

HFR

Hedge Fund Research, Inc.



HFRI-I Liquid Alternative UCITS Indices Defined Formulaic Methodology

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HFRI-I Liquid Alternative UCITS Index

Eligibility Criteria

The process begins with screening the HFR Database of active liquid alternative UCITS funds. Funds eligible to be index constituents must meet the following criteria:

- Confirmed to be UCITS compliant
- Performance reported net of all fees in USD or in other currencies converted or hedged to USD
- Reports NAV on a daily basis
- Manages at least \$30mm in AUM in the fund
- Provides daily redemption liquidity and T-3 redemption / subscription notice and T+3 redemption / subscription settlement or better
- Minimum 6 months of track record for the strategy
- Open to new investment

The performance of the Index is denominated in USD and is published daily on a T+1 basis.

In the case where a constituent fund of the Index becomes ineligible, the fund will be removed and/or replaced, either at rebalance or mid-quarter within a timeframe consistent with notice and subscription periods, trade dates and settlement. The allocation percentage from the removal will be allocated in whole or in part to a new eligible fund or allocated to one or more existing eligible funds, in the sole discretion of the Index Administrator. The allocation percentage may remain unallocated for a period of time until a new eligible fund or funds is / are identified. In the event a daily NAV cannot be ascertained from normal pricing sources and/or daily liquidity is no longer available, due to suspension, liquidation, or other reason, the Index Administrator, in its reasonable judgement and sole discretion, may apply a reduced NAV, including a valuation of zero, based on available information and taking the most conservative view as to what the value could be within the funds normal liquidity period. At the sole discretion of the Index administrator the ineligible fund may be carried in the index for a short period of time until it becomes eligible or liquidates for value or may be treated as having zero value and permanently removed from the index.

Selection Process

The following formula is used to define the representative UCITS Strategy Universe (“Strategy Universe”) derived from the UCITS Liquid Alternative Universe contained in the HFR Database. The UCITS Liquid Alternative Universe is expressed as:

$$HFU = \bigcup HFS$$

where *HFS* is the set of UCITS compliant funds classified by strategy in the HFR Database.

The funds comprising the HFS are filtered using the following formula to create the Strategy Universe

$$\delta(1 - UCITS) \cdot \delta(1 - freq) \cdot \delta(AUM \geq 30mm) \cdot \delta(1 - fees) \cdot \delta(M < 6) \cdot \delta(1 - liq) \cdot \delta(1 - open) \neq 0$$

where $\delta(x)$ is the delta function defined as

$$\delta(x) = \begin{cases} 1 & x = 0 \\ 0 & x \neq 0 \end{cases}$$

and

- *UCITS* is confirmed UCITS fund (1=yes, 0=no)
- *freq* is the reporting frequency in business days (1=daily, 0=otherwise)
- *fees* is the returns net of all fees (1=yes, 0=no)
- *M*=total number of months reported (M<6: 1, otherwise: 0)
- *liq* is the redemption liquidity (1=daily, 0=otherwise)
- *open* indicates the fund is open to new investment (1=open, 0=otherwise)

In cases where a manager lists multiple funds with the same or similar investment profile, HFR chooses only the most representative fund for HFRI-I Liquid Alternative UCITS Index inclusion.

Definitions

For the clarity of the rebalance process we define:

- **Rebalance Date:** the first business date of the calendar quarter.
- **Evaluation Date:** the month prior to the Rebalance Date.
- **Eligibility Criteria:** performance and assets under management reported monthly in USD, net of all fees, and with the required liquidity.

Quarterly Index Rebalance

The following rebalance methodology is applied on HFRI-I Liquid Alternative UCITS Index:

- The eligible universe of constituents is determined at the Evaluation Date.
- The constituents are selected based on their Eligibility Criteria as of the Evaluation Date.
- The HFRI-I Liquid Alternative UCITS Index constituents for the Rebalance Date are selected on the Evaluation Date.
- Each constituent is assigned with the same weight on each Rebalance Date.
- A maximum number of constituents from each firm may be limited for optimal Index diversification purposes.
- The Index is rebalanced on a quarterly basis.

Additional Rebalance Considerations

- Additional changes to the pool of funds or their weights may be taken on a more frequent basis to address specific concerns of any fund such as risk, liquidity, due diligence, minimum investment size, subscription or redemption fees, concentration or other issues which may materially affect the Index, including regulatory issues. If a fund ceases to satisfy any of the Eligibility Criteria required for inclusion into the Index between rebalancing dates, HFR may decide to remove the fund from the Index. If a fund is removed, HFR will either replace it with another fund within the same strategy provided it satisfies the criteria for inclusion, or may remain constant NAV until next Rebalance date.
- An Index constituent may be removed from the Index if it fails to meet the Eligibility Criteria on or before the Rebalance Date. In such a case, the weight of the constituent would remain constant NAV until next Rebalance date or allocated to a replacement prospective constituent. An Index constituent may be replaced or removed with another qualifying prospective constituent between rebalance dates as required. Such events would include without limitation, due diligence concerns, inability to maintain a constituent weight due to lockups, gates or other circumstances.
- If an Index constituent's weight cannot be maintained between Rebalance Dates, the constituent may remain in the Index at a reduced weight, its weight may remain constant NAV until next Rebalance date or it may be replaced with a similar qualifying prospective constituent as available.
- Under certain special circumstances certain constituents may remain in the Index on a limited or temporary basis. Examples of these include, but are not limited to, constituents subject to liquidation, closure to new investments, regulatory matters, or suspension of redemptions. The specific treatment of constituents under special circumstances includes:

- Index Constituent enters liquidation process.

Index Constituents subject to liquidation are kept in the Index until liquidation is completed. The weighting of the constituents is adjusted in the Index to reflect its liquidity and redemption schedule. The weight of the constituent that becomes available through this process is then remain constant NAV until next Rebalance date within the same strategy or replaced by a qualifying fund.

- Index Constituent becomes closed to new investments.

Index Constituents that become closed to new investment before the Rebalance Date may remain in the Index with a weight that can only increase due to the performance of the constituent and does not increase during the Index rebalance.

- Index Constituents that undergo significant adverse circumstances.

Index Constituents that undergo significant adverse circumstances or due diligence concerns such as: large investor redemptions, critical personnel loss, an audit holdback, a side pocket implemented, redemptions suspended / gate activated, reduced liquidity of liquidating constituent, money laundering charges, cyber security breach / damaging client info leaked or stolen, fraud, breach of any law, regulation or rule, major reputation hurting story or any similar intervening circumstance, may be subject to removal from the Index before the Rebalance Date. The removal from the Index will follow the liquidity and redemption terms of the constituent whereby the constituent weight will be reduced until its full Index removal. The weight of the constituent that becomes available through this process is then allocated to the remaining constituents of the Index within the same strategy.

Index NAV Calculation

HFRI-I Liquid Alternative UCITS Indices (the “Index” and collectively, “Indices”) are total return indices and are published by HFR at www.hedgefundresearch.com and on Bloomberg. Computation of the Index NAV uses actual performance of constituent funds as reported to Hedge Fund Research, Inc. Performance reflects constituent fund management fees, incentive fees, dividends and other distributions.

The Index NAV is 1000 at inception where “ $t=0$ ”. The NAV changes are driven by the Index performance, which is defined as the percentage change in the value of the Index from a previous date “ $t-1$ ” to current date “ t ”. The NAV at “ t ” is defined as

$$NAV_t = NAV_{t-1} \times (1 + ROR_t)$$

Where ROR_t is the percentage change in the total value of the Index from “ $t-1$ ” to “ t ”:

$$ROR_t = \sum_{i=1}^n \left(w_t^i - \frac{w_c}{n} \right) \times ROR_t^i + w_c \times ROR_{MM} - BR - F$$

where ROR_t^i is the total return of constituent i at time “ t ”, n is the number of constituents in the Index and w_t^i is the weight of constituent i at time “ t ” computed as

$$w_t^i = \frac{(1 + R_{t-1}^i)}{\sum_{j=1}^n (1 + R_{t-1}^j)}$$

where R_{t-1}^i is the cumulative total return of constituent i between the rebalance date “ T ” and time “ $t-1$ ”:

$$1 + R_{t-1}^i = \prod_{t'=T}^{t-1} (1 + ROR_{t'}^i).$$

and ROR_t^i is the rate of return of fund “ i ” at time “ t ” defined as:

$$ROR_t^i = \frac{NAV_t^i + Div_t^i + C_t^i}{NAV_{t-1}^i} - 1$$

where Div_t^i is the dividend declared for the ex-dividend date, n is the number of funds in the index, C_t^i represents any corporate action that takes effect at time " t ", w_c is a weight corresponding to an allocation to a generic money market account, liquid fund or cash equivalent, with a ROR_{MM} return, BR is the Basis Risk¹ between the theoretical index calculation and actual index calculation², and F corresponds to a constituent share class adjustment of 50 bps/ann.

On the rebalance date " T " the weight of constituent i is set to:

$$w_T^i = \left(\frac{1}{n} - w_{T-x}^i \right) \cdot \frac{NAV_{T-x}}{NAV_{T-1}} + w_{T-1}^i$$

where " x " corresponds to the number of business days (5) prior to the rebalance date when the constituents of the index for the new quarter are determined.

¹ Current calculation assumes $BR=0$.

² Calculation of a net performance return would reflect all administrative costs associated with running an investable index product, including but not limited to administrative fees, custody and trustee fees, management fees, rebalancing fees and trading costs.

Number of Funds and Index Weighting

The HFRI-I Liquid Alternative UCITS Index will have a minimum number of funds of 140.

The HFRI-I Liquid Alternative UCITS Index is equally weighted on the rebalance date across the selected funds. The HFRI-I Liquid Alternative UCITS Strategy Indices are also equally weighted on the rebalance date across the selected funds in each of the four main strategies: Equity Hedge, Event-Driven, Macro and Relative Value. The performance of the Indices is denominated in USD. The number of funds within each of the four main strategies will be selected in a manner seeking to achieve the strategy weightings of, or correlation to, those of the HFRI Asset Weighted Composite (Adjusted) Index.

Index Disruption Event

“Index Disruption Event” means:

- (1) where, in the determination of Hedge Fund Research, Inc., it is not possible or it is not reasonably practicable for it to determine the price or value of a constituent; or
- (2) a value for a constituent is not announced or is otherwise unavailable when such announcement or availability would normally be scheduled; or
- (3) the occurrence of an event or circumstance (including, without limitation, a major market disruption, a systems failure, natural or man-made disaster, act of God, armed conflict, act of terrorism, riot or labor disruption or any similar intervening circumstance) that Hedge Fund Research Inc. determines affects the Index.
- (4) the occurrence of other event or circumstance (including, without limitation, a personnel loss, a significant client(s) redemption, an audit holdback, a side pocket implemented, redemptions suspended / Gate activated, reduced liquidity of liquidating constituent, money laundering charges, Cyber security breach / Client info leaked or stolen, Fraud, breach of any law, regulation or rule, Market specific short bans or suspensions, Major reputation hurting story or any similar intervening circumstance) that Hedge Fund Research Inc. determines affects the Index.

If, in the determination of Hedge Fund Research, Inc., any of the foregoing is material.

Upon the occurrence of an Index Disruption Event on any day on which the official closing level of the Index is scheduled to be published, Hedge Fund Research, Inc. (i) shall not calculate and publish the Index Level and/or (ii) if relevant, may make such adjustments to the provisions of the Index to account for such Index Disruption Event as it determines appropriate, including, without limitation, delaying the application of any procedures or requirements of the Index.

Notes:

- The Indices are rebalanced on the last business day of the quarter.
- The HFRI-I Liquid Alternative UCITS Indices are updated daily on a T+1 basis. Index NAV is not published on any day where constituent funds are closed for trading, as per trading calendar.
- Any historic performance corrections will be incorporated into future Index NAVs.
- Duplicate share classes of funds are not considered as Index constituents.

Accompanying Notes

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Addendum – Revisions to the Methodology

Date	Revision	Process
10/29/2018	Changed index fee from 40 bps to 65 bps per annum to performance	Calculation adjustment of historical and live performance time series to reflect change in index fees
		Loading of daily data to SQL server table
		Loading of monthly data to Trakker record
		Publishing new index performance to website
		Update index methodology document to reflect change in fees
10/29/2018	Name change: From HFRI-I USD Index to HFRI-I Liquid Alternative UCITS Index	Adjustment of index name on Trakker record
		Adjustment of index name on website
11/01/2018	Index ticker assigned as HFRILAU	Recording of index ticker on Trakker record
		Recording of index ticker on website record
1/16/2019	Removed Appendix	Removed Appendix from methodology document
1/17/2019	Added paragraph describing process to deal with a constituent becomes ineligible	Language added in the “Eligibility Criteria” section of this document
1/17/2019	Expanded return formula to provide more detail of NAV computation	Expanded return formula in current document to provide more detail of NAV computation
2/5/2019	Added formula clarifying weight of constituents at the beginning of each quarter	Added formula in current document clarifying weight of constituents at the beginning of each quarter
2/22/2019	The index fee was changed to 50 bps p.a. and a minimum AUM of \$30mm requirement for constituents were included in the index methodology	The historical performance of the indices was revised to reflect the refinement in the methodology.

4/25/2019	Minimum number of Funds, Benchmark of HFRI AWC (Adjusted) Index and T-3/T+3 liquidity requirement was added to the Methodology. "Index Fee" was changed to "constituent share class adjustment"	No constituents or performance changes were made.
5/3/2019	"Open to new investment" was added as an eligibility condition	No constituents or performance changes were made.
5/31/2019	"Manages at least \$30mm in AUM in the strategy" was changed to "Manages at least \$30mm in AUM in the fund"	No constituents or performance changes were made.
5/31/2019	"Minimum 6 months of track record" was changed to "Minimum 6 months of track record for the strategy"	No constituents or performance changes were made.
6/3/2019	Updated the eligibility criteria narrative in page 3.	No constituents or performance changes were made.
6/14/2019	Clarified in the Notes section that the rebalance is done on the last business day of the quarter.	No constituents or performance changes were made.
6/14/2019	Clarified in the Notes section the definition of trading day.	No constituents or performance changes were made.
6/14/2019	Indicated in the Notes that Any historic performance corrections will be incorporated into future Index NAVs.	No constituent or performance changes were made
12/18/2019	Added 'Definitions', 'Quarterly Index Rebalance', 'Additional Rebalance Considerations' and 'Index Disruption Event' sections.	No constituent or performance changes were made
3/27/2020	Removed 'Value-at-Risk' description in fund screening section.	No constituent or performance changes were made