S&P Dow Jones Indices

A Division of S&P Global

UBS Retiree Balanced Index
Index Manual

Nov 2024

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1) Significant Index Administration Events

Table 1: Index Administration Events

Date	Index Administration Event
26-11-2024 (the **"Index Commencement Date"**)	S&P Dow Jones Indices Limited [SPDJI] officially commences Index Administration and oversight for UBS Retiree Balanced Index and UBS Retiree Balanced Gross Index, prior to this date Credit Suisse International was the Benchmark Administrator
26-11-2024	Credit Suisse 10-Year US Treasury Note Futures Index was changed to UBS 10-Year US Treasury Note Futures Index
26-11-2024	Credit Suisse 2-Year US Treasury Note Futures Index was changed to UBS 2-Year US Treasury Note Futures Index

2) Index Overview

(a) Index Objective

The UBS Retiree Balanced Index is a rules-based, quantitative, long only asset allocation index across Equity and Fixed income. The allocation is made according to a series of rules to dynamically allocate between the UBS Retiree Consumer Expenditure Index, the UBS 10-Year US Treasury Note Futures Index and the UBS 2-Year US Treasury Note Futures Index. The Index uses a 200 day moving average in order to attempt to determine if it is a Risk-On or Risk-Off environment for the UBS 10-Year US Treasury Note Futures Index. Additionally, the Index systematically varies its allocation to the Index Components to attempt to target a specified level of volatility (5%). The Index is meant to represent an unfunded (excess return) exposure to the Index Components.

(b) Indices within the UBS Retiree Consumer Expenditure Index Family

Table 2: List of Indices

Index	Base Currency	Bloomberg Ticker	RefinitivCode	Index Base Date	Index Base Level	Index Launch Date
UBS Retiree Balanced Index	USD	CSEAREB5	.CSEAREB5	03-Nov-2003	100	30-Jul-2020
UBS Retiree Balanced Gross Index	USD	N/A	N/A	02-Jan-2019	213.4180	26-Nov-2024

3) Index Data

Table 3: Index Components

Index Component	Symbol	Refinitiv Code
UBS Retiree Consumer Expenditure Index	TRIndex	CSEARECI
UBS 10-Year US Treasury Note Futures Index	10Y	ULTAU10E=UBSL
UBS 2-Year US Treasury Note Futures Index	2Y	.MLTAUS2E
Equity Asset	Equity	NA

4) Index Calculation

4.1) Index Level Calculation

4.1.1) UBS Retiree Balanced Index

The **Index Level** in respect of each **Index Business Day** t shall be calculated according to the following formula:

$$Index_t = Index_{t-1} \times \left(1 + \sum_{Asset \in \{10Y, 2Y, Equity\}} w_{t-1}^{Asset} \times \left(\frac{Asset_t}{Asset_{t-1}} - 1 \right) - Fee \times D(t-1, t) \right)$$

where:

$t-1$	The Index Business Day immediately preceding Index Business Day *t*
$Index_t$	The Index Level on Index Business Day *t*
$Index_{t-1}$	The Index Level on Index Business Day *t-1*
w_{t-1}^{Asset}	The weight of the Index Component as per Table 3: Index Components on Index Business Day *t-1*
$Asset_t$	The level of a given Index Component as per Table 3: Index Components on Index Business Day *t*
$Asset_{t-1}$	The level of a given Index Component as per Table 3: Index Components on Index Business Day *t-1*
Fee	0.005
$D(t-1, t)$	The day count, calculated as the number of calendar days from and including Index Business Day *t-1* to and excluding Index Business Day *t*, divided by 360

A gross version of the Index, that excludes any costs / fees is also calculated.

The Equity Asset as of the Index Base Date is 100. On any Index Business Day t, the value of the Equity Asset will be calculated as follows:

$$Equity_t = Equity_{t-1} \times \left(\frac{TRIndex_t}{TRIndex_{t_1}} - R_{t-1} \times D(t-1, t) \right)$$

where:

$TRIndex_t$	The Closing Level of the UBS Retiree Consumer Expenditure Index as per Table 3: Index Components on Index Calculation Day t
R_{t-1}	The level of the Reference Rate on Index Business Day t-1
$D(t-1, t)$	The day count, calculated as the number of calendar days from and including Index Business Day *t-1* to and excluding Index Business Day *t*, divided by 360

For a given Index Component as per Table 3: Index Components and a Index Business Day, *t*, the Index Component Weight w_t^{Asset} shall be calculated as follows:

$$w_t^{Asset} = VT_t \times prelimw_t^{Asset}$$

$$VT_t = \min \left[ParCap, \frac{VolTarget}{\max \left[\sigma_{1,Pt}, \sigma_{2,Pt} \right]} \right]$$

$$prelimw_t^{Equity} = \min \left[1, \frac{VolTarget}{\sqrt{252} \times \frac{\sigma_{1,TRIndex,TRIndex_{\max(1,t-1)}} + \sigma_{2,TRIndex,TRIndex_{\max(1,t-1)}}}{2}} \right]$$

$$prelimw_t^{10Y} = \left(1 - prelimw_t^{Equity} \right) \times \left(1 - \frac{RSignal_{\max(1,t-1)}^{10Y}}{2} \right)$$

$$prelimw_t^{2Y} = \left(1 - prelimw_t^{Equity} \right) \times \left(\frac{RSignal_{\max(1,t-1)}^{10Y}}{2} \right)$$

$$\sigma_{j,P_t} = \sqrt{252 \times \left(\begin{array}{c} \sigma_{j,TRIndex,TRIndex_{\max(1,t-1)}}^2 \times prelimw_t^{Equity^2} \\ + \sigma_{j,10Y,10Y_{\max(1,t-1)}}^2 \times prelimw_t^{10Y^2} \\ + \sigma_{j,2Y,2Y_{\max(1,t-1)}}^2 \times prelimw_t^{2Y^2} \\ + 2 \times \sigma_{j,TRIndex,10Y_{\max(1,t-1)}}^2 \times prelimw_t^{Equity} \times prelimw_t^{10Y} \\ + 2 \times \sigma_{j,TRIndex,2Y_{\max(1,t-1)}}^2 \times prelimw_t^{Equity} \times prelimw_t^{2Y} \\ + 2 \times \sigma_{j,10Y,2Y_{\max(1,t-1)}}^2 \times prelimw_t^{10Y} \times prelimw_t^{2Y} \end{array} \right)}$$

where:

$t-1$	The Index Business Day immediately preceding Index Business Day *t*
$ParCap$	125%
$VolTarget$	5%
VT_t	The volatility target participation adjustment on Index Business Day *t*
$prelimw_t^{Equity}$	The preliminary weight of Index Component Equity on Index Business Day *t*
$prelimw_t^{10Y}$	The preliminary weight of Index Component 10Y on Index Business Day *t*
$prelimw_t^{2Y}$	The preliminary weight of Index Component 2Y on Index Business Day *t*
σ_{j,P_t}	The volatility of the portfolio defined by the preliminary weights on Index Business Day t and j refers to calculations using either λ_j
σ_{j,X,Y_t}^2	The covariance (or variance in the case of *X=Y*) measure between Index Components *X* and *Y* as per Table 3: Index Components on Index Business Day *t*, where *X* and *Y* are any Index Components and *j* refers to calculations using either λ_j
$RSignal_{t-1}^{10Y}$	The Risk Signal as given in Section 4.1.1) — UBS Retiree Balanced Index on Index Business Day *t-1*

For a given pair of Index Components, *X* and *Y* , which are amongst the Table 3: Index Components and an Index Business Day, *t*, the risk signal EWMA Covariance σ_{j,X,Y_t}^2 is calculated as follows:

$$\sigma_{j,X,Y_t}^2 = \lambda_j \times \sigma_{X,Y_{t-1}}^2 + (1-\lambda_j) \times \ln\left(\frac{X_t}{X_{t-1}}\right) \times \ln\left(\frac{Y_t}{Y_{t-1}}\right)$$

$$\sigma_{j,TRIndex,10Y_1}^2 = -0.20 \times \sigma_{j,TRIndex,TRIndex_1} \times \sigma_{j,10Y,10Y_1}$$

$$\sigma_{j,TRIndex,2Y_1}^2 = -0.10 \times \sigma_{j,TRIndex,TRIndex_1} \times \sigma_{j,2Y,2Y_1}$$

$$\sigma_{j,10Y,2Y_1}^2 = 0.85 \times \sigma_{j,10Y,10Y_1} \times \sigma_{j,2Y,2Y_1}$$

$$\sigma_{j,TRIndex,TRIndex_1}^2 = \frac{0.13^2}{252}$$

$$\sigma_{j,10Y,10Y_1}^2 = \frac{0.050^2}{252}$$

$$\sigma_{j,2Y,2Y_1}^2 = \frac{0.012^2}{252}$$

where:

λ_1	0.93
λ_2	0.97
σ^2_{j,X,Y_t}	The covariance (or variance in the case of *X=Y*) measure between Index Components *X* and *Y* as per Table 3: Index Components on Index Business Day *t*, where *X* and *Y* are any Index Components and *j* refers to calculations using either λ_j

For the **Reference Fixed Income Asset– Risk On** (10Y), and an Index Business Day, *t*, the risk signal $RSignal_t^{10Y}$ is one if the Reference Fixed Income Asset – Risk On level is less than the preceding days Moving Average for each of the past ten Index Business Days (inclusive of *t*), else zero.

For a given Index Business Day *t*:

If $t \leq 10$,

$$RSignal_t^{10Y} = 0$$

Otherwise,

$$RSignal_t^{10Y} = g\left(10 - \sum_{i=t-9}^{t} f(MA_{i-1}^{10Y} - 10Y_i)\right)$$

where:

$f(x) = \begin{cases} 0, & x \leq 0 \\ 1, & x > 0 \end{cases}$	The indicator function returning one if a number is strictly positive, else returning zero
$g(x) = \begin{cases} 0, & x \neq 0 \\ 1, & x = 0 \end{cases}$	The indicator function returning one if a number is equal to zero, else returning zero
$RSignal_t^{10Y}$	The Risk Signal as given in Section 4.1) — UBS Retiree Balanced Index on Index Business Day *t*
$10Y_t$	The Closing Level of the Reference Fixed Income Asset – Risk On (10Y) on Index Business Day *t*

With respect to an Index Business Day, t, and the Reference Fixed Income Asset – Risk On (10Y), the Moving Average MA_t^{10Y} shall be:

$$MA_t^{10Y} = \frac{1}{\min(t, Obs)} \times \sum_{i=\max(1, t+1-Obs)}^{t} 10Y_i$$

where:

Obs	The observation window = 200
$10Y_t$	The Closing Level of the Reference Fixed Income Asset – Risk On (10Y) on Index Business Day t

4.2) Index History

As limited historical performance data exists with respect to the Indices, any notional investment in the Indices may involve greater risk than a notional investment in indices or strategies with a proven track record. Each Index will be first calculated on or around the relevant Index Commencement Date. Any retrospective closing levels are simulated based on quantitative screening only. They must be considered hypothetical and illustrative only. The actual performance of the Indices may be materially different from the results presented in any simulated history relating to such Indices. Past performance should not be considered indicative of future performance.

4.3) Rounding of Calculated Values

Each Index Level published by the Index Administrator shall be rounded to 4 decimal places (with 0.00005 being rounded upwards). Any underlying index levels used in any Index Level calculation is also rounded to 4 decimal places (with 0.00005 being rounded upwards). However, no other data used or derived otherwise in the index determination process is rounded.

4.4) Calendar

The Index Level will be calculated on each Index Business Day and subsequently published by 07:00 pm New York Time on such Index Business Day.

On any day where the Index Level is not calculated (for example, on a Disrupted Day), no Index Level will be published in respect of such day, subject to the provisions set out in please refer to Section 5) — Governance and Regulatory Compliance.

5) Governance and Regulatory Compliance

S&P Dow Jones Indices Ltd. (SPDJI) is the Index Administrator of the Indices. Information on SPDJI's governance and compliance approach can be found here. This document covers:

- Governance arrangements, including external committees
- Input data integrity
- Conflicts of interest management
- Market disruption and Force Majeure
- Methodology changes and cessations
- Complaints
- Errors and restatements
- Reporting of infringements and misconduct
- Methodology reviews
- Business continuity

Further information about SPDJI Ltd. can be found on the Index Administrator's website.

6) Risk Factors

S&P DJI operates as Index Administrator and is independent of the Index Owner. S&P DJI does not act as an investment adviser nor provides advice of any nature and therefore does not assume any fiduciary obligation to any investors buying, selling, entering into or holding products linked to the Index.

For any further information about risk factors, contact the **Index Owner**.

7) Construction of this Index Manual

The **Index Manual** is published by the Index Administrator. In the event of any inconsistency between the English language version of this Index Manual and that translated into any other language, this English version shall prevail.

8) Disclaimer, licensing and trademark

8.1) Disclaimers

No legal relationship (whether in contract, tort, or otherwise) exists between any Index Product Investors and the Index Administrator or the Index Owner and neither the Index Administrator nor the Index Owner owes any duties (whether in contract, tort, or otherwise) to any Index Product Investor. No claims, actions or legal proceedings may therefore be brought against the Index Administrator or the Index Owner in any manner whatsoever by an Index Product Investor or any other person. Neither the Index Administrator nor the Index Owner makes any representation, warranty or guarantee whatsoever, express or implied, either as to the results to be obtained as to the use of the Index or the figures or levels at which the Index stands at any particular day or otherwise. In addition, neither the Index Administrator nor the Index Owner gives any assurance regarding any modification or change in any Methodology used in calculating the Index and is under no obligation to continue the calculation, publication and dissemination of the Index. Neither the Index Administrator nor the Index Owner warrants or represents or guarantees to any person the accuracy or completeness of the Index and its computation or any information related thereto and makes no warranty or representation or guarantee of any kind whatsoever relating to the Index is given or may be implied. The process and basis of computation and compilation of the Index and the related formulae, constituent Benchmarks and factors may at any time be changed or altered by the Index Administrator. No responsibility or liability is accepted by either the Index Administrator or the Index Owner (whether for negligence or otherwise) in respect of the use of and/or reference to the Index by us or any other person in connection with securities, or for any inaccuracies, omissions, mistakes or errors in the computation of the Index (and neither the Index Administrator nor the Index Owner shall be obliged to advise any person or any Index Product Investor of any error therein) or for any economic or other loss which may be directly or indirectly sustained by any Index Product Investor or any other persons dealing with securities as a result. Any Index Product Investor or other person dealing with securities does so, therefore, in full knowledge of this disclaimer and can place no reliance whatsoever on the Index Administrator or the Index Owner. This document contains data derived as a result of back-testing of data and is provided by the Index Administrator or the Index Owner in good faith using its standard Methodology for information of this kind. The Methodology relies on proprietary models, empirical data, assumptions and such other information that the Index Administrator or the Index Owner believes to be accurate and reasonable. Neither the Index Administrator nor the Index Owner makes, however, any representation, warranty or guarantee as to the accuracy, completeness or appropriateness of such Methodology and neither the Index Administrator nor the Index Owner accepts any liability for the use of such information. Specifically, there is no assurance that other banks or brokers would derive the same results for the back-test period. Nothing in the disclaimers in this section shall exclude or limit liability to the extent such exclusion or

limitation is not permitted by law or regulations to which the Index Administrator or the Index Owner is subject.

8.2) WM/Reuters Disclaimer

The WM/Reuters Closing Spot Rates and the WM/Reuters Closing Forward Rates are provided by "Refinitiv". Refinitiv shall not be liable for any errors or delays in providing or making available the data contained within this service or for any actions taken in reliance to it, except to the extent that it is directly caused by its or its employees' negligence.

8.3) Licensing and Trademark

The mark and name of the Index is proprietary to UBS AG, London Branch, a division of UBS AG (or any successor thereto). The UBS Retiree Balanced Index is the trademark of UBS AG, London Branch, a division of UBS AG (or any successor thereto) and has been licensed for use by UBS AG, London Branch, a division of UBS AG (or any successor thereto) in connection with the calculation of the Index Level.

9) Further Information

For any general index enquiries, contact the Markit Index Administration support group at support@ihsmarkit.com.

Ownership: The Index Owner is UBS AG, London Branch, a division of UBS AG (or any successor thereto).

A) ESG Disclosures

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY [1]		
1	**Name of the benchmark administrator.**	S&P Dow Jones Indices Ltd. (SPDJI)
2	**Underlying asset class of the ESG benchmark. [2]**	N/A
3	**Name of the S&P Dow Jones Indices benchmark or family of benchmarks.**	
4	**Do any of the indices maintained by this methodology take into account ESG factors?**	No
Appendix latest update:		Nov 2024
Appendix first publication:		Nov 2024

[1] The information contained in this Appendix is intended to meet the requirements of the European Union Commission Delegated Regulation (EU) 2020/1817 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the minimum content of the explanation of how environmental, social and governance factors are reflected in the benchmark methodology and the retained EU law in the UK (The Benchmarks (amendment and Transitional Provision) (EU Exit) Regulations 2019.

[2] The 'underlying assets' are defined in European Union Commission Delegated Regulation (EU) 2020/1816 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the explanation in the benchmark statement of how environmental, social and governance factors are reflected in each benchmark provided and published.

B) Glossary

Term	Definition
Base Currency	means the currency as described in Table 2: List of Indices.
Base Index	UBS Retiree Consumer Expenditure Index (CSEARECI).
Benchmark	has the meaning specified in the IOSCO Principles.
Bloomberg Code	means the the relevant ticker code on Bloomberg as referenced in Table 2: List of Indices.
Closing Level	in respect of each Index Component, its level as of the scheduled closing time of the regular trading session of the Exchange (or any earlier actual closing time, if such actual closing time of the regular trading session of the Exchange is earlier than the scheduled closing time).
Disrupted Day	is determined by the Index Administrator as a day that affects the Index, any or all of the Index Components or the methodology in respect of the Index, as a result of a disruption event or a force majeure event that occurs on one or more Scheduled Trading Days.
Index	means an Index listed in Table 2: List of Indices.
Index Administration	means all stages and processes (including processing information for the purpose of determining a Benchmark and dissemination of a Benchmark) involved in the production and dissemination of a Benchmark and the oversight on such processes, including those performed by parties other than the Index Administrator.
Index Administrator	means SPDJI or any successor thereto.
Index Base Date	is the date of the initial level of the index – as given in Table 2: List of Indices.
Index Base Level	is the initial level of each index – outlined in Table 2: List of Indices of Section 2) — Index Overview.
Index Business Day	means any day on which the following are scheduled to be open for trading during their regular trading sessions: • New York Stock Exchange
Index Commencement Date	means the date of the initial official Index Level distribution to market participants, outlined in Table 1: Index Administration Events.
Index Component	and together "Index Components", means each underlying instrument that comprises the Index, as amended replaced or substituted from time to time Table 3: Index Components.
Index Currency	means the Base Currency in which the Index is denominated as described in Table 2: List of Indices.
Index Level	means the level of the Index determined in accordance with Section 4.1.1) — UBS Retiree Balanced Index.
Index Manual	means this document, as amended, replaced or substituted, where necessary.
Index Owner	means UBS AG, London Branch, a division of UBS AG (or any successor thereto).
Index Product Investors	means the persons or entities who own contracts or financial instruments that reference a Benchmark in the Index.
IOSCO Principles	means the IOSCO Principles for Financial Benchmarks, dated July 2013.

Term	Definition
Methodology	has the meaning specified in the IOSCO Principles.
Reference Fixed Income Asset – Risk On	UBS 10-Year US Treasury Note Futures Index (ULTAU10E=UBSL).
Reference Rate	before July 3, 2023: US Dollar 3 Month LIBOR (USD3MFSR)
	after July 3, 2023: US Dollar Secured Overnight Financing Rate SOFR (USDSOFR) + 0.26161%
SPDJI Website	means the following website: www.markit.com/Product/UBSIndices.
Stakeholders	means Index Product Investors, relevant public sector entities and any other entity or person with a reasonable interest in the Index.