save®

SAVE® US MACRO INDEX

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1 Overview

The Save® US Macro Index (the "Index") is a rules-based investment strategy that represents the hypothetical returns from exposures across asset classes determined based on a combination of macroeconomic signals.

The sponsor of the Index is Save® Advisers, LLC (the "Index Sponsor"). The launch date of the Index is July 19 2023, and closing levels for the Index are disseminated on Bloomberg Page SAVEMAC1. The inception date of the Index is 1/22/2003, and the level of the Index is set to 100 on this day.

Each day, macroeconomic data relating to variables such as interest rates, inflation and wider financial conditions, are analyzed by the Calculation Agent. The results of this analysis determines the allocations to 20 components (made up of 21 different ETFs) equities, government and corporate bonds, and commodities.

For example, an environment of high and rising inflation expectations would be considered a poor environment for equities.

The calculation of these signals is carried out systematically by the Index according to a predefined set of rules.

The key elements of the methodology are as follows:

The Index is calculated by Solactive AG, the Calculation Agent, and rebalanced on each Index Business Day (scheduled trading days for NYSE).

First, utilizing an investment universe of 21 ETFs, the Index will group the ETFs into 7 sub-strategies: 6 beta sub-strategies (equity, commodity, government bonds, inflation protected government bonds, corporate bonds, gold), and 1 relative value sub-strategy (i.e. long-short; US equity sectors).

The 6 beta sub-strategies are designed to take a long or flat exposure to a given market, while the 1 relative value sub-strategy expresses a relative preference across assets by taking a long position in the preferred assets and establishing a short position in the less favored assets.

Second, analysis of macroeconomic variables, carried out by the Calculation Agent, is used to construct the 7 individual sub-strategies each day.

Third, an optimization is then carried out by the Index to allocate weights to the sub-strategies according to their relative preferences (as described in the section *Sub-Strategy Risk Budgets*, where each sub-strategy's risk budget is either static, or determined using corresponding macro signals). The optimization considers volatilities and correlations in order to determine the weight allocation for each sub-strategy such that its contribution to the overall portfolio risk matches the intended risk budgets.

Fourth, the sub-strategies are then decomposed to their respective ETF components (as given the section *Index Component Parameters*, where each sub-strategy is made up of multiple ETFs), such that the final index portfolio of 21 ETFs is then constructed by assigning weights to individual ETFs, where constraints are applied to the weight sizes and their changes (i.e., rebalancing) based on liquidity.

Finally, the volatility control mechanism also acts on a daily basis, where the Index considers the new weight allocations and adjusts its overall weight in such a way to target a consistent realized volatility of 2.5%.

The Index rules allow for negative exposure to some, but not all, of the ETFs; in other words, the Index will establish short positions in certain situations. The shortable components are those within the Index Component Parameters table that have a *wgt_floor* below zero. Regarding the use of shorting within the Index:

Overall the index has a long exposure to the equity and bond markets (with the size of the exposure determined systematically), a long or flat exposure to commodities (with the size of the exposure determined systematically), with the addition of the relative value sub-strategy (i.e. long-short - US equity sectors).

In the relative value US Sectors sub-strategy, the macro signals determine relative preferences, and the sub-strategy will be constructed as a dollar-neutral (i.e. long and short positions are of equal size) portfolio. For example, a long position might be established in energy and utilities sectors, offset by shorts in consumer discretionary and communications services sectors.

The Index applies the following costs each day to determine the Index level: Rebalance cost applied to some components as specified in table 3.1; funding cost (Fed Funds); shorting cost of 0.5% applied to any short positions.

2 Risk Factors

The following risk factors are not a complete list or explanation of all the risks associated with the Index. All persons referring to or using the Index in connection with any investment in an instrument linked to or associated with the Index should seek advice from their legal, tax, accounting, and other advisors.

An investment in an instrument related to the Index may not be a suitable investment for all investors.

Instruments related to the Index are complex financial instruments and such instruments may be purchased as a way for you to incur particular market exposures or seek enhanced yield with an appropriate addition of risk to your overall portfolio. You should not invest in complex financial instruments unless you have the expertise to evaluate how such an instrument may perform under changing conditions, the resulting effects on the value of such instrument and the impact this investment will have on your overall investment portfolio.

Each investor, together with their advisors, must determine the suitability of an investment in an instrument related to the Index considering his, her or its own circumstances.

Each investor considering an investment in an instrument related to the Index should:

- have sufficient knowledge and experience to make an evaluation of an investment in an instrument related to the Index and the merits and risks of investing in an instrument related to the Index;
- have access to, and knowledge of, appropriate analytical tools to evaluate, in the context of his, her or its particular financial situation, an investment in an instrument related to the Index and the impact such investment will have on the overall investment portfolio;
- have sufficient financial resources and liquidity to bear all of the risks of an investment in an instrument related to the Index, including the risk of loss of such investment and any currency risk where the return, if any, on his, her or its investment is payable in one or more currencies, or where the currency for principal or premium or return, if any, on the investment is different from the investor's currency;
- understand the terms of the investment in an instrument related to the Index and be familiar with the behavior of the Index, and the components thereof and financial markets generally; and
- be able to evaluate possible scenarios for economic, interest rate and other factors that may affect the investor's investment and his, her or its ability to bear the applicable risks.

Terms used in this section but not otherwise defined here shall have the meanings given to them in Section 3.

Proprietary and Rules-Based Trading Index

The Index follows a notional rules-based proprietary trading algorithm of the Index Sponsor that operates based on pre-determined rules. Accordingly, potential investors in financial products which are linked to the performance of the Index should determine whether those rules as described in the Description are appropriate considering their individual circumstances and investment objectives. No assurance can be given that the algorithm on which the Index is based will be successful or that the Index will outperform any alternative algorithm that might be employed.

No Recourse to Assets

The Index is purely synthetic. The exposure to each Component is purely notional and will exist only in the records held by the Index Sponsor. There are no assets to which any person is entitled, or in which any person has any ownership interest, or which serve as collateral for any investment product related to the Index. No investor in instruments linked to this Index will have any rights in respect of any components of any Component.

Simulated Operating History

The Index will be first calculated on a live basis on or around the Live Date (19 July 2023) and therefore lacks actual historical performance. The Calculation Agent and the Sponsor have retrospectively calculated the closing levels of the Index from the Index Inception Date to but excluding the Live Date. However, because the Index will not be calculated before the Live Date, all such retrospective closing levels are simulated and must be considered hypothetical and illustrative only. Simulated data prior to the Live Date may be constructed using certain procedures that vary from the procedures used to calculate the Index following its establishment and based on certain assumptions that may not apply in the future. These procedures include, but are not limited to, the use of proxies to extend historical ETF time series. The actual performance of the Index may be materially different from the results presented in any Simulated Operating History relating to the Index. Past performance should not be considered indicative of future performance.

Future Index Performance

No assurance can be given that the strategies employed by the Calculation Agent and/or the Sponsor will be successful or that the return on the Index, as demonstrated by the Simulated Operating History, will continue in the future. The Simulated Operating History should not be considered indicative of future performance of the Index as markets are unpredictable. There can be no assurance that the Index will generate positive returns or outperform any benchmark index or alternative strategy.

Volatility Control and Leverage

The Index has an automatic feature that aims to maintain a roughly constant level of realized volatility over time, and protect against some of the inherent volatility exhibited by the Components and, by consequence, the levels of the Index. This is achieved by reducing exposure to the underlying portfolio of Components in times of high expected volatility, and by increasing exposure to the underlying portfolio of Components in time of low expected volatility. Subsequently, the Index can maintain leverage (where total gross exposure is greater than 100%). This feature may not be successful, and this may have an impact on the performance of the Index.

Index Allocation Based on Macroeconomic Signals

In order to determine the Index's allocation of 21 ETFs, the Index utilizes analysis of macroeconomic variables like interest rates and inflation. This analysis is carried out by the Calculation Agent. For example: if interest rates are increasing, the Index may reduce its equity weight allocation; if inflation is increasing, the index may increase is commodity weight allocation.

There can be no assurance that a strategy based on macroeconomic analysis will generate positive returns or outperform any benchmark index or alternative strategy.

Negative Weights

The Index has the capability to have negative exposure to certain ETF components (i.e. synthetically selectively sell short certain components); this means that the index can apply negative weights to some Components when determined by the rules in the Index Calculation section. When negative weights are applied, the Index would gain from a reduction in value of the respective Component, and the Index would be negatively impacted by an increase in value of the respective Component. The Index is only able to short some Components, and there are caps on the size of short positions allowed; there is also a daily observation of the cost of shorting each relevant Component, whereby the Index will not short Components where the cost of shorting is above a threshold.

Termination of the Index

The Sponsor and the Calculation Agent are under no obligation to continue the calculation, publication, and dissemination of the Index. The Index may be terminated at any time by the Sponsor. Should the Index cease to exist, this may have a negative impact on the return on any investment in an instrument, the return on which is linked in whole or in part to the Index.

Amendment or Modification to the Description

This Description, the methodology and rules relating to the Index may be amended, modified or adjusted from time to time by the Calculation Agent and/or the Sponsor, as applicable, without the consent of or notice to investors in instruments linked to the Index. Any such amendment may have an adverse effect on the level of the Index. The Index may be renamed in the future (although this would not change the economic profile of the Index).

Discretion of Sponsor and Calculation Agent

The Index confers on the Calculation Agent and/or the Index Sponsor, as applicable, discretion in making certain determinations, calculations, and corrections from time to time. Although any such determinations, calculations and corrections must be made by the Calculation Agent and/or the Sponsor in good faith, the exercise of such discretion in the making of calculations, determinations and corrections may adversely affect the performance of the Index. The Sponsor shall determine in good faith whether any such corrections shall apply retrospectively or from the relevant date forward. In the course of the normal operation of the Index, all calculations are systematic with no discretion.

Potential Conflicts of Interest

Potential conflicts of interest may exist in the structure and operation of the Index and the course of the normal business activities of the Calculation Agent and/or the Sponsor and any of their respective affiliates or subsidiaries or their respective directors, officers, employees, representatives, delegates or agents (each a "person" for the purposes of this Description).

During the course of their normal business, each person may enter into or promote, offer or sell transactions or investments (structured or otherwise) linked to the Index and/or any of the notional trading positions. In addition, any person may have, or may have had, interests or positions, or may buy, sell or otherwise trade positions in or relating to the Index or any of the notional trading positions, or may invest or engage in transactions with other entities, or on behalf of such entities relating to any of these items. Such activity may or may not have an impact on the Index Level but all investors reading this Description should be aware that a conflict of interest could arise where anyone is acting in more than one capacity, and such conflict may have an impact, positive or negative on the Index Level. Neither the Calculation Agent nor the Sponsor nor any other person has any duty to consider the circumstances of any entities when participating in such transactions or to conduct themselves in a manner that is favorable to anyone with exposure to the Index. Solactive AG is the initial Index Calculation Agent of the Index.

Market Risks

The performance of the Index is dependent on the performance of the Components and their relevant components. Consequently, investors in financial products linked to the Index should appreciate that their investment is exposed to the performance of the components of the Components. Price movements in components in each Component can be volatile and can be affected by a wide range of factors, which will affect

the level of the Index. Historical performance of each Component, and the Index should not be considered indicative of future performance.

Equity Risk

The Index universe includes 13 equity ETFs that cover various sectors. Prospective investors should understand that investment in instruments relating to equity markets may be negatively affected by global economic, financial and political developments, and that such developments among other things may have a material effect on the value of the performance of the Index.

Bond Risk (Corporate Bonds and Government Bonds)

The Index universe includes 5 ETFs exposed to US government bonds (including inflation protected bonds, known as 'TIPS') and Corporate Bonds. The value of a bond is volatile and subject to market conditions. The value of a bond is subject to the supply of, and/or demand and whether or not any alternatives to that bond exist. When interest rates rise, bond prices fall; conversely, when rates decline, bond prices rise. The longer the time to a bond's maturity, the greater its sensitivity to changes in interest rates is. Bonds relating to debt capital markets may be negatively affected by global economic, financial, and political developments. Further, investments in bonds are subject to the credit risk of the issuer of such securities, whether a corporate or a sovereign issuer. Should the issuer of bonds default, an investor in such bonds debt securities may lose some or all of their investment. The credit risk of an issuer and global developments, among other things, may have a material effect on the value of the bonds and consequently the performance of the Index. For inflation-protected US government bonds, the value of these bonds will also vary based on the level of US inflation, and US inflation expectations.

Commodity Risk

The Index universe includes 3 commodity ETFs. Commodities and commodity-index linked securities may be affected by changes in overall market movements, changes in interest rates, and other factors such as weather, disease, embargoes, or political and regulatory developments, as well as trading activity of speculators and arbitrageurs in the underlying commodities.

Allocation Risk

The Index uses a combination of signals on a daily basis to determine a preferred asset allocation. These measures consider the perceived relative attractiveness of each Component on a standalone basis, as well as how these Components should be combined in a portfolio or Index. As a result, it is possible that the Component-specific signals determine relative preferences across the Components that lead the Index to decline in value, such as when the preferred Components (as indicated by the signals) underperform versus their peers or in absolute terms. In addition, the Index considers how the Components may interact with each other, by considering measures such as correlations in seeking to allocate weights according to how much risk a Component contributes to the overall portfolio (as opposed to considering the risk if each Component in isolation). As a result, if the interactions between Components differ from expectations (for example, Components expected to exhibit negative correlation in fact exhibit positively correlated behavior), this could negatively or positively impact the index because the actual, realized risk contribution from each Component could differ significantly from what was expected.

3 Index Components and Signals

3.1 Index Component Parameters

n	Component	ETF Tickers	Asset Class	Sub-Strategies	wgt_cap (w_n^{cap})	wgt_floor (w_n^{floor})	max_rebal (max_rebal_n)	Rate	Rebal Cost (c_n^{rebal})
1	Comm Services	XLC	Equity	Sectors	15.00%	-15.00%	10.00%	Fed Funds	-
2	Cons Discr	XLY	Equity	Sectors	15.00%	-15.00%	10.00%	Fed Funds	-
3	Cons Staples	XLP	Equity	Sectors	15.00%	-15.00%	10.00%	Fed Funds	-
4	Energy	XLE	Equity	Sectors	15.00%	-15.00%	10.00%	Fed Funds	-
5	Financials	XLF	Equity	Sectors	15.00%	-15.00%	10.00%	Fed Funds	-
6	Healthcare	XLV	Equity	Sectors	15.00%	-15.00%	10.00%	Fed Funds	-
7	Industrials	XLI	Equity	Sectors	15.00%	-15.00%	10.00%	Fed Funds	-
8	Tech	XLK	Equity	Sectors	15.00%	-15.00%	10.00%	Fed Funds	-
9	Materials	XLB	Equity	Sectors	15.00%	-15.00%	10.00%	Fed Funds	-
10	Real Estate	XLRE	Equity	Sectors	10.00%	-5.00%	5.00%	Fed Funds	0.035%
11	Utilities	XLU	Equity	Sectors	15.00%	-15.00%	10.00%	Fed Funds	-
12	Eq_large	SPY	Equity	Eq ; Sectors; Corp	75.00%	-50.00%	50.00%	Fed Funds	-
13	Eq_small	IWM	Equity	Eq	50.00%	0.00%	33.00%	Fed Funds	-
14	Corp	HYG	Corp Bond	Corp	50.00%	0.00%	33.00%	Fed Funds	-
15	Govt_bond	IEF	Govt Bond	Govt, Corp	50.00%	0.00%	33.00%	Fed Funds	-
16	Govt_tip	TIP	Govt Bond	TIPS	25.00%	0.00%	15.00%	Fed Funds	-
17	Cmd	PDBC, DBC	Commodity	Commod	12.50%	0.00%	5.00%	Fed Funds	0.035%
18	Gold	GLD	Commodity	Gold	25.00%	0.00%	15.00%	Fed Funds	-
19	Corp_IG1	LQD	Corp Bond	Corp	0.00%	0.00%	33.00%	Fed Funds	-
20	Corp_IG2	VCIT	Corp Bond	Corp	0.00%	0.00%	10.00%	Fed Funds	-

3.2 Sub-Strategies

S_i	Sub-Strategy	Cap, $W_{S_i}^{MAX}$	Floor, $W_{S_i}^{min}$
1	Eq	0.5	0.025
2	Sectors	0.75	0
3	Govt	0.5	0.025
4	TIPS	0.33	0
5	Corp	0.33	0
6	Gold	0.33	0
7	Commod	0.33	0

4 Index Calculation

4.1 Index Parameters

Index Business Days	NYSE Exchange scheduled to be open for a full or partial day of trading
vol_target	2.5%
Data Start Date	1/11/2002
Weights Inception Date, t=0	1/21/2003
Index Inception Date, t=1	1/22/2003
c^{short}	0.5%
E^{max}	200%
E^{min}	30%
$E^{\max}_{\text{change}}$	20%
E_{thresh}	5%
VAF^{min}	0.9
VAF^{max}	1.3
VT^{max}	200%
VT^{min}	10%
VAR^{target}	0.0006250
VAF^{window}	252
$VAF^{lookback}$	126
Max_Borrow	1.25%
Max_Util	90%
Max_Util_IEF	95%

4.2 Definitions

Borrow Rate, $BR_{ETF,t}$

Is determined for each ETF where, for the corresponding Index Component, $w_n^{floor} < 0$ (as per Section 3.1), as the Offer Borrow Cost provided by the Shorting Data Provider, for each *t* from the start of 2020 onward. If not available for a given *t,* the prior level is used.

Utilization Rate, $UR_{ETF,t}$

Is determined for each ETF where, for the corresponding Index Component, $w_n^{floor} < 0$ (as per Section 3.1), as the Utilization Rate provided by the Shorting Data Provider, for each *t* from the start of 2020 onward. If not available for a given *t,* the prior level is used.

Hard to Borrow indicator, $HtB_{t,n}$, determined for each Index Component, *n*:

Is set to -1 for all *t* for all *n* by default, and fixed at -1 for all *n* for all *t* prior to the year 2020

Is set to -1 for 'Eq_large' for all *t*

Else,

Is set to 0 for any *t* for any *n* if for any corresponding ETF,

$BR_{t,ETF} > Max\_Borrow$ or $UR_{t,ETF} > Util\_Limit$

where $Util\_Limit = Max\_Util$ for all ETFs except IEF, for which $Util\_Limit = Max\_Util\_IEF$

And will remain set to 0 until either of the following two conditions (i, or ii) are met:

i. $HtB_{t,n}$ has remained at 0 for at least 5 consecutive Index Business Days, and $BR_{t,ETF} < Max\_Borrow$, and $UR_{t,ETF} < Util\_Limit$

ii. $BR_{t,ETF} < 1\%$ and $UR_{t,ETF} < 80\%$ on some *t* for all corresponding ETFs

Shorting Data Provider: S3

$DCF(t, t-1)$ means the number of calendar days from *t-1* (exclusive) to *t* (inclusive), divided by 365

$Rate_t$ means the Rate given in Section 3.1, for *t*

4.3 Investable Time Series and Excess Returns

Total Return series:

From the Data Start Date onward, Gross total return, corporate action adjusted time series ($ETF_{i,t}^{TR}$) are retrieved, from primary exchanges, for all ETFs in Section 3.1, *ETF Tickers* column. For those ETFs whose inception date was after the Data Start Date, proxies have been used.

Levels are retrieved for all Index Business Days; if an ETF does not have a level for a given Index Business Day, then the level from the prior Index Business Day is used.

For all Components,

$Component_{n,t}^{TR}$	is set to a level of 1.0 at the Data Start Date
$Component_{n,t}^{ER}$	is set to a level of 1.0 at the Data Start Date

Calculation of $Component_{n,t}^{TR}$:

All Index Components (Section 3.1) where more than one ticker is given in the *ETF Tickers* column are constructed as an equally weighted basket of those respective tickers:

$$Component_{n,t}^{TR} = Component_{n,t-1}^{TR} \times \left(1 + \left[\sum_{i=1}^{N_{ETFs}} \left(\frac{ETF_{i,t}^{TR}}{ETF_{i,t-1}^{TR}} - 1\right)\right] \Big/ N_{ETFs}\right)$$

Where: $N_{ETFs}$is the number of ETF tickers corresponding to that Component,
$ETF_{i,t}^{TR}$is the GTR corporate action adjusted level of the ETF

Such that, for Components with just one *ETF Ticker*:

$$Component_{n,t}^{TR} = Component_{n,t-1}^{TR} \times \left(\frac{ETF_{i,t}^{TR}}{ETF_{i,t-1}^{TR}}\right)$$

Excess Return Series:

For all Index Components,

$$Component_{n,t}^{ER} = Component_{n,t-1}^{ER} \times \left(\frac{Component_{n,t}^{TR}}{Component_{n,t-1}^{TR}} - Rate_{t-1} \times DCF(t, t-1)\right)$$

Excess Returns:

For all Index Components, the *b-day* Excess Return is determined as:

$r_{t,n,b} = Component_{n,t}^{ER} / Component_{n,t-b}^{ER} - 1$ (if *b* is not specified it is assumed b=1)

4.4 Index Level Calculation

The Index level for Index Business Day, t, is determined as:

For t = 1, $I_t = 100$

For all subsequent t, $I_t = I_{t-1} \times \left(1 + E_{t-2} \times R_t - C_{t,rebal}\right)$

Where E_t is determined as:

For t = 0, $E_t = \min\left(E^{max}, \max\left(E^{min}, E_{t,target}\right)\right)$

For all subsequent t,

If $\text{abs}\left(\min\left(E_{t,max}, \max\left(E_{t,min}, E_{t,target}\right)\right) - E_{t-1}\right) < E_{thresh}$:

Then: $E_t = E_{t-1}$

Else: $E_t = \min\left(E_{t,max}, \max\left(E_{t,min}, E_{t,target}\right)\right)$

Where: $E_{t,target} = VAF_t \times VT_t$

$E_{t,max} = \min(E^{max}, E_{t-1} + E^{\max}_{\text{change}})$

$E_{t,min} = \max(E^{min}, E_{t-1} - E^{\max}_{\text{change}})$

Where $C_{t,rebal}$ is determined as:

For t $t < 2$, $C_{t,rebal} = 0$

For all subsequent t,

$$C_{t,rebal} = \sum_{n=1}^{N_{components}} \left[abs\left(E_{t-1} \times w_{t-1,n} - E_{t-2} \times w_{t-2,n} \times \frac{1+r_{t-1,n}}{I_{t-1}/I_{t-2}}\right) \times c_n^{rebal}\right]$$

Where: $R_t = R_{t,gross} - C_{t,shorting}$

$$R_{t,gross} = \sum_{n=1}^{N_{components}} \left(r_{t,n} \times w_{t-2,n}\right)$$

$$C_{t,shorting} = \left|\sum_{n=1}^{N_{components}} \min(0, w_{t-2,n})\right| \times c^{short} \times DCF(t, t-1)$$

Where $r_{t,n}$ means the 1-day Excess Return of Index Component, *n*, for Index Business Day, *t*

Where $w_{t,n}$means the final sub-portfolio weight of Index Component, *n*, for Index Business Day, *t,* determined as:

At t=0, $w_{t,n\neq 12} = \min(w_n^{cap}, \max(w_n^{floor}, w_{t,n}^{decomp\_target})) / E_t$

$w_{t,n=12} = w_{t,n=12}^{decomp\_target} / E_t - \sum_{n=1}^{11} w_{t,n}$

Thereafter: $w_{t,n} = w_{t,n}^{decomp\_final} / E_t$

Where: $w_{t,n\neq 12}^{decomp\_final} = w_{t,n}^{decomp}$

$w_{t,n=12}^{decomp\_final} = w_{t,n=12}^{decomp} - \left(\sum_{n=1}^{11} w_{t,n}^{decomp} + E_t \times W_{t,S_2} \times w_{t,EQ\_US}^{S_2}\right)$

Where: $w_{t,n}^{decomp} = \min(w_{t,n}^{max}, \max(w_{t,n}^{min}, w_{t,n}^{decomp\_target}))$

Where: $w_{t,n}^{max} = \max(\min(w_n^{cap}, w_{t-1,n}^{decomp\_final} + \text{max\_rebal}_n), HtB_{t,n})$

$w_{t,n}^{min} = \max(w_n^{floor}, w_{t-1,n}^{decomp\_final} - \text{max\_rebal}_n, HtB_{t,n})$

Where: $w_{t,n}^{decomp\_target} = E_t \times w_{t,n}^{Sub\_Portf\_Target}$

And $w_{t,n}^{Sub\_Portf\_Target} = \sum_{i=1}^{N_{sub\_strategies}} W_{t,S_i} \times w_{t,n}^{S_i}$

Where W_{t,S_i} (the weight of sub-strategy *i* within the sub-portfolio) and $w_{t,n}^{S_i}$ (the weight of Index Component *n* within sub-strategy *i*) are determined as described elsewhere.

And, for the sake of clarity: the only Index Components included within more than one Sub-Strategy are: *Eq_large, Govt_bond*

Where: VAF_t is set to 1.0 for all *t* up to and including t = 126,
And thereafter,

$$VAF_t = \max\left(VAF^{min},\ \min\left(VAF^{max}, \left(\frac{\max\left(0, VAR^{target} - \sum_{x=0}^{125}\left(\frac{I_{t-x}}{I_{t-1-x}} - 1\right)^2\right) \times VAF^{window}}{VAF^{window} - VAF^{lookback}}\right)^{0.5} \Big/ vol\_target\right)\right)$$

Where: $VT_t = \min\left(VT^{max}, \max\left(VT^{min}, vol\_target \,/\, SV_t^{sub\_portf\_ave}\right)\right)$

Where: $SV_t^{sub\_portf\_ave} = \frac{\left(SV_t^{sub\_portf_{[126,1,126]}} + SV_t^{sub\_portf_{[63,1,42]}} + SV_t^{sub\_portf_{[63,2,42]}}\right)}{3}$

Where: $SV_t^{sub\_portf_{[a,b,c]}} = \left[\frac{252}{b} \times average\left[\left(SRets_t^{sub\_portf,a,b}\right)^2\right]^{EWM(halflife=c)}\right]^{0.5}$

Where Simulated Historical Returns ($SRets_t^{sub\_portf,a,b}$) is determined for t = 0 onwards, as a series of length *a*; specifically, for each t, $SRets_t$ is a series of *b-day* sub-portfolio returns imagining that the newly calculated target weights, $w_{t,n}^{Sub\_Portf\_Target}$, had been fixed in place for the *a+b* days up to and including t, such that:

$$SRets_t^{sub\_port,a,b} = \sum_{n=1}^{N_{components}} \left[w_{t,n}^{Sub\_Portf\_Target} \times \begin{pmatrix} r_{t,n,b} \\ r_{t-1,n,b} \\ \vdots \\ r_{t-(a-2),n,b} \\ r_{t-(a-1),n,b} \end{pmatrix}\right]$$

Where $r_{t,n,b}$ means the *b-day* Excess Return of Index Component, *n*, at *t.*

And $average\begin{pmatrix} x \\ y \\ z \end{pmatrix}^{EWM(halflife=c)}$ means the average value of *x,y,z* exponentially weighted with half-life of *c* Index Business Days

4.5 Sub-Strategies:

4.5.1 Sub-Strategy Parameters:

S_i	Sub-Strategy	Number of underlying Components, N_{S_i}
1	Eq	2
2	Sectors	12
3	Govt	1
4	TIPS	1
5	Corp	5
6	Gold	1
7	Commod	1

4.5.2 Weight determination within Sub-Strategies: ($w_{t,n}^{S_i}$), for Component *n*, for Sub-Strategy *i*

For all components, *n,* except *n* = 19, 20:

$$J_{t,n} = \sum_{q=1}^{60} signal\_value_t^q * response^{q,n}$$

Where $response^{q,n}$ contains the static sensitivity of each Component to each $signal\_value^q$; $signal\_value_t^q$ is determined by applying a fully systematic set of rules, each Index Business Day, to the following Macro Data from the Federal Reserve and the Treasury:

s	Name	Source
1	Fed Funds Effective Rate	FRED (Federal Reserve Economic Data)
2	3-month Daily Treasury Par Yield Curve Rate	U.S. DEPARTMENT OF THE TREASURY
3	2-year Daily Treasury Par Yield Curve Rate	U.S. DEPARTMENT OF THE TREASURY
4	10-year Daily Treasury Par Yield Curve Rate	U.S. DEPARTMENT OF THE TREASURY
5	5-year Daily Treasury Par Real Yield Curve Rates	U.S. DEPARTMENT OF THE TREASURY
6	10-year Daily Treasury Par Real Yield Curve Rates	U.S. DEPARTMENT OF THE TREASURY
7	5-year US Inflation Breakeven	FRED (Federal Reserve Economic Data)
8	10-year US Inflation Breakeven	FRED (Federal Reserve Economic Data)
9	5-year forward 5-year US Inflation Breakeven	FRED (Federal Reserve Economic Data)
10	US CPI	FRED (Federal Reserve Economic Data)
11	NFCI	FRED (Federal Reserve Economic Data)
12	Credit Spreads	FRED (Federal Reserve Economic Data)
13	Oil	FRED (Federal Reserve Economic Data)
14	US Dollar	FRED (Federal Reserve Economic Data)

Then,

S_1: Eq

$$w_{t,EQ\_large}^{S_1} = \min\left(1\,, \max\left(0\,, 0.67 - \tfrac{0.33}{4} \times J_{t,Eq\_small}\right)\right)$$
$$w_{t,EQ\_small}^{S_1} = 1 - w_{t,EQ\_large}^{S_1}$$

S_2: Sectors

For Index Components 1 to 11 inclusive:

$$w_{t,n}^{S_2} = \max\left(HtB_{n,t}\,, 0.2 \times \left[J_{t,n} - \frac{1}{11}\sum_{g=1}^{11} J_{t,g}\right]\right)$$

And $w_{t,Eq\_large}^{S_2} = -\sum_{n=1}^{11} w_{t,n}^{S_2}$

S_3: Govt

If $B_t^3 \geq 0$: $w_{t,Govt\_bond}^{S_3} = 1$

If $B_t^3 < 0$: $w_{t,Govt\_bond}^{S_3} = min(abs(HtB_{Govt\_bond,t})\,, 1)$

S_4: TIPS

If $B_t^4 \geq 0$: $w_{t,Govt\_tip}^{S_4} = 1$

If $B_t^4 < 0$: $w_{t,Govt\_tip}^{S_4} = min(abs(HtB_{Govt\_tip,t})\,, 1)$

S_5: Corp

If $B_t^5 \geq 0$: $w_{t,Corp}^{S_5}$ = 1; and $w_{t,n}^{S_5}$ = 0 for all other *n*

If $B_t^5 < 0$:

If $HtB_{Corp,t}$ = -1: $w_{t,Corp}^{S_5}$ = 1; and $w_{t,n}^{S_5}$ = 0 for all other *n*

Else If $HtB_{Corp\_IG1,t}$ = -1:

$w_{t,Corp\_IG1}^{S_5}$ = 0.5, $w_{t,EQ\_large}^{S_5}$ = 0.4; and $w_{t,n}^{S_5}$ = 0 for all other *n*

Else If $HtB_{Corp\_IG2,t}$ = -1:

$w_{t,Corp\_IG2}^{S_5}$ = 0.5, $w_{t,EQ\_large}^{S_5}$ = 0.4; and $w_{t,n}^{S_5}$ = 0 for all other *n*

Else If $HtB_{Govt\_bond,t}$ = -1:

$w_{t,EQ\_large}^{S_5}$ = 0.5, $w_{t,Govt\_bond}^{S_5}$ = 0.25; and $w_{t,n}^{S_5}$ = 0 for all other *n*

Else: $w_{t,n}^{S_5}$ = 0 for all *n*

S_6: Gold

If $B_t^6 \geq 0$: $w_{t,Gold}^6$ = 1

If $B_t^6 < 0$: $w_{t,Gold}^6$ = $min(abs(HtB_{Gold,t}), 1)$

S_7: Commod

If $B_t^7 \geq 0$: $w_{t,Cmd}^{S_7}$ = 1

If $B_t^7 < 0$: $w_{t,Cmd}^{S_7}$ = $min(abs(HtB_{Cmd,t}), 1)$

4.6 Sub-Strategy Risk Budgets, B, for all Sub-Strategies

Are determined for each t as:

$$B_t^{S_1} = \min\left(\frac{4}{3}, \max\left(0, \left[\frac{J_{t,Eq\_large} + 1.5}{4}\right]\right)\right)$$

$$B_t^{S_2} = 0.125$$

$$B_t^{S_3} = \min\left(1, \max\left(0, \left[\frac{J_{t,Govt\_bond} + 1.25}{3.5}\right]\right)\right)$$

$$B_t^{S_4} = \min\left(1, \max\left(0, \left[\frac{J_{t,Govt\_tip} + 0.4}{1.5}\right]\right)\right) \times 0.45$$

$$B_t^{S_5} = \min\left(1, \max\left(0, \left[\frac{J_{t,Corp} + 1.5}{5}\right]\right)\right) \times 0.45$$

$$B_t^{S_6} = \min\left(1, \max\left(0, \left[\frac{J_{t,Gold} + 0.25}{1.5}\right]\right)\right) \times 0.45$$

$$B_t^{S_7} = \min\left(1, \max\left(0, \left[\frac{J_{t,Cmd} + 1}{4.5}\right]\right)\right) \times 0.30$$

With the exception that, for each *t*, for each *i*:

If $SV_t^{S_i}$= 0 then set $B_t^{S_i}$ to zero for the corresponding *i* and *t*

4.7 Portfolio Optimization

Correlation Matrix, $Corr_{j,k}^t$, determined as a 7x7 matrix (elements located at coordinates *j,k*):

$$Corr_{j,k}^t = \frac{Corr\_ST_{j,k}^t + Corr\_LT_{j,k}^t}{2}$$

Where:

$Corr\_ST_{j,k}^t$ = correlation$\left[SRets_t^{S_j,63,5}, SRets_t^{S_k,63,5}\right]^{EWM(halflife=21)}$

$Corr\_LT_{j,k}^t$ = correlation$\left[SRets_t^{S_j,252,5}, SRets_t^{S_k,252,5}\right]$

Where for a given *t,* if all $w_{t,n}^{S_i}$ are zero for a given *i*, then all elements of $Corr\_ST_{j,k}^t$ and $Corr\_LT_{j,k}^t$ will be zero for columns (*j*) and rows (*k*) corresponding to *i*, except for the diagonal elements which will always be 1.0

Simulated Volatility, $SV_t^{S_i}$, is determined for each sub-strategy for each *t* as:

$$\left[252 \times average\left[\left(SRets_t^{S_i,21,1}\right)^2\right]^{EWM(halflife=10)}\right]^{0.5}$$

Where Simulated Historical Returns ($SRets_t^{S_i,a,b}$) are determined for each Sub-Strategy *i*, for t = 0 onwards, as a series of length *a*; specifically, for each *t*, each $SRets_t^{S_i,a,b}$ is a series of *b-day* returns imagining that the newly calculated weights, $w_{t,n}^{S_i}$, had been fixed in place for the *a*+1 days up to and including t; for example:

$$SRets_t^{S_i,21,1} = \sum_{n=1}^{N_{S_i}} \left[w_{t,n}^{S_i} \times \begin{pmatrix} r_{t,n} \\ r_{t-1,n} \\ \vdots \\ r_{t-19,n} \\ r_{t-20,n} \end{pmatrix} \right]$$

Covariance matrix is determined for each *t* as:

$$Covar\_raw_{j,k}^t = Corr_{j,k}^t \times SV_t^{S_j} \times SV_t^{S_k}/252$$

Then,

For $j \neq k$: $Covar_{j,k}^t = Covar\_raw_{j,k}^t$

And for all *j*: $Covar_{j,j}^t = \begin{cases} Covar\_raw_{j,j}^t & \text{if: } abs\left(Covar\_raw_{j,j}^t\right) \geq 0.00000000001 \\ 0.000000004 & \text{if: } abs\left(Covar\_raw_{j,j}^t\right) < 0.00000000001 \end{cases}$

Then for all *t*: if $Covar\_raw^t$ is not positive definite, adjust the non-diagonal terms:

For $j \neq k$: $Covar_{j,k}^t = SV_t^{S_j} \times SV_t^{S_k}/252$

A daily vector containing risk-based weights, W_{t,S_i}^{opt} ,is then determined from t=0 onward, using an optimization which equates to:

$$W_{t,S_i}^{opt} = \text{argmin}_w \sum_i \left(\frac{\left|B_t^{S_i}\right| * \sqrt{w\Sigma^t w}}{\sum_i \left|B_t^{S_i}\right|} - \frac{w_i(\Sigma^t w)_i}{\sqrt{w\Sigma^t w}} \right)^2$$

$$\text{s.t.} \sum_i |w_i| = 1$$

For all i where $B_t^{S_i} > 0, w_i \geq 0$

For all i where $B_t^{S_i} < 0, w_i \leq 0$

For all i where $B_t^{S_i} = 0, w_i = 0$

Then, for all *i*: $W_{t,S_i} = \min\left(W_{S_i}^{max}, \max\left(W_{S_i}^{min}, W_{t,S_i}^{opt}\right)\right)$

5 Publication and Adjustments

5.1 Calculation Frequency and Dissemination

A value for the Index is calculated and published by the Calculation Agent on every Business Day which is not a Disrupted Day.

Closing levels for the Index are disseminated on Bloomberg Page SAVEMAC1.

On any day when the Index is not calculated, such as a Disrupted Day or otherwise, it is anticipated that no value for the Index will be disseminated in respect of such day, subject to the provisions set out below.

If a Disrupted Day occurs or is persisting, the Calculation Agent will publish a value for the Index which reflects the Index Level from the last business Day which was not affected by a Disrupted Day.

In calculating and determining the Index Level the Calculation Agent will refer to the methodology described herein. Unless otherwise stated, all calculations shall be made by the Calculation Agent and all such calculations, in the absence of manifest error, shall be final and binding.

5.2 Corrections

In the event that the Calculation Agent or the Sponsor determines that a material error has occurred in the calculation of the Index, the Calculation Agent, having consulted, or having been consulted by, the Sponsor, will endeavor to correct such error on a date agreed by the Sponsor. If a material error is corrected, the Sponsor shall apply the correction from the relevant date forward.

5.3 Disrupted Days

If, in the opinion of the Sponsor, a Disrupted Day has occurred on any Business Day, the Calculation Agent will publish the value for the Index which reflects the Index Level from the last Business Day which was not a Disrupted Day. As a consequence of a Disrupted Day(s), the exposure period to Components could be shorter or longer than if a Disrupted Day did not occur.

For the purpose of this Description, a Disrupted Day means any Business Day on which: (a) the Exchange fails to open for trading during its regular trading session; or (b) a disruption event (see Section 5.4) or adjustment event (see Section 5.5) occurs.

5.4 Disruption Events

The occurrence of any of the following events shall constitute a disruption event if, as determined by the Sponsor, they have a material impact on the Index:

Price Source Disruption: It becomes impossible, on any Business Day, to obtain a closing price or any other price level for any component or instrument that is referenced by the Index; or

Component Market Disruption Event: The occurrence or existence of (a) a trading disruption; (b) an exchange disruption at any time during the one hour period that ends at the regularly scheduled close of trading for any component of or instrument that is referenced by the Index on the Exchange; (c) an early closure (each as further described below); or (d) an announced disruption.

Macro Data Disruption: it becomes impossible, on any Business Day, to obtain values for Macro Data used for the determination of the Signals Table when such data would have been expected to be published and made available.

For the purpose of this Description:

trading disruption means any suspension of, or limitation imposed on, trading by the Exchange or otherwise and whether by reason of price-movements exceeding limits permitted by the Exchange or otherwise;

exchange disruption means any event (other than an early closure) that disrupts or impairs (as determined by the Calculation Agent and/or Sponsor) the ability of market participants to effect transactions in, or obtain market values for, any component of or instrument that is referenced by the Index;

early closure means, on any Business Day and in respect of any instrument or component referenced by the Index, the closure of the Exchange prior to its scheduled closing time, unless such earlier closing is announced by the Exchange at least one hour prior to the earlier of: (a) the actual closing time for the regular trading session on the Exchange on such Business Day; and (b) the submission deadline for orders to be entered into the Exchange's dealing system for execution on such Business Day; and

announced disruption means an announcement by the sponsor of any Component in any Business Day, or the Exchange that a disruption event has occurred and is continuing with respect to such Component(s) or the Exchange, as applicable, which disruption may include (but is not limited to) events which impair the accuracy of published Closing Price or any other price level for any component of or instrument that is referenced by the Index.

5.5 Adjustment Events

This Description, and each of the clauses herein, may be adjusted, amended, deleted or otherwise altered by the Sponsor at any time, acting in good faith and with the consent of the Calculation Agent, if the Index is no longer calculable pursuant to this Description. These adjustments may include, but are not limited to, adjustments required for clarification or for minor or technical reasons including (without limitation) to correct any manifest or proven error, to cure, correct or supplement any ambiguity or defective provision contained in this Description or any adjustment necessary to abide by a change in law with respect to the sale or purchase of any Component of an Component.

5.6 Index Disruption Fallbacks

If (i) a Disrupted Day occurs for 5 consecutive Business Days, or (ii) the Sponsor determines that (a) there is a discontinuation in the publication of prices for any component of or instrument referenced by the Index, (b) the use of any component of or instrument referenced by the Index has become prohibited, (c) the sponsor of any component of or instrument referenced by the Index has changed the specifications of such instrument or component, or (d) any component of or instrument referenced by the Index is modified or changed in any other way (except for a previously announced modification), or (e) any component of or instrument referenced by the Index has been or is likely to become terminated, then the Sponsor shall, in consultation with the Calculation Agent, have the right to:

- accept the closing level of any component of or instrument referenced by the Index published on any alternative price source;

- if no alternative price source is available, calculate a substitute Index Level based on the last published level of the component of or instrument referenced by the Index, and such level may be zero;
- select a substantially similar component for the Index or instrument to which the Index can be linked; and
- adjust, amend, or otherwise alter the Description in accordance with Section 5.5.

6 Changes in Methodology; Termination of Calculation of Index

6.1 Changes in Methodology

Market, regulatory, economic and/or other events or developments, including without limitation changes to, or the suspension or termination of any components for which values must be determined in relation to the Index, may occur which make a modification to the Index and/or this Index Description necessary or advisable. Such a determination shall be made by the Sponsor in its sole discretion, from time to time, based on such factors as it deems reasonable and appropriate at the relevant time.

The Index Sponsor, in its sole discretion, may add or remove Index components (and/or their underlying ETFs) due to reasons such as, but not limited to, liquidity, changes in behavior of components or ETFs, the determination that a different ETF (or other instrument) now exists that more appropriately fulfills the intended purpose for that component. In such cases, the transition will be carried out in a manner agreed with the Calculation Agent.

The Index Sponsor, in its sole discretion, may add, edit or remove Sub-Strategies due to reasons such as, but not limited to, liquidity, changes in behavior of components or ETFs, the ceasing of production or introduction of certain macroeconomic variables, a change in the availability of liquid ETFs that relate to a particular set of macroeconomic variables, a change in the restrictions on the types of financial instruments that can be used within the Index due to changes in regulatory or other circumstances. In such cases, the transition will be carried out in a manner agreed with the Calculation Agent.

The Index Sponsor, in its sole discretion, may add, remove, edit or adjust the use of, the Macro Data used to produce the Signals Table due to reasons such as, but not limited to, termination of publication of data, delays in receiving data, the introduction of a higher frequency version of the same or highly similar data, adjustments made to the data itself by the provider for whatever reason which materially affects its behavior, the newfound availability of data that better serves the originally intended purpose of a given data item, the finding that a given data item no longer serves the originally intended purpose. In such cases, the transition will be carried out in a manner agreed with the Calculation Agent.

Notwithstanding any of the foregoing rights, the Index Sponsor shall not have the right to either change or alter the Index methodology or to deviate (i.e., change, add or subtract) from the components of the Index (and/or their underlying ETFs or other financial instruments) if such change, alteration or deviation is primarily designed to improve the financial performance of the Index.

In the event the Sponsor determines that any modifications to the Index and/or this Index Description are necessary, which modifications cause the Calculation Agent to be unable to calculate the Index, the Sponsor may, in its sole and absolute discretion, appoint a successor Calculation Agent.

6.2 Termination

The Sponsor may, at any time and without notice, terminate its arrangements with the Calculation Agent and direct the Calculation Agent to cease the calculation and dissemination of the Index.