Guideline relating to

Solactive USD High Yield Corporates Total Market Low Beta Index

Version 1.1 dated July 26th 2018

Contents

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Introduction

This document is to be used as a guideline with regard to the composition, calculation and management of the Solactive USD High Yield Corporates Total Market Low Beta Index. Any changes made to the guideline are initiated by the Committee specified in section 1.6. The Solactive USD High Yield Corporates Total Market Low Beta Index is the sole property of Solactive AG. The Solactive USD High Yield Corporates Total Market Low Beta Index is calculated and published by Solactive AG. The name "Solactive" is copyrighted.

1 Index specifications

The Solactive USD High Yield Corporates Total Market Low Beta Index is a rules-based, market value weighted index engineered to mirror the performance of the lower yielding segment of the High Yield rated corporate bond market issued in USD. The issuers' domicile is not relevant. The Solactive USD High Yield Corporates Total Market Low Beta Index is a Total Return Index, i.e. coupon payments will be reinvested in the index on each Adjustment day.

1.1 Name and ISIN

The Solactive USD High Yield Corporates Total Market Low Beta Index is distributed under ISIN DE000SLA3ZF3; the WKN is SLA3ZF. The Index is published in Reuters under the code ".SOLHYCLB" and in Bloomberg under the code "SOLHYCLB Index".

1.2 Initial value

The index will be calculated every Business Day starting on the 14th of November 2017. Before this date the index values are backfilled until the 30th of December 2011, with the index value based on 1000 as at the close of trading on the 31st of August 2016.

1.3 Distribution

The Solactive USD High Yield Corporates Total Market Low Beta Index is published via the price marketing services of Boerse Stuttgart AG and is distributed to all affiliated vendors.

1.4 Prices and calculation frequency

The Solactive USD High Yield Corporates Total Market Low Beta Index is calculated based on the Evaluated Bid Price (see 4.2 Further Definitions) of the respective Index Components, whereas newly added bonds are added at the Evaluated Ask Price. The index is calculated and distributed once every Business Day. Bond and index analytical values are calculated each Business Days using the Last Evaluated Price.

Updated index values and other statistics will not be distributed. In the event that the data required for index calculation purposes is not available or that there are troubles regarding the price marketing of Solactive AG or Stuttgart Stock exchange the index cannot be distributed.

1.5 Weighting

The Index Components are weighted according to their respective Market Values in proportion to the aggregated Market Value of all Index Components in the index. At the respective Selection Day prior to the Adjustment Day, issuer weights are capped at 3%. Excess weights will be redistributed on a pro rata basis among issuers whose weights are less than 3%. The process is iterated until no issuer has a weight higher than 3%. The resulting weights are referred to as final issuer capped weight.

1.6 Decision-making bodies

A Committee composed of staff from Solactive AG is responsible for decisions regarding the composition of the Solactive USD High Yield Corporates Total Market Low Beta Index, as well as any amendments to the rules (hereinafter referred to as the "**Committee**" or the "**Index Committee**"). The Committee will also determine the future composition of the Solactive USD High Yield Corporates Total Market Low Beta Index if any Extraordinary Event (see chapter 2.3) occurs, as well as the implementation of any necessary adjustments.

Members of the Committee can recommend at any time changes to the composition of the Index or to the guideline and submit them to the Committee for approval. Any change of the guideline will be announced on the web page http://www.solactive.com.

1.7 Publication

All specifications and information relevant for calculating the index are made available on the http://www.solactive.com web page and sub-pages.

1.8 Historical data

Historical data will be maintained from the 30th of December 2011.

1.9 Licencing

Licences to use the index as the underlying value for derivative instruments are issued to stock exchanges, banks, financial services providers and investment houses by Solactive AG.

2 Composition of the Index

2.1 Selection of the Index Components

At the launch of the index, all financial instruments which meet the requirements of the Selection Pool are eligible for inclusion in the index. Instruments issued prior to the Selection Day and which meet the criteria of the Selection Pool as defined under 4.1 will be added on the monthly Adjustment Day to the Selection Pool. Additionally, on the monthly Selection Day, the Index Committee will evaluate whether all current Index Components still meet the requirements of the Selection Pool. Any Index Components that do not pass this screen will be removed from the Index on the next Adjustment day.

Extraordinary adjustments are possible as described under 2.3.

2.2 Ordinary adjustment

The composition of the index is ordinarily reviewed on the Selection Day. Any change to the index will be implemented on the Adjustment Day.

2.3 Extraordinary adjustment

The Index Committee will decide about the future composition and the implementation of any necessary adjustments of the Solactive USD High Yield Corporates Total Market Low Beta Index if an Extraordinary Event (early redemption, credit event etc.) affecting one or more index constituents occurs. See details under 3.3 Adjustments

The Index Committee will decide on the future composition of the Solactive USD High Yield Corporates Total Market Low Beta Index as well as the Business Day which marks the starting of the new adjusted index composition.

3 Calculation of the Index

3.1.1 Index formula

The Solactive USD High Yield Corporates Total Market Low Beta Index is an index whose value reflects the relative changes in bond values. Therefore, the composition and weighting is adjusted every month.

As a formula:

$$Index_t = Index_n \frac{MarketValue_t + PaidCash_t}{BaseValue_n}$$

$$MarketValue_t = \sum_{i=1}^{a} (Dirty\,\mathrm{Price}_{i,t} + CPAdj_{i,t}) \cdot Amount_{i,n} \cdot Capfactor_{i,rb}$$

$$PaidCash_t = \sum_{i=1}^{a} Coupon_{i,t} \cdot Amount_{i,n} \cdot Capfactor_{i,rb}$$

$$BaseValue_n = \sum_{i=1}^{a} (Dirty\,\mathrm{Price}_{i,n} + CPAdj_{i,t}) \cdot Amount_{i,n} \cdot Capfactor_{i,rb}$$

Whereas:

$Index_t$	= Value of the index on Business Day t.
$Index_n$	= Value of the index on the last Adjustment Day n.
$\mathrm{CPAdj}_{i,t}$	= Variable Coupon Adjustment Factor i on Business Day t is 0 if a bond enters the index during an ex-dividend period. If the bond is already in the index during the ex-dividend period, the Variable Coupon Adjustment Factor equals the coupon amount.
$Dirty\,\mathrm{Price}_{i,t}$	= Dirty Price of the bond i on Business Day t, whereas Dirty Price t is the sum of the clean price of the bond i on Business Day t and the accrued interest on Business Day t.
$Dirty\,\mathrm{Price}_{i,n}$	= Dirty Price of the bond i on the last Adjustment Day n, whereas Dirty Price is the sum of the clean price of the bond i on the last Adjustment Day n and the accrued interest on the last Adjustment Day n.
$Amount_{i,n}$	= Amount Outstanding of the respective bond as defined on the last Adjustment Day n.
$PaidCash_t$	= a) Value of the coupon payments between Adjustment Days. b) If a bond i will be removed from the index between Adjustment Days, the resulting payment of the bond will be included in the Paid Cash component of the index. On the next Adjustment Day "Paid Cash" will be reinvested in the index.
$Coupon_{i,t}$	= Coupon payment of bond i between payment date and Adjustment Day n. In case there is no coupon payment, Coupon i,t is 0.
$Capfactor_{i,rb}$	= Weighting Cap Factor of portfolio component i determined on Selection day rb, to cap the weighting as described under Index Weighting

3.2 Accuracy

The value of the index will be rounded to two decimal places.

According to the terms of the bond, the Index Calculator will take the following conventions into account:
Act/Act
Act/360
Act/365
30/360
ISMA 30/360

The index does not take taxes into account and assumes gross coupon payments.

Accrued interests are calculated with settlement convention t+0.

3.3 Adjustments

Indices need to be adjusted for systematic changes in prices once these become effective. The Committee will decide from time to time if the Solactive USD High Yield Corporates Total Market Low Beta Index needs to be adjusted.

The following corporate actions will result in changes or adjustments to an index as indicated below between Adjustment Days:

(a) Early Redemption or Full Call: The bond proceeds will be held as "Paid Cash" and reinvested into the index on the following Adjustment Day. For the avoidance of doubt a Tender must be mandatory, the pure offer to tender a bond will not lead to an adjustment of the index.*

(b) Flat Trading: A bond is marked as flat trading if the bond issuer will not meet its coupon payment obligation. This means that the buyer of a bond is not responsible for paying the interest that has accrued since the last payment. If a bond is defined to be "flat trading" between two Adjustment Days the respective accrued interests and coupons will be set to 0. The bond will not be removed until the next Adjustment Day.

(c) Defaulted Bonds: If the status of a bond changes to "In Default", the bond will remain as part of the index or portfolio at the last available evaluated price provided by the pricing source until the next regular index adjustment day.

(d) Exchange Offers:
1) Optional Exchange Offers: Optional Exchange Offers will not result in an adjustment of the index.
2) Mandatory Exchanges Offers:
    a. In case more than 90% of the Amount Outstanding is exchanged the exchange will be considered in the index calculation by exchanging the relevant bonds, so that the new bond will receive the weight of the old exchanged bond.
    b. In the case when less than 90% of the Amount Outstanding is exchanged the exchange will not be considered to be an event that affects the relevant bond's position in the index.
3) Distressed Debt Exchange Offers: in case more than 90% of the Amount Outstanding is exchanged in a Distressed Debt Exchange with the new bond having different characteristics (maturity, coupon or Amount Outstanding) or trading at a substantially different price, the old bond will be redeemed at the latest available price with the proceeds held as "Paid Cash" and reinvested into the index on the following Adjustment Day.

(e) Fungible Bonds:
1) The parent bond and the sub-tranche are both index constituents: Both bonds are kept in the index until the next Adjustment Day. On the next Adjustment Day, the new bond will be removed and the Amount Outstanding of the parent bond will be increased by the amount of the new bond issue.
2) The parent bond is an index constituent and the sub-tranche is not: On the next Adjustment Day, the Amount Outstanding of the parent bond will be increased by the amount of the sub-tranche.

3) The parent bond is not an index constituent but the sub-tranches: On the next Adjustment Day, the sub-tranche leaves the index and the parent bond enters the index including the Amount Outstanding added from the sub-tranche (assuming that it meets the requirements of the Selection Pool).

(f) Payment-in-Kind Bonds: These bonds pay interest in additional bonds rather than in cash. Assuming the additional bonds will be sold immediately and the proceeds will be reinvested in the index, payments-in-kind are therefore considered as cash in the Paid Cash component in all Total Return calculations.

(g) Ex-dividend Bonds: "Ex-dividend" means that the next coupon is detached from the bond several days in advance of the coupon payment date. Between ex-date and pay-date a buyer of the bond does not get the right to receive the next coupon. Therefore, accrued interest is negative during that period. However, the coupon will be paid to the original bondholder, i.e. if a bond is already in the index the next coupon payment is held separate in the Variable Coupon Adjustment Factor $CPAdj_{i,t}$. If the bond enters the index during the ex-dividend period $CPAdj_{i,t}$ is zero as the next coupon payment will not accrue to the index.

*For the avoidance of doubt, an optional tender or exchange offer may lead to an index adjustment after the end of the submission period. In case the tender or exchange has been successful for at least 90% of the Amount Outstanding, the bond will be removed from the index/exchanged into the relevant bond.

4. Definitions

4.1 index-specific definitions

The **"Selection Pool"** comprises bonds that fulfill the following conditions:

- The bond must be part of the new Selection Pool of the Solactive USD High Yield Total Markets Index (https://www.solactive.com/bond-indexing/?index=DE000SLA2M23)

- For all securities, the necessary input data, especially the BICS sector classification and the 30-day moving average of the yield to worst, must be available. If such data is not available the securities will not be considered in the index.

- All new securities must have a 30-day moving average yield to worst which is lower than the 30-day moving average median yield of the respective securities' sector. A security is removed from the index when the 30-day moving average yield to worst rises above 105% of the 30-day moving average of the median yield to worst of said securities sector.

4.2 Further definitions

"Adjustment Day" is the last Business Day of each month.

"Amount Outstanding" is the face value of the respective bond.

A **"Business Day**" in relation to the index is each day on which New York Stock Exchange is open for trading.

"Call" means that a bond with a callable feature will be redeemed before the actual maturity date of the bond. The callable feature allows the issuer of the bond to retain the privilege of redeeming the bond before the actual maturity date.

Composite and Average Rating Calculation
Bond ratings from Standard & Poor's, Fitch and Moody's are mapped to numerical ratings between 1 and 22 as below:

SP	Moody	Fitch	Numerical
AAA	Aaa	AAA	1
AA+	Aa1	AA+	2
AA	Aa2	AA	3
AA-	Aa3	AA-	4
A+	A1	A+	5
A	A2	A	6
A-	A3	A-	7
BBB+	Baa1	BBB+	8
BBB	Baa2	BBB	9
BBB-	Baa3	BBB-	10
BB+	Ba1	BB+	11
BB	Ba2	BB	12
BB-	Ba3	BB-	13
B+	B1	B+	14
B	B2	B	15

B-	B3	B-	16
CCC+	Caa1	CCC+	17
CCC	Caa2,caa	CCC	18
CCC-	Caa3	CCC-	19
CC	Ca	CC	20
C	C	C	21
D,SD	D	D,SD	22

Composite numerical rating of a bond is calculated as the average numerical ratings from all available ratings, rounded to signal digit, with .5 rounded up. The composite numerical rating can then be mapped to a composite rating in string as below:

Numerical	Rating
AAA	1
AA+	2
AA	3
AA-	4
A+	5
A	6
A-	7
BBB+	8
BBB	9
BBB-	10
BB+	11
BB	12
BB-	13
B+	14
B	15
B-	16
CCC+	17
CCC	18
CCC-	19
CC	20
C	21
D	22

“Convertible Bonds” are bonds that can be converted into a predetermined amount of the company's equity at certain times during its life.

“Covered Bonds” are bonds backed by cash flows or mortgages or public sector loans.

A **“Credit Event”** is the suspension of debt service, insolvency or failure to pay on time.

“Early Redemption” includes every event that leads to a redemption of a bond before the actual maturity date.

“Ex-dividend” means that the next coupon is detached from the bond several days in advance of the coupon payment date.

“Exchange Offer” means that the holder of a bond is invited to exchange the existing bond to another debt security.

In particular an **“Extraordinary Event”** is

- an early redemption of the bond
- a credit event

“Fixed Coupon Bonds” are bonds with a fixed coupon rate, as opposed to floating rate coupons.

A bond is marked as **“Flat Trading”** if the bond issuer will not meet its coupon payment obligation. This means that the buyer of a bond is not responsible for paying the interest that has accrued since the last payment.

“Floating Rate Bonds” are bonds with a variable or floating interest rate, i.e. coupons fluctuate in line with the underlying level of interest rates, as opposed to fixed-rate coupons.

A **“Fungible Bond”** is a new issue that has all the same specifications as an existing issue (bonds with the same parameters can be issued in different tranches). At a specific date, the tranches will be combined into one bond. After this date, the parent tranche will include the Amount Outstanding of all new tranches.

A bond is “**In Default**” when the issuer is not able to fulfil its bond payment obligations anymore after the 30 days grace period.

“Index Components” are all bonds in the Selection Pool.

The **“Index Currency”** is USD.

“Inflation-linked Bonds” are bonds whose principal is indexed to inflation.

“Issuer” is the issuing entity of the respective bond.

"Last Evaluated Price" generally is (aside from the rules referred to in “Extraordinary Events“) the last available Evaluated Bid Price.

“Evaluated Ask Price” is the last available Ask Price evaluated by the designated Pricing Provider.

“Paid Cash” is either the value of the coupon payments between Adjustment Days or the resulting payment when a bond is removed from the index between Adjustment Days. On the next Adjustment Day “Paid Cash” will be reinvested in the index.

“Payment-In-Kind Bonds” are a type of bonds that pay interest in additional bonds rather than in cash.

“Preferred Securities” combine both debt and equity characteristics.

“Securitized Bonds” are bonds secured against specific assets or receivables (ABS), mortgages (MBS) or cash flows.

“Selection Day” is a Business Day 3 Business Days prior to the Adjustment Day. If the Selection Day happens to be Christmas Eve the new composition is fixed 1 Business Day in advance.

“Sinking Fund Bonds” are bonds that are backed by a fund that sets aside money on a regular basis. A sinkable bond issuer is required to buy a certain amount of the bond back from the purchaser at various points throughout the life of the bond.

“Step-Up Coupon Bonds” are bonds whose coupons increase while the bond is outstanding. The coupon amounts are determined at issuance.

“Tender Offer” means that a holder of a bond is invited to tender the bond for a specific price at a specific time before the actual maturity date.

A **“Total Return Index”** measures the performance of the index components by assuming that all distributions are reinvested into the index, i.e. the index does not only reflect pure price movements.

“Zero Coupon Bonds” do not pay interest but are issued at a discount.

5 Appendix

5.1 Contact data

Information regarding the Solactive USD High Yield Corporates Total Market Low Beta Index concept

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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. 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 index and the method applied to calculate the index, 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. The Index calculator will make announcements regarding the amendment of the index guideline. 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.