M RNINGSTAR Indexes

Construction Rules for the Morningstar® Global Wide Moat VC 7% Index



April 2025

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Overview

The Morningstar[®] Global Wide Moat VC 7% Index measures the performance of a multi-asset-class strategy focusing on global equity, US Treasury market and a commodity carry component with a volatility control overlay. The multi-asset index allocates weight to three top level component indexes each representing one asset class, with dynamic proportions as defined based on a risk budgeting optimization. A target volatility of 7.0% overlay is implemented over the multi-asset index. The index and its top-level components contain embedded transaction costs and carry costs as well as a 0.5% per annum embedded fee deducted on a daily basis.

The weights across the top-level components indexes are determined monthly following a risk budgeting optimization using a fixed risk budget of 60% equity, 20% bond and 20% commodity.

A leverage applied to the monthly weights calculated from the fixed risk budget allocation is calculated daily to target a volatility of 7.0% and is capped at 250%. The leveraged commodity exposure is capped at 50%

This index does not incorporate environmental, social, or governance criteria.

Index Inception and Performance Start Date

The index inception date is April 11, 2025, and the performance start date, when the first back-tested index value was calculated, is June 29, 2009.



Index Construction

Methodology Summary			
Index Universe	Base Index Construction	Volatility Control	
 Index constituents for the Base Index are listed below: Morningstar Global Markets Wide Moat Composite GR USD UBS US Dynamic Bond Index UBS Beta Switcher COSI Ex Precious Metals 2.5x Leveraged Net Excess Return Index 	 Base Index is constructed as an index of indexes with top level components (ER) weighted based on a risk budget optimization using a fixed risk budget as below: Equity – 60% Bond – 20% Commodity – 20% Base Index is rebalanced monthly 	 The Risk Control overlay is applied on the Base Index with the following parameters: Target Volatility – 7% Leverage Cap – 250% Tolerance – 5% VAF Min – 0.95 VAF Max – 1.2 Decay Factor λ_{long} – 0.97 Decay Factor λ_{short} – 0.94 Index_fee – 0.50% Leveraged Commodity Exposure capped at 50% 	Morningstar® Global Wide Moat VC 7% Index

Index Universe

Constituents of the Morningstar[®] Global Wide Moat VC 7% Index are listed below. Rules governing security inclusion into the constituent index, index reconstitution/rebalancing, security splits/dividends/contract expirations, and other index mechanics as applicable are detailed in the rulebooks that govern each index.

- Morningstar Global Markets Wide Moat Composite GR variant: For more details, please refer to the construction rules for the <u>Morningstar Global Markets Wide Moat Composite Index</u>.
- UBS US Dynamic Bond Index: For more details, please refer to the Appendix 2
- UBS Beta Switcher COSI Ex Precious Metals 2.5x Leveraged Net Excess Return: For more details, please refer to the Appendix 3

Base Index Construction

The base index is the Morningstar Global Wide Moat MA Index, which is constructed as an index of indexes made up of the following three components weighted based on a risk budget optimization using a fixed risk budget as outlined below:

To create the base index, the constituents Indexes i.e. Morningstar Global Markets Wide Moat Composite GR Index, UBS US Dynamic Bond Index and UBS Beta Switcher COSI Ex Precious Metals 2.5x Leveraged Net Excess Return Index are weighted based on a risk budget optimization using a fixed risk budget as below:

- 60%: Morningstar Global Wide Moat Composite Index
- 20%: UBS US Dynamic Bond Index

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• 20%: UBS Beta Switcher COSI Ex Precious Metals 2.5x Leverage Net Excess Return Index

The base index is rebalanced monthly. The leveraged commodity exposure is capped at 50%.

Index Construction

- A risk control overlay is applied on the base index with the following parameters:
 - Target Volatility 7%
 - Leverage Cap 250%
 - \circ Tolerance 5%
 - VAF Min 0.95
 - VAF Max 1.2
 - Decay Factor $\lambda_{long} 0.97$
 - o Decay Factor $\lambda_{short} 0.94$
 - Index_fee 0.50%

For more details on Risk Control overlay, please refer to the Appendix 1



Index Maintenance and Calculation

Reconstitution and Rebalancing

The Index contains variable exposure to the Base Index. This exposure is assessed daily, and the Index is rebalanced subject to tolerance limits, provided that the day is not a holiday for any of the following exchanges: New York Stock Exchange, EUREX, London Metal Exchange, Chicago Board of Trade, Hong Kong Stock Exchange, Tokyo Stock Exchange, Chicago Mercantile Exchange, SIX Swiss Exchange, or London Stock Exchange. The Base Index is rebalanced monthly.

For more information on reconstitution and rebalancing to the underlying Indexes, see the links below:

Construction Rules for the Morningstar Global Markets Wide Moat Composite Index

Index files are published according to the NYSE calendar schedule. For more information, please refer to the <u>Morningstar</u> <u>Indexes Holiday Calendar</u>.

Index Calculation and Price Data

Details about index calculations and price data can be found in their respective rulebooks: <u>Morningstar Indexes Calculation</u> <u>Methodology</u> and <u>Morningstar Equity Indexes Price Methodology</u>.



Methodology Review and Index Cessation Policy

The index methodology is continually reviewed to ensure it achieves all stated objectives. These reviews consider corporate action treatment, eligibility requirements, and maintenance procedures. Subscribers to the index will be notified before any methodology changes are made. For more details, refer to the <u>Morningstar Indexes Methodology Change Policy</u>.

Morningstar Indexes notifies all subscribers and stakeholders of the index that circumstances might arise that require a material change to, or a possible cessation of, the index. These circumstances are generally not within Morningstar's control and may include significant changes to the underlying market structure, inadequate access to necessary data, geo-political events, and regulatory changes. In addition, factors such as low usage or methodology convergence may result in the cessation of an index.

Because the cessation of the index or benchmark index could disrupt subscriber products that reference this index, all subscribers are encouraged to have robust fallback procedures if an index is terminated. For more details, refer to the Morningstar Index Cessation Process.



Data Correction and Precision

Intraday Index Data Corrections

Commercially reasonable efforts are made to ensure the accuracy of data used in real-time index calculations. If incorrect price or corporate action data affects index calculations, corrections are applied prospectively.

Index-Related Data and Divisor Corrections

Incorrect pricing and corporate action data for individual issues in the database will generally be corrected upon detection. In addition, an incorrect divisor of an index, if discovered within two days of its occurrence, will be fixed retroactively on the day it is discovered to prevent an error from being carried forward. Commercially reasonable efforts are made to correct an older error subject to its significance and feasibility.

For more details, refer to the <u>Recalculation Guidelines</u>.

Exceptions

While Morningstar will seek to apply the method described above, the market environment, supervisory, legal, financial, or tax reasons may require an alternative approach to be adopted. A decision to take an alternative approach will be made by the relevant Morningstar Index Methodology Committee, and in all instances, the application of a nonstandard process will be reported to the Morningstar Index Oversight Committee.



Appendixes

Appendix 1: Index Calculations

1.1. Definitions			
Covariance Start Date	means J	June 20rd, 2008	
Intermediate Level Start Date	means June 29th, 2009		
Index Base Date	means S	September 28th, 2009	
Closing Level	Closing Price means the official closing price of the Top Level Component k on Index Business Day t or the latest available closing price of such Top Level Component in case such Top Level Component is not scheduled to be calculated in such Index Business Day t		
Index Business Day	means a day on which the New York Stock Exchange is scheduled to open for trading for its regular trading session.		
Index Rebalancing Day	means a followin Chicago Mercant	an Index Business Day that is not a disrupted day or a holiday for any of the g exchanges: New York Stock Exchange, EUREX, London Metal Exchange, Board of Trade, Hong Kong Stock Exchange, Tokyo Stock Exchange, Chicago tile Exchange, SIX Swiss Exchange, or London Stock Exchange.	
Index Risk Budget Calculation	Day	the Last Index Rebalancing Day of a given calendar month	
Index Risk Budget Rebalance D)ay	the Intermediate Level Start Date and subsequently, the Index Rebalancing Day that is second (2nd) Index Rebalancing Day after the most recent Index Risk Budget Calculation Day.	
Disrupted Day		means, in respect of an Index Component, a day on which a Market Disruption Event has occurred or is continuing for that Index Component.	

1.2. Top Level Component:

On the Index Business Day t, the level of a Top Level Component k TLC_t^k , is calculated as:

- (i) On the Index Intermediate Level Start Date t, the level of Top Level Component TLC_t^k is set to 100;
- (ii) On each Index Business Day t following the Index Intermediate Level Start Date, the level of the Top Level Component will be calculated with the following formula:

For k=1

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$$TLC_{t}^{k} = \left(\frac{PX_{LAST_{t}}^{k}}{PX_{LAST_{t-1}}^{k}} - (carry_{cost}^{k} + FF_{t-1}) * \tau_{t-1,t}\right) * TLC_{t-1}^{k}$$

For k = 2 and k=3



$$TLC_{t}^{k} = \left(\frac{PX_{LAST_{t}}^{k}}{PX_{LAST_{t-1}}^{k}} - (carry_cost^{k}) * \tau_{t-1,t}\right) * TLC_{t-1}^{k}$$

Where:

$PX_LAST_t^k$	means the Closing Price of a Top Level Component k on Index Business Day $m{t}$
$PX_LAST_{t-1}^k$	means the Closing Price of a Top Level Component k on the Index Business Day immediately preceding Index Business Day $m{t}$
carry_cost ^k	means the Carry Cost of the Top Level Component k as specified in Table 1.
$\tau_{t-1,t}$	means the length of time in years between Index Business Day (t-1) and (t), calculated based on the $\frac{Act}{365}$ day count convention.
TLC_{t-1}^k	means the level of the Top Level Component k on the Index Business Day immediately preceding Index Business Day $m{t}$
FF _t	means the US Federal Funds Effective Rate on the Index Business Day t

Table 1: Top Level Component TLC^k

k	Asset	Transaction Cost	Carry Cost	Exposure Cap	Risk Budget
1	Equity	0.02%	0.75%	Not Applicable	0.6
2	Bond	0.015%	0%	Not Applicable	0.2
3	Commodity	0.05%	0%	50%	0.2

Table 2: Covariance Matrix Component CMC^k

k	Asset	Covariance Matrix Component
1	Equity	Morningstar Global Markets Wide Moat Composite GR USD Index
2	Bond	UBS 10Y US Treasuries ER Index
3	Commodity	UBS Beta Switcher COSI Ex Precious Metals 2.5x Leveraged Net Excess Return Index



1.3. Covariance Matrix Component

On the Index Business Day t, the level of a Covariance Matrix Component k CMC_t^k , is calculated as:

- (i) On the Covariance Start Date t, the level of Covariance Matrix Component CMC_t^k is set to 100;
- (ii) On each Index Business Day *t* following the Covariance Start Date, the level of the Covariance Matrix Component will be calculated with the following formula:

For k=1

$$CMC_{t}^{k} = (\frac{PX_{LAST_{t}}^{k}}{PX_{LAST_{t-1}}^{k}} - (FF_{t-1}) * \tau_{t-1,t}) * CMC_{t-1}^{k}$$

For k = 2 and k=3

$$CMC_t^k = (\frac{PX_{LAST}_t^k}{PX_{LAST}_{t-1}^k}) * CMC_{t-1}^k$$

Where:

- $PX_LAST_t^k$ means the Closing Price of a Covariance Matrix Component k on Index Business Day t
- $PX_LAST_{t-1}^k$ means the Closing Price of a Covariance Matrix Component k on the Index Business Day immediately preceding Index Business Day t
- carry_cost^k means the Carry Cost of the Covariance Matrix Component k as specified in Table 1
- $\tau_{t-1,t}$ means the length of time in years between Index Business Day (t-1) and (t), calculated based on the $\frac{Act}{365}$ day count convention
- CMC_{t-1}^k means the level of the Covariance Matrix Component k on the Index Business Day immediately preceding Index Business Day t
- *FF*_t means the US Federal Funds Effective Rate in Index Business Day t
 - 1.4. Calculation of Theoretical Weights and Target Units:
 - 1.4.1. Weekly return WR_t^k of component at time t is calculated as:

$$WR_t^k = \frac{CMC_t^k}{CMC_{t-5}^k} - 1$$

Where:

 CMC_t^k the level of Covariance Matrix Component k in respect of Index Business Day t as specified in Table 2



 CMC_{t-5}^k the level of Covariance Matrix Component k in respect of the 5th Index Business Day prior to Index Business Day t.

1.4.2. Covariance Matrix:

The Covariance Matrix $C_{t-N+1,t}$ of size 3×3 and of N Index Business Days is calculated using the vector of the Weekly Return $\overline{WR_{t-N+1,t}}$, $\{WR_s^k, for s = t - N + 1, ..., t and k = 1, 2, 3\}$

$$C_{t-N+1,t}(i,j) = \frac{N}{5} \times \frac{1}{N-1} \times \sum_{s=t-N+1}^{t} (WR_s^i - \mu_t^i) (WR_s^j - \mu_t^j), \quad \text{for } i,j \in \{1,2,3\}$$
$$\mu_t^k = \frac{1}{N} \times \sum_{s=t-N+1}^{t} WR_s^k, \text{for } k = 1,2,3 \text{ and } N = 252$$

All elements of the covariance matrix $C_{t-N+1,t}$ are rounded to 5 decimal places, with midway values (0.000005) rounded upwards.

1.4.3. Theoretical Weights:

On each Index Risk Budget Calculation Day t, provided with a 3×3 Covariance Matrix C calculated using the Weekly Return time series and a 3×1 vector of Risk Budget, $Risk_Budget$, the Theoretical Weights Tw_t^k in respect of the Top Level Component k are calculated using the following steps:

(i) Find solution by optimizing the following function using the Optimizer: identify the W that minimizes $\sqrt{(W)^T \cdot C \cdot W} - \sum_{k=1}^3 Risk_Budget^k \times \ln(rbw_t^k)$

subject to: $rbw_t^k \ge 0, \forall k \in (1, 2, 3)$ where:

 $Risk_Budget^k$ means the k-th element of the vector $\overrightarrow{Risk_Budget}$, representing the Risk Budget (" $Risk_Budget^k$ ") allocated to Top Level Component k as specified in Table 1.

- *C* means the Cholesky Decomposed Covariance Matrix calculated using the Weekly Return $\overline{WR_{t-N+1,t}}$, $\{WR_s^k, for \ s = t N + 1, ..., t \ and \ k = 1, 2, 3\}$. k refers to k-th Covariance Matrix Component in accordance with Table 2.
- rbw_t^k means the k-th element of the vector W in respect of the Top Level Component k
- W_t means the vector of 3×1 weights being optimized by the Optimizer on the Index Risk Budget Calculation Day t
- Optimizer means the ECOS solver, which is an interior-point solver for second-order cone programming, within the CVXPY Python Library, details on which can be found at https://www.cvxpy.org/index.html. In the event that a solution to a given optimization problem is not found when using the ECOS solver, the SCS solver, which uses an operator splitting method to solve conic optimization problems, is used. In the event that a solution is not found to an optimization problem within a given rebalancing selection calculation with either solver, the given rebalancing selection calculation is aborted, and the portfolio is not rebalanced.



 cw_t^k means Calculated Weights in respect of a Top Level Component k on Index Business Day t, defined as following:

(i) If Index Business Day *t* is an Index Risk Budget Calculation Day for a Top Level Component k:

 cw_t^k as calculated using the function $f(\overline{WR_{prevrb-251,prevrb}}, \overline{Risk_Budget})$

by normalizing the optimal risk parity weights: $cw_t^k = \frac{rbw_t^k}{\sum_{k=1}^3 rbw_t^k}$

(ii) Else if Index Business Day t is the Intermediate Level Start Date:

$$cw_t^k = 0$$

(iii) Otherwise:

$$cw_t^k = cw_{t-1}^k$$

Where:

cw _t ^k	means Calculated Weights in respect of a Top Level Component k on Index Business Day t with a precision of 5 decimal places with 0.000005 rounded upwards.
f(x,y)	calculates the risk parity weights, takes the two inputs $x \in R^{N \times 3}$ and $y \in R^{3 \times 1}$ and outputs the risk parity weights of time series x based on risk budgets y
prevrb	means the most recent Index Risk Budget Calculation Day
WR _{prevrb-2}	means the weekly return time series WR_s^k , for $s = prevrb - 251,, prevrb$ and $k = 1, 2, 3;$

 $Tw_t^{\mathbf{k}}$ means Theoretical Weights in respect of a Top Level Component k on Index Business Day t, defined as following:

(i) If Index Business Day t is an Index Risk Budget Rebalancing Day that is not a Disrupted Day for any Top Level Component k:

$$Tw_t^k = cw_{t-2}^k$$

(ii) Otherwise:

$$Tw_t^k = Tw_{t-1}^k$$

1.4.4. Calculation of Weights:

The weight in respect of Index Business Day *t* and a Top Level Component *k* are calculated as:



$$w_t^1 = T w_t^1; w_t^2 = T w_t^2$$

- (i) If Index Business Day t is an Index Rebalancing Day that is not a Disrupted Day for Top Level Component 3 and
- (ii) $Exposure_t \times Tw_t^3 > Exposure_Cap^3$, then:

$$w_t^3 = \frac{Exposure_Cap^3}{Exposure_t}$$

Else:

$$w_t^3 = Tw_t^3$$

Where:

*Exposure_Cap*³ means the Exposure Cap in respect of the Top Level Component 3 as specified in Table 1.

*Exposure*_t means the Exposure on Index Business Day t as specified Section 1.7.4.

1.4.5. Calculation of Intermediate Index Level:

On Index Business Day t, the Intermediate Index Level, IIL_t , is calculated as:

- (i) On the Intermediate Level Start Date, the Intermediate Index Level is set to 100;
- (ii) On each Index Business Day *t* following the Intermediate Level Start Date, the Intermediate Index Level will be calculated by the Index Calculation Agent in accordance with the following formula:

$$IIL_{t} = IIL_{t-1} + \sum_{k=1}^{3} Unit_{t-1}^{k} \times (TLC_{t}^{k} - TLC_{t-1}^{k})$$

Where:

- IIL_{t-1} means the Intermediate Index Level on the Index Business Day immediately preceding Index Business Day t
- TLC_t^k means the level of the Top Level Component k in respect of Index Business Day t, as determined in accordance with Section 1.2.
- TLC_{t-1}^k means the level of the Top Level Component k in respect of the Index Business Day immediately prior to Index Business Day t
- $Unit_{t-1}^k$ means the Unit in respect of the Index Business Day immediately preceding Index Business Day t for Top Level Component k, calculated in accordance with Section 1.4.6.
 - 1.4.6. Calculation of Target Units for each Top Level Component

If the Index Business Day t is a Disrupted Day for a Top Level Component k, then:

$$Unit_t^k = Unit_{t-1}^k$$

Otherwise:

On the Index Intermediate Level Start Date t or the second index business day right after the start day:

$$Unit_t^k = 0$$

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On each Index Business Day t following the Index Intermediate Level Start Date:

 $Unit_t^k = Unit_{t-1}^k$

For Bond and Equity:

 $Unit_t^k = \frac{IIL_{t-2} \times w_t^k}{TLC_{t-2}^k}$ if t is a Risk Budget Rebalance Day,

For Commodity:

 $Unit_{t}^{k} = \frac{IIL_{t-2} \times w_{t}^{k}}{TLC_{t-2}^{k}}$ if t is a Risk Budget Rebalance Day or if t is an Index Rebalancing Day where Exposure $_{t} \times Tw_{t}^{3} > Exposure_Cap^{3}$,

otherwise

otherwise

 $Unit_t^k = Unit_{t-1}^k$

Where:

IIL_{t-2}	means t Index Bu	he Intermediate Index Level on the Index Business Day that is two (2) Index Business Days prior to usiness Day t , as determined in accordance with Section 1.4.5.		
TLC_{t-2}^k	means t Business	he level of Top-Level Component k in respect of the Index Business Day that is two (2) Index s Days immediately prior to Index Business Day t		
w_t^k	means t determir	the Theoretical Weights in respect of the Index Business Day t and a Top-Level Component k as ned in accordance with Section 1.4.4.		
Unit _{t-1}	means t to Index	he Target Unit of the Top-Level Component k in respect of the Index Business Day immediately prior Business Day t		
Exposure_Cap) ³	means the Exposure Cap in respect of the Top-Level Component 3 as specified in Table 1		
Exposure _t		means the Exposure on Index Business Day t		
Tw_t^3		means Theoretical Weights in respect of a Top-Level Component 3 on Index Business Day t,		

1.5. Calculation of the Realized Volatility

On the Index Business Day t starting from the Index Base Date, the Realized Volatility, RV_t , is calculated as per the following formula:

$$RV_t = \max\left(HV_{t,42,\lambda_{short}}, HV_{t,63,\lambda_{long}}\right)$$

Where:

 $HV_{t,i,\lambda}$ means the Historical Volatility on the Index Business Day t, with lookback window length i, using decay factor λ :

$$HV_{t,i,\lambda} = \sqrt{252} \times \sqrt{\frac{\sum_{j=0}^{i-1} \lambda^j \times \left(\frac{IIL_{t-j}}{IIL_{t-j-1}} - 1\right)^2}{\sum_{j=0}^{i-1} \lambda^j}}$$

Where:

 IIL_{t-j} means the level of the Intermediate Index on the Index Business Day that is j Index Business Days prior to Index Business Day t,



- IIL_{t-j-1} means the level of the Intermediate Index on the Index Business Day that is j+1 Index Business Day prior to Index Business Day t,
- λ means the Decay Factor
 - 1.6. Calculation of the Volatility Adjustment Factor

As of Index Business Day t, the Volatility Adjustment Factor, VAF_t , is calculated as:

- (i) For each day up to and including the 125th Index Business Day after the Base Date, set equal to 1
- (ii) With respect to any Index Business Day, *t*, thereafter:

$$VAF_t = \max\left(VAF_{Min}, MIN\left(VAF_{Max}, \sqrt{MAX\left(0, 2 - \frac{Volatility_FIL^2}{TargetVol^2}\right)}\right)\right)$$

Where:

$$Volatility_FIL \qquad \sqrt{252} x \sqrt{\frac{1}{125} \sum_{s=0}^{125} \left(\left(\frac{FIL_{t-s}}{FIL_{t-s-1}} - 1 \right) - \frac{1}{126} \sum_{s=0}^{125} \left(\frac{FIL_{t-s}}{FIL_{t-s-1}} - 1 \right) \right)^2}$$

- FIL_{t-s} means the Final Index Level on the Index Business Day that is *s* Index Business Days prior to Index Business Day t,
- FIL_{t-s-1} means the Final Index Level on the Index Business Day that is s + 1 Index Business Days prior to Index Business Day t,
- VAF_{Min} means the Minimum Volatility Adjusted Factor,
- VAF_{Max} means the Maximum Volatility Adjusted Factor,
- *TargetVol* means the Target Volatility
 - 1.7. Calculation of Exposure
 - 1.7.1. Calculation of Target Exposure

On the Index Base Date and the second Index Business Day right after the start day, the Target Exposure, $TExpo_t$, is set to be 0

For an Index Business Day t following the Index Base Date, the Target Exposure, *TExpo_t*, is calculated as:

$$TExpo_{t} = MAX\left(0, MIN\left(\frac{TargetVol}{RV_{t-2}} \times VAF_{t-2}, Leverage Cap\right)\right)$$

TargetVol means the Volatility Target



- RV_{t-2} means the Realized Volatility on the Index Business Day that is two Index Business Days prior to Index Business Day t, as determined in accordance with Section 1.5
- VAF_{t-2} means the Volatility Adjusted Factor on the Index Business Day that is two Index Business Days prior to Index Business Day t, as determined in accordance with Section 1.6

Leverage Cap means the Leverage Cap

1.7.2. Calculation of Effective Exposure

On the Index Base Date, the Effective Exposure, *EExpo_t*, is set to be 0.

For an Index Business Day t following the Index Base Date, the Effective Exposure, $EExpo_t$, is calculated as:

$$EExpo_t = \frac{FU_{t-1} \times IIL_{t-1}}{FIL_{t-1}}$$

*FU*_t means the Unit of Final Index on the Index Business Day *t*, as determined in accordance with Section 1.8.2

*IIL*_t means the Intermediate Index Level on the Index Business Day t

*FIL*_t means the Final Index Level on the Index Business Day *t*, as determined in accordance with Section 1.8.3.

1.7.3. Calculation of Rebalance Indicator

On the Index Base Date, the Rebalance Indicator, *reb_indicator*, is set to be 0.

For an Index Business Day t following the Index Base Date, the rebalance indicator is calculated as:

$$reb_indicator_t = \begin{cases} 1, & |TExpo_t - EExpo_{t-1}| \ge 5\% \text{ and } t \text{ is an Index Rebalancing Day} \\ 0, & otherwise \end{cases}$$

*TExpo*_t means the Target Exposure on the Index Business Day t as specified in Section 1.7.1.

 $EExpo_{t-1}$ means the Effective Exposure on the Index Business Day immediately preceding Index Business Day t as specified in Section 1.7.2.

1.7.4. Calculation of Realized Exposure

On the Index Base Date, the Realized Exposure, *Exposure*_t, is set to be 0.

For an Index Business Day t following the Index Base Date, the Realized Exposure, *Exposure*_t, is calculated as:

$$Exposure_{t} = \begin{cases} TExpo_{t}, & reb_indicator_{t} = 1\\ EExpo_{t-1}, & reb_indicator_{t} = 0 \end{cases}$$

*TExpo*_t means the Target Exposure on the Index Business Day t



 $EExpo_{t-1}$ means the Effective Exposure on the Index Business Day immediately preceding Index Business Day t

*reb_indicator*_t means the Rebalance Indicator on the Index Business Day t, as determined in accordance with Section 1.7.3

- 1.8. Calculation of Final Index Level
 - 1.8.1. Calculation of Rebalancing Cost

On the Index Base Date, the Rebalancing Cost, reb_cost_t , is set to be 0.

For an Index Business Day t following the Index Base Date, the Rebalancing Cost, reb_cost_t , is calculated as:

$$reb_cost_{t} = \sum_{k=1}^{3} Tcost^{k} \times TLC_{t-1}^{k} \times abs(FU_{t} \times Unit_{t}^{k} - FU_{t-1} \times Unit_{t-1}^{k})$$

Where:

FU _t means the Unit of Final Index	in respect of the Index Business Day t
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 FU_{t-1} means the Unit of Final Index in respect of the Index Business Day t-1

- $Tcost^k$ means Transaction Cost in respect of a Top-Level Component k as specified in Table 1.
- TLC_{t-1}^k means the Closing Level of the Top-Level Component k in respect of the Index Business Day that is immediately prior to Index Business Day t
- $Unit_t^k$ means the Unit for the Top-Level Component k in respect of the Index Business Day t
- $Unit_{t-1}^k$ means the Unit for the Top-Level Component k in respect of the Index Business Day that is immediately
prior to Index Business Day tabsmeans the absolute value.
 - 1.8.2. Calculation of Final Index Unit

On the Index Base Date, the Unit of Final Index, FU_t , is set to be 0.

For an Index Business Day t following the Index Base Date, the Unit of Final Index, FU_t, is calculated as:

$$FU_{t} = \begin{cases} \frac{FIL_{t-2}}{IIL_{t-2}} \times Exposure_{t}, & reb_indicator_{t} = 1\\ FU_{t-1}, & reb_indicator_{t} = 0 \end{cases}$$

- FIL_{t-2} means the Final Index Level on the Index Business Day that is two Index Business Days prior to Index Business Day t
- IIL_{t-2} means the Intermediate Index Level on the Index Business Day that is two Index Business Days prior to Index Business Day t



*Exposure*_t means the Realized Exposure on the Index Business Day t

 FU_{t-1} means the Unit of Final Index on the Index Business Day immediately preceding Index Business Day t

1.8.3. Calculation of Final Index Level

On Index Business Day t, the Final Index Level, FILt, is calculated as:

- (i) On the Base Date, the Final Index Level is set to 100;
- (ii) On each Index Business Day *t* following the Index Base Date, the Final Index Level will be calculated by the Index Calculation Agent in accordance with the following formula:

$$FIL_t = FIL_{t-1} + FU_{t-1} \times (IIL_t - IIL_{t-1}) - adjamt_t - reb_cost_t$$

Where:

- FIL_{t-1} means the Final Index Level on the Index Business Day immediately preceding Index Business Day t
- FU_{t-1} means the Unit of Final Index on the Index Business Day immediately preceding Index Business Day t

*IIL*_t means the Intermediate Index Level on the Index Business Day t

- IIL_{t-1} means the Intermediate Index Level on the Index Business Day immediately preceding Index Business Day t
- *adjamt*_t means the adjustment amount of the Final Index Level on the Index Business Day *t*, calculated as:

$$adjamt_t = FIL_{t-1} * \tau_{t-1,t} * index_fee$$

- $\tau_{t-1,t}$ means the length of time in years between Index Business Day (t-1) and (t), calculated based on the $\frac{Act}{365}$ day count convention.
- *index_fee* means the index fee



Appendix 2: UBS US Dynamic Bond Index

The UBS US Dynamic Bond Index is a futures-based weighted return index that measures the performance of the US investable treasury 10-year notes market. Index weight is allocated to a UBS treasury futures index linked to US listed futures with dynamic proportions determined based on a 5% volatility target and a trend, a carry and a value score.

The minimum leverage is 0% and maximum leverage is 100%.

The UBS US Dynamic Bond Index is net of Transaction Cost of 0.015% and Carry Cost of 0.10% per annum.

Appendix 3: UBS Beta Switcher COSI Ex Precious Metals 2.5x Leveraged Net Excess Return Index

The objective of the UBS Beta Switcher COSI Index Series is to gain the commodity curve carry premium by dynamically allocating between Beta Neutral COSI and COSI on a per commodity basis by using a signal that measures the trend of the 12-month basis of each commodity future curve. The Indices are calculated with the US Dollar as the Base Currency.

The Index has exposure to Single Commodity Beta Switcher Indices (each an "Underlying Component") for each commodity in the BCOM ex precious metals index universe. Each Underlying Component has exposure to five Single Commodity Daily Beta Switcher Indices which each rebalances on a different day in the week. Each of these strategies has dynamic exposure to Single Commodity Beta Neutral COSI and a Single Commodity COSI Indices with weights determined based on the trend of the 12-month basis of the future curve.

The index is a 2.5x levered version of the Beta Switcher COSI Index where the leverage is rebalancing on the last Index Business Day of each calendar month.

Appendix 4: Market Disruption

In the case of a market disruption, the Index will continue to be published using the most recently published weights and prices of the disrupted component. The Morningstar Indexes Operations Committee will monitor market disruption in accordance with its <u>Charter</u>.

Appendix 5: Methodology Changes

As referenced in the <u>Morningstar Indexes Methodology Change policy</u>, methodology reviews may be conducted at the request of market participants or stakeholders outside of Morningstar Indexes.



About Morningstar Indexes

Morningstar Indexes was built to keep up with the evolving needs of investors—and to be a leading-edge advocate for them. Our rich heritage as a transparent, investor-focused leader in data and research uniquely equips us to support individuals, institutions, wealth managers, and advisors in navigating investment opportunities across major asset classes, styles, and strategies. From traditional benchmarks and unique IP-driven indexes to index design, calculation, and distribution services, our solutions span an investment landscape as diverse as investors themselves.

Morningstar Index Methodology Committee

The Morningstar Index Methodology Committee oversees all new index development, index methodology changes, and cessation of indexes for any indexes where Morningstar owns the intellectual property. This committee is also charged with ensuring that indexes align with Morningstar Research principles and values. The group comprises members of the index team with index research, product development, product management, client service, index implementation, and operation expertise who provide the first layer of governance over index design and methodology.

Morningstar Index Operations Committee

The Morningstar Index Operations Committee governs the processes, systems, and exception handling of the day-to-day management of all live indexes, including index rebalancing and reconstitution, restatements, market classification, and contingency management. The committee oversees the annual review of index methodology (as required by U.K. and EU benchmark regulations, or BMR), ensuring that methodologies remain fit for purpose and continue to achieve their stated investment objectives. The group comprises members of the index team with data, operations, corporate actions, product development, index launch, client service, and index management experience who provide the first layer of governance over index operations.

Morningstar Index Oversight Committee

The Morningstar Index Oversight Committee is responsible for the index oversight function as per the requirements of the U.K. and European BMR, providing independent oversight of all aspects of the governance of benchmark administration as required by the relevant BMR. Its remit extends to all calculation and administration-related business activities of Morningstar Indexes, including administration of Morningstar-owned benchmarks as well as client-owned benchmarks and index calculation. The oversight function is part of the organizational structure of Morningstar but is separate and independent from the index business, index management, and the other index committees.

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