

METHODOLOGY

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1. INDEX DESCRIPTION

The QLAB Asset Allocation Index (the "Index") offers a dynamic (time varying) exposure across a defined range of assets within (the "Opportunity Set") representing US Equity Sectors, Single Commodities, Currencies (G10) and Fixed income (US Treasuries). Weights, to assets across the Opportunity Set, are generated by a proprietary systematic methodology developed by QLAB Invest (the "Index Calculation Agent").

2. INDEX CALCULATION

- Official index values are calculated and published by the Index Calculation Agent.
- The Index is calculated at the end of the day, in United States Dollar (USD) as a Total Return Index.
- Assets within the Opportunity Set are rebalanced at any point in time.
- The proprietary process of generating the continuous Index asset weights are independently maintained by QLAB Invest.

2.1 TOTAL RETURN CALCULATION

The Index takes into account estimated costs associated with replication using turnover based charges.

3. INDEX OPPORTUNITY SET

The index represents - at any point in time - a partial selection of the individual assets within the Opportunity Set of the index. Individual asset weights are subject to constraints in order to meet strategic restrictions in terms of underlying investment objectives.

ASSETS WITHIN THE OPPORTUNITY SET

MODULE	ASSET OPPORTUNITY SET
<i>M1</i>	ENERGY MATERIALS INDUSTRIALS HEALTH CARE CONSUMER STAPLES CONSUMER DISCRETIONARY TECHNOLOGY UTILITIES FINANCIALS
<i>M2</i>	WHEAT SUGAR COFFEE CRUDE OIL (WTI) ALUMINIUM COPPER NICKEL ZINC GOLD
<i>M3</i>	USD S/T EUR- $\text{\$}$ RATE (CASH) 2 YRS US TREASURIES 5 YRS US TREASURIES CAD/USD JPY/USD CHF/USD AUD/USD NZD/USD GBP/USD EUR/USD

- The Index will never hold exposure to all assets in the Opportunity Set simultaneously.

- Any potential changes in the Opportunity Set will only take place once annually, reported by the Index Calculation Agent in the first week of December, effective in January. Potential subtractions, substitutions or additions could be triggered, either for trading technical reasons, or with the objective of improving the diversification matrix.

- The assets selected for the Opportunity Set are intended to offer a maximum amount of liquidity and diversification potential.

- The algorithms governing the dynamic allocation structure of the Index are designed to exploit opportunities within each asset class, as well as shaping the overall risk level between the asset classes. For the latter reason, occasionally the Index can have a complete focus towards the less risky assets across the Opportunity Set.

4. INDEX STRATEGY

The objective of the Index is to offer improved risk adjusted performance compared to a naive portfolio equally distributed across the Opportunity Set. The Index Sponsor expects a volatility range of 4-6% and a return target of USD 1M Libor rate plus 3-5%, measured over a 36 months investment cycle.

4.1 METHOD

The basis of the Index strategy is to capture (or avoid) intermediate persistency across, and within, the opportunity set caused by excess tendencies in investor behavior. Thus, the underlying analytical processes do not attempt to predict any future market dependence to specific factors. Rather the focus is to tap into persistency in group behavior amongst investors in order to capture intermediate absolute outperformance within, and between, assets and asset groups. In particular, the proprietary processes are designed to seek capital protection by allowing for instant elimination of allocations to Equity Sectors and/or Commodities during adverse market conditions.

4.2 TACTICAL

The Index Sponsor has defined the Opportunity Set in three asset class Modules:

M1	US EQUITY SECTOR EXPOSURE
M2	INDIVIDUAL COMMODITY EXPOSURE
M3	2 & 5 YRS US TREASURIES AND LONG FX EXPOSURE WITHIN G10

The index will not at any time consist of allocations to all assets across the Opportunity Set.

From a tactical asset allocation perspective, the dynamic makeup of Index can be explained in four distinctive allocation Modes (1-4). The allocation levels in the table represent the maximum exposure allowed at any time.

	MODE 1	MODE 2	MODE 3	MODE 4
M1	25%	35%	0%	0%
M2	25%	0%	35%	0%
M3	50%	65%	65%	100%

Risk aversion

1. Smaller number of holdings in M1 and M2 automatically translate into a larger proportion allocated to the constituents of M3. This should be seen as a risk budgeting process to avoid concentration towards the higher volatility space of the Opportunity Set.
2. Assets with historically higher standard deviation gain lower weightings and vice versa. The method ignores covariance between the assets to safeguard against over optimisation in an attempt to avoid negative fat tails in the return distribution.
3. The weighing procedures to equity sectors and commodities include robust nonlinear processes, such as the *Cornish-Fisher Expansion*, aimed to compensate for fat tail risks apparent in these asset classes. The objective is to maintain a symmetric return distribution on the aggregate level and to protect the Index from exceeding drawdowns of a magnitude much larger than predicted by the volatility objective under strict normal (Gaussian) distribution assumptions.

4.3 ALLOCATION CONSTRAINTS (MAX)

Bottom-up

US EQUITY SECTORS	10%
SINGLE COMMODITIES	5%
US DEPO ON (CASH)	100%
US 2 YRS TREASURY	100%
US 5 YRS TREASURY	75%
G10 FX (LONG VS USD)	5%

Top down

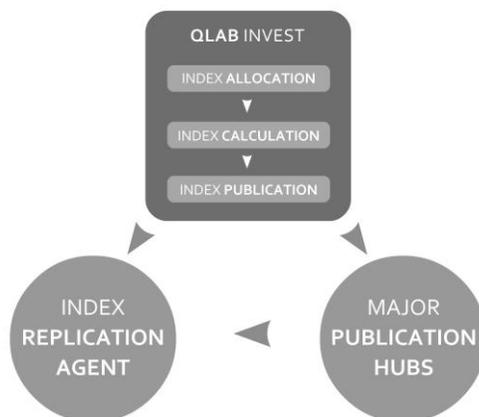
MAX AGGREGATE, US EQ SECTORS	35%
MAX AGGREGATE, COMMODITIES	35%
MAX AGGREGATE, US TREASURIES	100%
MAX AGGREGATE, FX (G10)	20%

At the top down level, if US Equity Sector and Commodity exposure coincides, the maximum aggregate exposure to each asset class equals 25%.

5. INDEX R&D COMMITTEE

The index committee will include four (4) members associated with the Index Sponsor. Its function is to monitor and discuss the ongoing research and development undertaken by the engineers behind the methodology of the Index. Changes or modifications in the algorithms of the Index must follow a signed document to the Index Calculating Agent in December representing a minimum of a 3 to 1 majority in favour of the modification. Should a requested update take more than 3 weeks to implement, then it is the responsibility of the Index Sponsor to communicate the nature of such modification within an appropriate time frame to the Index Calculating Agent, to ensure the modification to be effective in January.

6. SCHEMATIC OVERVIEW - INDEX CALCULATION AND DELIVERY



The index platform embraces integrity and independence

7. INDEX DEFINITION

The Index is calculated and published by QLAB Invest. The underlying constituents are tactically distributed across the index Opportunity Set and rebalanced whenever rebalancing signals are triggered. EOD changes in the Index are directly related to the aggregate weights across the Opportunity Set and the underlying instruments' daily changes in market price. Should any date be missing for any of the constituents, the latest officially available EOD price/fixing is used. Specifically this could be the case when a certain market within the Opportunity Set is closed whilst others are not. New asset weights following a rebalancing event are effective at the Index level from implementation date + 1

Data source of the index is Thomson Reuters via licensed feed to QLAB Invest applied in QLAB Index Engine where the Index values are derived.

The present (EOD) value of the index [I] at time [t] is derived by the following operation

$$I_t = I_{t-1} \sum_{CY-LR} \left(w_1 E_{E1} + \dots + w_n E_{En} + w_{C1} C_{r1} + \dots + w_{Cn} C_{rn} + w_D(1+Dr) + w_{T1} T_{r1} + w_{T2} T_{r2} + w_{FX1} FX_{r1} + \dots + w_{FXn} FX_{rn} \right)$$

WHERE

w_{En} = EQUITY SECTOR weight $E_{1 \rightarrow n}$

w_{Cn} = INDIVIDUAL COMMODITY weight $C_{1 \rightarrow n}$

w_D = US DEPOSIT ON weight D

w_{Tn} = US TREASURY NOTE weight $T_{1 \rightarrow n}$

w_{FXn} = FX weight $FX_{1 \rightarrow n}$

w represent aggregate asset weightings measured at time $t - 1$

AND

$$\text{EQUITY SECTORS} \Rightarrow E_{rn} = \frac{E_t}{E_{[t-1]}}$$

$$\text{INDIVIDUAL COMMODITY} \Rightarrow C_{rn} = \frac{C_t}{C_{[t-1]}}$$

US DEPO RATE $\Rightarrow Dr = (\text{ACTUAL} / 360) \text{AUS DEPO ON}\%$

$$\text{US TREASURY NOTE*} \Rightarrow T_{rn} = \frac{T_{nt}}{T_{n[t-1]}}$$

*Rolling of GLOBEX 3M future contracts (ZT and ZF),

$$\text{FX LONG VS USD} \Rightarrow FX_{rn} = \frac{SPOT_{nt}}{FWTN_{n[t-1]}}$$

$$\text{COLLATERAL YIELD} \Rightarrow CY = (\text{ACTUAL} / 360) \left(1 - \sum (w_{En} \dots w_{E1} + w_D) \right) * \text{AUS DEPO ON}\%$$

$$\text{REPLICATION CHARGE} \Rightarrow LR = (\text{ACTUAL} / 360) * \text{ALSC}\%$$

Note that [n] represent the specific number of the instrument within M1 - M3 respectively.
For M1, 10 Sectors are represented, thus $E_{1 \rightarrow 10}$

OTHER DEFINITIONS

$SPOT_{nt}$ = Thomson Reuters EOD FX fixing 9:15 pm GMT (implied as long foreign vs. USD)

$FWTN_{n[t-1]}$ = $SPOT_{n[t-1]}$ adjusted for Thomson Reuters FORWARD TN P/D rate multiplied by 0.0001 (implied as long vs. USD)

AUS DEPO ON% = Yield (MID) rate expressed in % (EOD fixing in Thomson Reuters)

ALSC% = Estimated turnover charges [1]

ACTUAL = Number of calendar days between t_t and $t_{[t-1]}$ counting t_t as one (1) and $t_{[t-1]}$ as zero (0)

[1] Based on Bid-Ask spreads: Equity sectors: 0.1% | Commodities: 0.2% | FX: 0.05% | US Treasuries: 0.05%

INDEX CONSTITUENTS

IDX MODULE	IDX COMPONENT		TYPE	DAILY PRICING
M1	ENERGY	Er1	TR INDEX	EOD, FIXING
	MATERIALS	Er2	TR INDEX	EOD, FIXING
	INDUSTRIALS	Er3	TR INDEX	EOD, FIXING
	HEALTHCARE	Er4	TR INDEX	EOD, FIXING
	CONSUMER STAPLES	Er5	TR INDEX	EOD, FIXING
	CONSUMER DISCRETIONARY	Er6	TR INDEX	EOD, FIXING
	TECHNOLOGY	Er7	TR INDEX	EOD, FIXING
	UTILITIES	Er8	TR INDEX	EOD, FIXING
	FINANCIALS	Er9	TR INDEX	EOD, FIXING
M2	WHEAT	Cr1	ER INDEX	EOD, FIXING
	SUGAR	Cr2	ER INDEX	EOD, FIXING
	COFFEE	Cr3	ER INDEX	EOD, FIXING
	CRUDE OIL (WTI)	Cr4	ER INDEX	EOD, FIXING
	ALUMINIUM	Cr5	ER INDEX	EOD, FIXING
	COPPER	Cr6	ER INDEX	EOD, FIXING
	NICKEL	Cr7	ER INDEX	EOD, FIXING
	ZINC	Cr8	ER INDEX	EOD, FIXING
	GOLD	Cr9	ER INDEX	EOD, FIXING
M3	USD S/T EUR- $\text{\$}$ RATE	Dr	TR CONTRIBUTED	EOD, FIXING
	2 yrs US Treasury	Tr1	FUTURE [GLOBEX]	EOD, FIXING
	5 yrs US Treasury	Tr2	FUTURE [GLOBEX]	EOD, FIXING
	CAD/USD	FXr1	TNEXT	EOD, FIXING
	JPY/USD	FXr2	TNEXT	EOD, FIXING
	CHF/USD	FXr3	TNEXT	EOD, FIXING
	AUD/USD	FXr4	TNEXT	EOD, FIXING
	NZD/USD	FXr5	TNEXT	EOD, FIXING
	GBP/USD	FXr6	TNEXT	EOD, FIXING
EUR/USD	FXr7	TNEXT	EOD, FIXING	

8. CONTACTS

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Disclaimer

The QLAB Asset Allocation Index is independently calculated and reported by QLAB Invest. The official index history was generated by QLAB Invest since Jan-2000 by applying the algorithms governing the allocation structure on a historical asset data set covering the opportunity set of the index (source Thomson Reuters). Index values prior to the official live inception do not represent historical live performance. Any references made to historical performance up to the official live inception do not reflect actual live performance and can be subject to selection, curve fitting and other statistical biases. Past performance is not necessarily indicative of future results and products replicating the index may carry charges in excess of the estimated costs accounted for in the index calculation. Any investments with the objective of exceeding the risk free rate of return will implicitly carry a degree of risk.

This document does not constitute an offer, a solicitation, an advice or a recommendation to purchase or sell any investment products associated with the indices described herein. The purpose of the Index Methodology is to describe the principles, constraints and main financial characteristics of the Index. Prior to an investment in a product tracking the Index, the investor should make his/hers own appraisal of the investment risks as well as from a legal, tax and accounting perspective, without relying exclusively on the information provided by the Index Calculation Agent. Investment products tracking the index must be issued or/and marketed by a regulated company. This document is strictly of informative purpose. The single source of the underlying asset data is Thomson Reuters and the Index Calculation Agent cannot guarantee the correctness of the underlying asset data and should not be held legally responsible in this regard. Performance in investment products linked to the index may be reduced by the effect of commissions, fees or other charges in excess of those already factored into the calculation, outlined in this document.