

HFR Blockchain Indices

Defined Formulaic Methodology

© 2020 Hedge Fund Research, Inc. - All rights reserved. HFR®, HFRI®, HFRX®, HFRU®, HFRQ®, HFRL™, WWW.HEDGEFUNDRESEARCH.COM®, HEDGE FUND RESEARCH™, HFR IndexScope™, HFR Bank Systematic Risk Premia IndicesSM and HFR Risk Parity Indices™ are the trademarks of Hedge Fund Research, Inc.

Contents

INTRODUCTION	2
METHODOLOGY	4
Eligibility Criteria	4
Index NAV Calculation	5
Index Disruption Event.....	7
STRATEGY DESCRIPTIONS	8
APPENDIX. HFR BLOCKCHAIN INDICES UPDATE SCHEDULE	9

Introduction

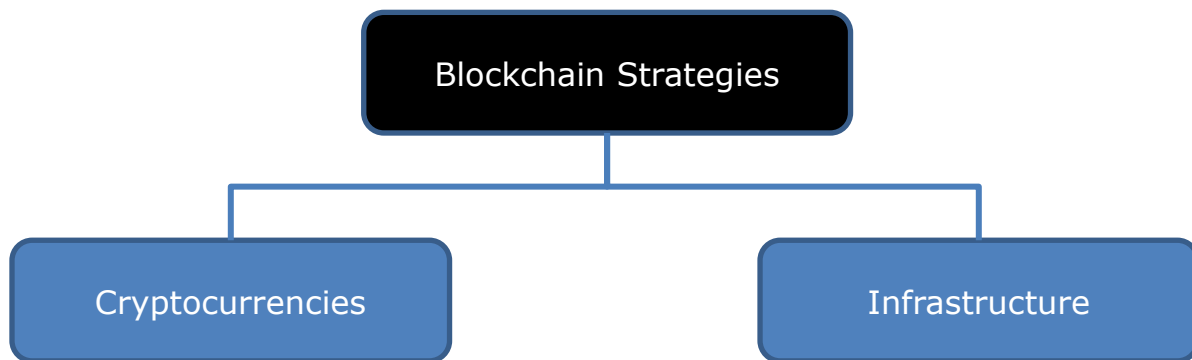
Hedge Fund Research, Inc. (HFR) is a research firm specializing in the collection, aggregation, and analysis of alternative investment information. HFR produces the HFR Hedge Fund Database, one of the industry's most widely used commercial databases of hedge fund performance, as well as a variety of other research products for the alternative investment industry, including the HFR Industry Report.

The HFR Hedge Fund Database is currently comprised of over 6800 alternative investment products worldwide. Information on the hedge fund universe of established and emerging managers is collected directly from the fund managers and/or their respective offshore administrators, while other pertinent information is culled from offering memoranda, onsite visits, and due diligence interviews. HFR requests that the client fund managers report performance by the 15th of each month. It also directly integrates the fund managers with the HFR Hedge Fund Database by providing them with their own website for updating their fund profile. In this manner HFR ensures current and accurate fund data that flows seamlessly from fund managers.

HFR Blockchain Indices

The HFR Blockchain Indices are a series of benchmarks designed to reflect the performance of fund managers investing in blockchain digital currency and distributed ledger technologies.

The Blockchain strategy is subdivided into two substrategies: Cryptocurrency and Infrastructure technology. Fund managers focusing in Cryptocurrency utilize a variety of trading strategies to profit from exposure to bitcoin, ethereum and other digital currencies. Managers focusing in Infrastructure invest in companies developing blockchain and other distributed ledger technologies which are fundamentally disintermediating payments, banking, market trading structure, IOT, healthcare, remittances, supply chains, digital identity and more.



In order to be considered for inclusion in the HFR Blockchain Indices, a fund manager must submit fund performance to HFR Database. Funds are eligible for inclusion in the HFR Blockchain Indices the month after their addition to HFR Database. For instance, a fund that is added to HFR Database in June is eligible for inclusion in the indices upon reporting their July performance. Additionally, all HFR Blockchain Indices constituents are required to report monthly, net of all fees performance and assets under management in U.S. dollars.

Methodology

HFR Blockchain Indices are fund-weighted (equal-weighted) indices. Unlike asset-weighting, the equal-weighting of indices presents a more general picture of performance. Any bias towards the larger funds potentially created by alternative weightings is greatly reduced, especially for strategies that encompass a small number of funds.

The HFR Blockchain Indices are designed to be utilized by fund managers as a benchmark for their own funds. The HFR Blockchain Indices include funds managing cryptoassets, cryptocurrencies (e.g. bitcoin, ethereum, etc.), decentralized application tokens and protocol tokens, block-chain based assets, and other cryptofinance and digital assets (collectively, 'Digital Assets') strategies. HFR Blockchain Indices are rebalanced on a quarterly basis. Due to mutual agreements with the fund managers listed in the HFR Database, we are not at liberty to disclose the particular funds behind any index to non-database subscribers.

Eligibility Criteria

Funds included in the HFR Blockchain Indices must:

- Report monthly returns
- Report Net of All Fees Returns

The following formula is used to define the representative Hedge Fund Strategy Universe ("Strategy Universe") derived from the Global Hedge Fund Universe contained in the HFR Hedge Fund Database. The Global Hedge Fund Universe is expressed as:

$$HFU = \bigcup HFS$$

where HFS is the set of funds classified as blockchain strategies in the HFR Hedge Fund Database.

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

$$\delta(\text{freq} - 12) \cdot \delta(\text{fees}) \neq 0$$

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

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

and

- *freq* is the reporting frequency (12=monthly, 4=quarterly)
- *fees* is the returns net of all fees (0=yes, 1=no)

In cases where a manager lists multiple funds with the same or similar investment profile, HFR chooses only the most representative fund for HFR Blockchain Indices inclusion. HFR reserves the right to remove a fund from an index if it deems it not to be representative of its strategy.

Index NAV Calculation

HFR Blockchain Indices (the “Index” and collectively, “Indices”) are total return indices and are published by HFR at www.hedgefundresearch.com and on Bloomberg. HFR Blockchain Indices are rebalanced on a quarterly basis. 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*”.

At rebalance time “*t*”, constituents are equal weighted so the *NAV* of the HFR Blockchain Index is defined as

$$NAV_{t_0} = NAV_{t_0-1} \times (1 + ROR_{t_0})$$

where ROR_{t_0} is the percentage change in the total value of the Index from “*t*₀-1” to “*t*₀” computed as:

$$ROR_{t_0} = \frac{1}{n} \sum_{i=1}^n ROR_{t_0}^i$$

where $ROR_{t_0}^i$ is the rate of return of constituent *i* at time “*t*₀” and *n* is the number of constituents in the Index.

The NAV of the HFR Blockchain Index at any other times “ t ” is computed 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 ” as follows:

$$ROR_t = \sum_{i=1}^n w_t^i \times ROR_t^i - F$$

where ROR_t^i is the total return of constituent i at time “ t ”, and F corresponds to an index adjustment of 2 bps/month for HFR Blockchain Indices. n is the number of constituents in the Index and w_t^i is the weight of constituent i at the beginning of month “ 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_0 ” and time “ $t-1$ ”:

$$1 + R_{t-1}^i = \prod_{t'=t_0}^{t-1} (1 + ROR_{t'}^i)$$

If a constituent k ceases to be a constituent of the Index at given time t' before the rebalance date, its weight is then equally distributed to the remaining constituents in the Index; the new constituent weights are given by

$$w_{t'}^i = w_{t'}^i + \frac{1}{n-1} \cdot w_{t'}^k, \quad \text{with } i \neq k$$

with $i \neq k$.

HFR Blockchain Indices are calculated grouping qualifying funds according to one or more classification criteria. The HFR Blockchain Index includes all qualifying single manager funds and excludes fund of funds. The HFR Cryptocurrency Index corresponds to the subset of manager funds that focus on cryptocurrencies.

Indices Notes:

- Funds are eligible for inclusion in the HFR Blockchain Indices the month after their addition to HFR Database. For instance, a fund that is added to HFR Database in June is eligible for inclusion in the indices upon reporting their July performance.
- The HFR Blockchain Indices are updated three times a month: Flash Update (5th business day of the month), Mid Update (15th of the month), and End Update (1st business day of following month)
- The current month and the prior three months are left as estimates and are subject to change. All performance prior to that is locked and is no longer subject to change.
- If a fund liquidates/closes, that fund's performance will be included in the HFR Blockchain Indices as of that fund's last reported performance update.

Index Disruption Event

“Index Disruption Event” means:

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.

Strategy Descriptions

Funds managing Blockchain strategies broadly fall into two sub-strategies:

- **Cryptocurrency:**

Investment Managers trade in cryptocurrency directly. The primary purpose of the strategy is to trade cryptocurrency, seeking profits by investing in or shorting bitcoin or other digital currencies. The overall investment thesis is to provide returns through an actively managed portfolio of cryptocurrency assets. Managers may use a variety of trading strategies that can be discretionary techniques or employ a variety of automated bitcoin trading algorithms to analyze the market, and then adjust their portfolios as necessary. These trading strategies include, but are not limited to, arbitrage, event-driven and momentum.

- **Infrastructure:**

Managers invest in blockchain, other digital assets technology and other investments related to emerging blockchain protocols. Infrastructure strategy aims to offer access to the most promising, cutting-edge, blockchain companies in the digital asset space. Managers focus on how blockchain technologies have begun to, and will continue to, fundamentally change payments, banking, market trading structure, Internet of Things (IoT), healthcare, remittances, supply chains, digital identity and more. In addition, key themes include cloud storage, decentralized computing, digital investment platforms and on-chain fund tokens, blockchain infrastructure protocols and promising innovations involving token interconnectivity and transaction scalability.

Appendix.

HFR Blockchain Indices Update Schedule

The HFR Blockchain Indices are updated three times a month. The Flash Update (5th business day of the month), Mid Update (15th of the month - or nearest business day), and End Update (1st business day of following month). Please note that the HFR Blockchain Indices are not published on New York Stock Exchange (NYSE) non-trading holidays, but on the following business day.

Specific update schedule can be found in HFR's website:

https://www.hedgefundresearch.com/HFRD_update_schedule.htm

Accompanying Notes

The information contained in this report was prepared by Hedge Fund Research, Inc., and may be distributed by one or more of its affiliates.

Published by Hedge Fund Research, Inc. Reproduction in whole or in part prohibited except by permission. Information has been obtained by Hedge Fund Research, Inc. from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, Hedge Fund Research, Inc. or others, does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omission or for the results obtained from the use of such information. Hedge Fund Research, Inc. analyses are not recommendations to purchase, sell, or hold a security, in as much as they do not comment as to suitability for a particular investor. The analyses are based on current information furnished to Hedge Fund Research, Inc. by the fund(s). Hedge Fund Research, Inc. does not perform an audit in connection with any analyses and may, on occasion, rely on unaudited financial information. Any data presented may be changed, suspended, or withdrawn as a result of changes in, or unavailability of, such information, or based on other circumstances.

HFR Blockchain Indices Index information is publicly available at www.hedgefundresearch.com and is subject to change at any time without notice. The HFR Blockchain Indices are compiled by Hedge Fund Research, Inc. and are not investable products and are provided for informational purposes.

Document last updated May 18, 2020.

Hedge Fund Research, Inc.
10 S. Riverside Plaza, Suite 700
Chicago, IL 60606
(312) 658-0955
indices@hfr.com
www.hedgefundresearch.com

Addendum – Changes to the Methodology

Date	Revision	Process
5/18/2020	An index adjustment term has been added to the index performance calculation. Beginning June 2020, HFR will adjust the performance of the HFR Blockchain Indices by 2bps per month.	No performance has been affected.