

METHODOLOGY

TICKERS

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DATASTREAM: NA

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1. DYNAMIC EXPOSURE

QLAB Dynamic Allocation Index uses dynamic exposure to the underlying index, the QLAB Asset Allocation Index. The algorithm exploits short term volatility in Equities, Commodities and FX to calculate the forward looking 1 month drawdown risk in the underlying index and takes into account the prevailing drawdown at month end in order to adjust the exposure rate to be taken the next month following month end calculation. An integrated part of the algorithm is a worst drawdown acceptance, which is set to -15%. This is however an objective rather than a guarantee. Under certain circumstances one could envisage a drawdown exceeding this objective.

The maximum exposure to the underlying index described in this document equals 300%

The daily calculation of QLAB Dynamic Allocation Index becomes

$$I_t = I_{t-1} (1 + E_{t-1} (IR_{t-1} - RF_{t-1})) + RF_{t-1}$$

where

I_t	The QLAB Dynamic Index value published in the morning each market day as well as Saturdays
E_{t-1}	The previous day's effective exposure rate to the underlying index
IR_{t-1}	The previous day's underlying index return
RF_{t-1}	The previous day's borrowing rate represented by USD S/T EUR- $\$$ RATE

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- Exposure rate > 100% is facilitated via futures in the prevailing allocation of the underlying index.
 - The next pages deal with explaining the underlying index, QLAB Asset Allocation Index, the base for QLAB Dynamic Allocation Index.

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 each asset within the Opportunity Set, are generated by a proprietary systematic methodology developed by QLAB Invest Ltd (the "Index Calculation Agent"). New index weights are generated monthly.

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 monthly.
- The proprietary process of generating the monthly Index asset weights are independently maintained by QLAB Invest.

2.1 TOTAL RETURN CALCULATION

The Index takes into account costs associated with replication.

Specifically

- a) Collateral yield is based on the official US S/T EUR- $\$$ rate.
- b) Replication adjustment of 0.30% p.a.

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. The individual weightings are subject to constraints in order to comply with the prevailing UCITS III rules as well as 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 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 be completely geared 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 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 in investor behaviour. 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 behaviour amongst investors in order to capture intermediate absolute outperformance within, and between, assets and asset groups. In particular, the proprietary processes are geared towards protection of capital by allowing for instant elimination of allocations to Equity Sectors and/or Commodities, during certain (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 translates into a larger proportion allocated to the constituents of M3. This should be seen as a risk budgeting process implemented 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 procedure to equity sectors and commodities include robust nonlinear processes, such as the *Cornish-Fisher Expansion*, to compensate for fat tail risks apparent in these asset classes. The objective is to maintain a symmetric return distribution and to protect the Index from draw downs of a magnitude much larger than projected 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

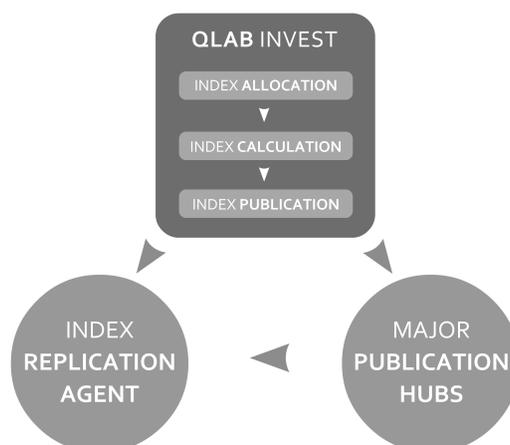
MAX AGGREGATE, US EQ SECTORS	35%
MAX AGGREGATE, COMMODITIES	35%
MAX AGGREGATE, US TREASURIES	100%
MAX AGGREGATE, FX (G10)	20%

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 QLAB Asset Allocation Index is calculated and published by QLAB Invest. The underlying constituents are tactically distributed across the index Opportunity Set and rebalanced monthly. 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 monthly asset weights are effective EOM+2.

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

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

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

WHERE

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

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

wD = US DEPOSIT ON weight D

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

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

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

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

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

$$\text{COLLATERAL YIELD} \Rightarrow CY = (ACTUAL / 360) \left(1 - \sum (wE_n \dots wE_1 + wD) \right) * \text{AUS DEPO ON}\%$$

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

Note that [n] represent the specific number of the instrument within M1 - M3 respectively.

For M1, 10 Sectors are represented, thus $E_{r1 \rightarrow 10}$

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% = 0.30% replication charge

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

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- $\$$ 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 and QLAB Dynamic Allocation Index are 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.

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