixing exchange rate as provided by WMCO to convert one unit of EUR into USD on Business Day t

The level of the US-Dollar Money Market on a USD Overnight Interest Rate Business Day R_t^{USD} is calculated according to the following formula:

$$MM_{R_t^{USD}}^{USD} = MM_{R_{t-1}^{USD}}^{USD} * \left(1 + rate_{R_{t-1}^{USD}}^{USD} * \frac{DC_{R_{t-1}^{USD}, R_t^{USD}}}{360} \right)$$

where:

on the index start date: $MM_{R_0^{USD}}^{USD} = 100$

$rate_{R_{t-1}^{USD}}^{USD}$: The USD overnight rate on the USD Overnight Interest Rate Business Day R_{t-1}^{USD}

R_{t-1}^{USD} : The USD Overnight Interest Rate Business Day as defined in Section 4 immediately preceding R_t^{USD}

$DC_{R_{t-1}^{USD}, R_t^{USD}}$: The number of calendar days between R_t^{USD} (including) and R_{t-1}^{USD} (excluding). For the avoidance of doubt the number of calendar days is always equal to or greater than zero.

The level of the Euro Money Market on EUR Overnight Interest Rate Business Day R_t^{EUR} is calculated according to the following formula:

$$MM_{R_t^{EUR}}^{EUR} = MM_{R_{t-1}^{EUR}}^{EUR} * \left(1 + rate_{R_{t-1}^{EUR}}^{EUR} * \frac{DC_{R_{t-1}^{EUR}, R_t^{EUR}}}{360} \right)$$

where:

on the index start date $MM_{R_0^{EUR}}^{EUR}=100$

$rate_{R_{t-1}^{EUR}}^{EUR}$: The EUR overnight rate on the EUR Overnight Interest Rate Business Day R_{t-1}^{EUR}

R_{t-1}^{EUR} : The EUR Overnight Interest Rate Business Day as defined in Section 4 immediately preceding R_t^{EUR}

$DC_{R_{t-1}^{EUR}, R_t^{EUR}}$: The number of calendar days between R_t^{EUR} (including) and R_{t-1}^{EUR} (excluding). For the avoidance of doubt the number of calendar days is always equal to or greater than zero.

2.1.2 Selection of the Index Components for the Index

The Index holds hypothetical positions in the Fund Basket Index and a Cash Asset (as defined in Section 3.1.2) to achieve a target volatility of 3.5%, as defined below in more detail.

The Realised exposure to the Fund Basket Index, exp_t^{real} , is calculated as:

On the Index Start Date:

$$exp_0^{real} = 100$$

On the Business Day t immediately following the Index Start Date:

$$exp_1^{real} = exp_0^{real} * \frac{FundBasket_t}{FundBasket_{t-1}}$$

On all Business Days t following the Business Day immediately following the Index Start Date:

$$exp_t^{real} = exp_{t-1}^{Target} * Index_{t-1} * \frac{FundBasket_t}{FundBasket_{t-1}}$$

The Target Exposure on Business Day t, exp_t^{Target} , is calculated according to the following formula:

$$exp_t^{Target} = \min \left(maxLev, \frac{TargetVol}{RealVol_t} \right)$$

where:

$maxLev$: The maximal leverage which is equal to 150%

$TargetVol$: The target volatility which is equal to 3.5%

On the Index Start Date, The Target Exposure exp_0^{Target} is set to 1.

The return of the fund Basket on Business Day t is defined as:

$$r_t = \ln \left(\frac{FundBasket_t}{FundBasket_{t-1}} \right)$$

The realized volatility on business day t is calculated according to the below formula:

$$realVol_t = \sqrt{\frac{252}{59} * \sum_{i=0}^{59} \left(r_{t-i} - \frac{1}{60} \sum_{j=0}^{59} r_{t-j} \right)^2}$$

2.2 Ordinary adjustment

The composition of the Fund Basket Index is adjusted each Rebalancing Day in accordance with the description in Section 2.1.1.

The composition of the Index is adjusted on every Business Day in accordance with the description in Section 2.1.2.

2.3 Extraordinary adjustment

Not applicable.

3 Calculation of the Index

3.1 Index formula

3.1.1 Index formula for the Fund Basket Index

The Fund Basket Index is an index whose value on Business Day t is equivalent to the sum over all Fund Basket Components of the products of (a) the Number of Shares of the Fund Basket Component on Business Day t-1 and (b) the price of the Fund Basket Component transformed to the Index Currency on Business Day t. Additionally a cash asset is used to resemble the overdraft or deposit of the remaining cash amount after the rebalance.

As a formula:

$$FundBasket_t = \sum_{i=1}^6 NOSH_{i,t-1} * P_{i,t}^{USD} + NOSH_{C,t-1} * CA_t$$

on the **Fund Basket Start Date** : $FundBasket_0=100$

Where:

The number of shares of Fund Index Component i, $NOSH_{i,t}$ held by the Fund Basket Index on Business Day t is calculated according to the following formula:

If Business Day t is a Fund Basket Rebalancing Day, as defined in Section4:

$$NOSH_{i,t} = w * \frac{FundBasket_{t-1}}{P_{i,t-1}^{USD}}$$

if Business Day t is not a Fund Basket Rebalancing Day, as defined in Section4:

$$NOSH_{i,t} = NOSH_{i,t-1}$$

if Business Day t is the **Fund Basket Start Date**, $NOSH_{i,t}=w$

Where:

$NOSH_{i,t}$: the number of shares of Fund Index Component i held by the Fund Basket Index on Business Day t

w: 1/6 for all Fund Basket Components; such that the Basket is rebalanced to an equal weighted allocation

$FundBasket_t$: The level of the Fund Basket Index (as described in Section 3.1.1) on Business Day t

$P_{i,t}^{USD}$: The level of Fund Basket Component i transformed to the Index Currency as defined per section 2.1.1.

The number of units of the cash asset, $NOSH_{C,t}$ is calculated as:

If Business Day t is a Fund Basket Rebalancing Day, as defined in Section4:

$$NOSH_{C,t} = \frac{FundBasket_t - \sum_{i=1}^6 NOSH_{i,t} * P_{i,t}^{USD}}{CA_t}$$

if Business Day t is not a Fund Basket Rebalancing Day, as defined in Section4:

$$NOSH_{C,t} = NOSH_{C,t-1}$$

if Business Day t is the **Fund Basket Start Date**, $NOSH_{C,t}=0$

3.1.2 Index formula for the Index

The Index is calculated on Business Day t according to the following formula:

$$Index_t = Index_{t-1} + \left(\frac{FundBasket_t}{FundBasket_{t-1}} - \frac{CA_t}{CA_{t-1}} \right) * exp_{t-1}^{real} - Index_{t-1} * ID * \frac{DC_{t-1,t}}{365}$$

Where:

on the Index Start Date: $Index_0=1000$

CA_t : The Cash Asset on Business Day t

ID : The Index Deduction Rate of 1% per annum

and using the definitions from Section 2.1.2

3.1.2 Formula for the Cash Asset

The Cash Asset on Calculation Day t is calculated according to the following formula:

On the Index Start Date, the Cash Asset has a value of $CA_0=100$.

On each USD Overnight Interest Rate Business Day R_t^{USD} following the Index Start Date, the Cash asset is calculated according to:

$$CA_{R_t^{USD}} = CA_{R_{t-1}^{USD}} * \left(1 + rate_{R_{t-1}^{USD}}^{USD} * \frac{DC_{R_{t-1}^{USD}, R_t^{USD}}}{360} \right)$$

3.2 Precision

The Index Level will be calculated and published with rounding to [2] decimal places.

The Number of Shares of the Index Components will be rounded to 4 decimal places.

Net Asset Values will be rounded to four decimal places.

3.3 Adjustments

Not applicable.

3.4 Dividends and other distributions

Not applicable.

3.5 Corporate actions

Not applicable.

3.6 Recalculation

Solactive AG makes the greatest possible efforts to accurately calculate and maintain its indices. However, the occurrence of errors in the index determination process cannot be ruled out. In such cases Solactive AG strictly adheres to its publicly available [Correction Policy](#).

For the avoidance of doubt in case a recalculation is needed, or a Fund Asset Net Asset Value (NAV) is restated, the Fund Basket value and Index value will be adjusted. However, historically calculated *NOSH* and exp_t^{real} values will not be affected, in line with the publicly available Correction Policy.

3.7 Market Disruption

Market Disruption Event: Any failure in the publication of the NAV of a Fund Basket Component by the Fund Service Provider, by the cut-off time specified in the Fund Basket Component Offering Memorandum.

Market Disruption Event End Date: The Business Day on which the relevant Market Disruption Event ceases to exist. If the valuation is not available for any of the days during which a Market Disruption event was active, those days will be treated as additional Holiday and will not be treated as a Business Day as defined in section 4.

Consequences of a Fund Market Disruption Event: On any Business Day on which there is a Market Disruption Event in existence the Fund Index shall not be published.

4. Definitions

“Fund Basket Component” is one of the following six securities:

Constituent	Name	ISIN	Lipper	BBG	Currency	Jurisdiction
1	Amiral Gestion – SEXTANT GRAND LARGE – A Units	FR0010286013	LP60086642	AMSEGLA FP Equity	EUR	France
2	Old Mutual Global Investors Series Plc. - Old Mutual Global Equity Absolute Return Fund - A (EUR) Hedged Accumulation	IE00BLP55460	LP68263283	OMEAHA ID Equity	EUR	Ireland
3	BlackRock Global Funds - Euro Corporate Bond Fund - Class A2 EUR	LU0162658883	LP60081731	MLCORA2 LX Equity	EUR	Luxembourg
4	Candriam Bonds - Candriam Bonds Euro High Yield - Class Classique Capitalisation shares	LU0012119607	LP60000767	CHK3371 LX Equity	EUR	Luxembourg
5	Schroder International Selection Fund - Schroder International Selection Fund EURO High Yield - Class A Accumulation EUR	LU0849399786	LP68175976	SCIEHYA LX Equity	EUR	Luxembourg
6	Nordea 1, SICAV – Nordea 1 European High Yield Bond Fund - BP-EUR Share Class	LU0141799501	LP65022840	NIMEHEU LX equity	EUR	Luxembourg

“EURO overnight rate” is the following security:

EURO Overnight EONIA (RIC: EONIA=, BBG: EONIA Index)

“USD overnight rate” is the following security:

US Fed Funds Effective Rate (RIC: USONFFE=, BBG: FEDL01 Index)

The “Net Asset Value” of a Fund Basket Component on a Business Day shall be the net asset value per share of such Fund Asset as reported by the Fund Asset or its relevant service provider with respect to such day (or any successor thereto)

A “Business Day” is a day which is a Business Day in New York and London, where all Fund Basket Components are scheduled to publish a Net Asset Value as defined above and which is both an EUR Overnight Interest Rate Business Day and an USD Overnight Interest Rate Business Day.

A “Weekday” is each day of the week except Saturday and Sunday.

A “EUR Overnight Interest Rate Business Day” is each day on which the EURO overnight rate is published (that is, a Weekday which is not a Target 2 holiday).

A “USD Overnight Interest Rate Business Day” is each day on which the USD overnight rate is published (that is, a business day in New York).

A “USD Business Day” is each day on which the USD Cash Asset Rate is published.

“Fund Basket Start Date” is 30th November 2012.

“Fund Basket Rebalancing Day” is the last business day of each month, from and including the Fund Basket start Date

“Index Start Date” is 7th March 2013.

The **“Index Calculator”** is Solactive AG or any other appropriately appointed successor in this function.

The **“Index Currency”** is USD.

5 Appendix

5.1 Contact data

Solactive AG

Guiollettstr. 54

60325 Frankfurt am Main

Phone: +49 (0) 69 719 160 22

FAX: +49 (0) 69 719 160 25

E-Mail: complex@solactive.com

5.2 Calculation of the Index – change in calculation method

The application by the Index Calculator of the method described in this document is final and binding. The Index Calculator shall apply the method described above for the composition and calculation of the Index Series. However, it cannot be excluded that the market environment, supervisory, legal, financial or tax reasons may require changes to be made to this method. The Index Calculator may also make changes to the terms and conditions of the Indices and the method applied to calculate the Indices, which he deems to be necessary and desirable in order to prevent obvious or demonstrable error or to remedy, correct or supplement incorrect terms and conditions. The Index Calculator is not obliged to provide information on any such modifications or changes. Despite the modifications and changes the Index Calculator will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.