HFR Bank Systematic Risk Premia Indices

Defined Formulaic Methodology

2020

Table of Contents

Introduction

Hedge Fund Research, Inc. (HFR) operates through its wholly owned subsidiaries:

HFR Index, LLC:

- HFR Index, LLC is the Institutional Standard and the established, global leader in the indexation and comprehensive performance benchmarking of the global hedge fund and bank risk premia industry. HFR Index publishes over 150 indices across the HFRI, HFRX and HFRU Index families which are recognized globally as the definitive benchmarks of hedge fund industry performance. HFR Indices are effectively and actively utilized by leading pension and sovereign wealth funds, global financial institutions, individual investors and hedge fund managers.

HFR Research, LLC:

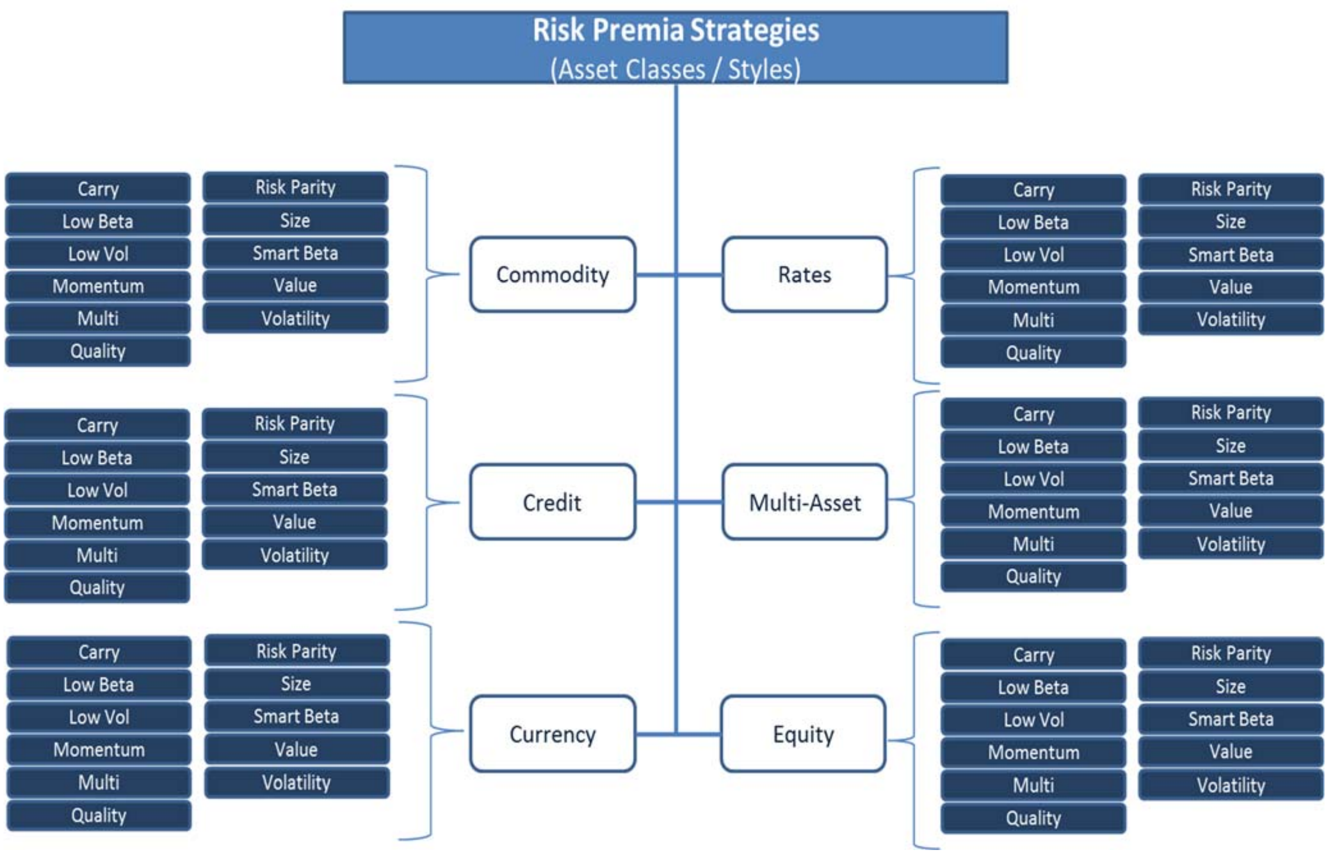
- HFR Research specializes in the collection, aggregation, and analysis of alternative investment information. HFR Research produces the HFR Hedge Fund Database, one of the industry's most widely used commercial databases of hedge fund and Risk Premia strategies, as well as a variety of other research products for the alternative investment industry, including the HFR Industry Report.
  The HFR Hedge Fund Database is currently comprised of over 6900 funds and fund of funds worldwide. Information on the hedge fund and Risk Premia universe of established and emerging managers is collected directly from the fund managers and/or their respective administrators, while other pertinent information is pulled from offering memoranda, onsite visits, and manager interviews. 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.

Methodology

The HFR Bank Systematic Risk Premia Strategy Indices is a family of indices designed to represent the aggregate performance of various style/asset class strategy categories of bank systematic risk premia strategy industry. Hedge Fund Research, Inc. utilizes a UCITS compliant methodology to construct the indices and the methodology is based on defined and predetermined rules and objective criteria to combine and rebalance components that represent various asset class and style strategies.

The indices are updated daily with the levels available through HFR's website and other authorized distributors on a t+1 basis.

HFR Bank Systematic Risk Premia Strategy Indices
The component strategies are self-organized according to style and asset class (e.g. "commodity carry") by their bank providers. The returns for the strategies in each category are then combined by first normalizing their volatilities to a target level, then equal-weight combining them.



HFR Bank Systematic Risk Premia Thematic Indices
HFR produces thematic HFR BSRP Indices which include components that cross risk premia asset classes and styles in order to meet a common investment objective. Thematic categories include Alternative Income, Risk Mitigation and Trend-Following strategies.

Thematic HFR BSRP Indices are compiled using the following inclusion criteria:

1. Character of return for the component strategy meets investment objective criteria.
2. Inclusion of the component strategy diversifies the method for achieving criteria (e.g., cross-sectional momentum versus time-series momentum).
3. Inclusion of the component strategy results in diversification among the banks that publish such strategies.

Eligibility Criteria

Constituents included in the HFR Bank Systematic Risk Premia Indices must:

- Be a systematic risk premia strategy published by a bank
- Report daily returns
- Report Net of All Fees returns

The following formula is used to define the representative Risk Premia Fund Universe ("Strategy Universe") derived from the Global Risk Premia Fund Universe expressed as:

$$HFU = \bigcup HFS$$

where *HFS* is the set of bank risk premia strategies classified according to their asset class and style.

The strategies comprising the HFS are filtered using the following formula to create the Strategy Universe for a given target volatility:

$$\delta(freq - 1) \cdot \delta(fees) \neq 0$$

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

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

and

- *freq* is the reporting frequency (1=daily, 30=monthly)
- *fees* is the returns net of all fees (0=yes, 1=no)

In cases where a provider bank lists multiple risk premia strategies with the same or similar investment profile, HFR chooses only the most representative strategy for HFR Bank Systematic Risk Premia Strategy Index inclusion.

Each HFR Systematic Risk Premia Index (the "Index") is comprised of a weighted sum of bank-provided investable strategies. This document provides the generic rules for calculating the Index values.

Definitions

- **Business days:** Business days are all days excluding weekends.
- Pi(t) = Price for strategy i at time t where t is a business day. Holidays shall be filled forward[1] with the price from the most recent business day that a price was posted.
- N(t) = number of strategies in the Index at time t
- A = exponential moving average weighting factor
- TV = volatility factor
- RT = return threshold (for filtering out zero-return days)
- SWi = Weight for strategy i
- CFi = cost factor for strategy i (the swap-level execution cost)
- F = an index adjustment of 2 bps/month
- Ri(t) = daily return for strategy i for period t
- Vi(t) = volatility weighting factor for strategy i for period t
- Wi(t)= weight for strategy i for period t

[*] The strategy names, tickers, and the index parameters are listed in the Appendix

- Qi(t) = cumulative return since last rebalance for strategy i
- I(t) = Index return for period t
- Nav(t) = Index value at time t
- Start Date = First day of index calculation

Index NAV Calculation

HFR Bank Systematic Risk Premia Strategy 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 as reported to Hedge Fund Research, Inc, net of fees. The HFR Bank Systematic Risk Premia Strategy Indices are published on a daily basis on t+1.

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*".

Calculating the return series for each strategy i:

$$Ri(t) = \frac{Pi(t)}{Pi(t-1)} - 1 - \left(\frac{CFi}{250}\right) - F$$

Calculating the volatility factor series for each strategy i:

To initialize, Xi(t=0) is listed in the parameter table where t=0 = Start Date

For t ≥ 1:

Xi(t) = $(A * 15.81 * |Ri(t)|) \quad + (1 - A) * Xi(t-1)$ for |Ri(t)| > RT

Xi(t) = Xi(t-1) for |Ri(t)| ≤ RT

If t = first business day of the 13th month since the last rebalancing or since t = 0 then:

$$Vi(t) = Xi(t-10)$$

Otherwise:

$$Vi(t)= Xi(t)$$

Computing the weight series for strategy i:

$$Wi(t) = SWi*(TV/Vi(t))$$

Compute cumulative return since last rebalance index for strategy i:

If t = first business day of the 13th month since the last rebalance then:

$$Qi(t) = Ri(t)$$

Otherwise:

$$Qi(t)= (Ri(t) + 1)*(Qi(t-1) + 1) - 1$$

Computing the Index returns:

$$Y(t) = \left(\sum_{i=1}^{N} Wi(t) * Qi(t) \right)$$

If t = first business day of February or August then:

$$I(t) = Y(t)$$

Otherwise:

$$I(t)= (Y(t) +1)/(Y(t-1)+1) – 1$$

Computing the Index series:

$$Nav(t) = Nav(t-1) * (I(t) + 1)$$

Where Nav(t=0) = 1000.

Additional Rebalance Considerations

- An Index constituent may be removed from the Index if it fails to meet the Evaluation Criteria on or before the Rebalance Date. In such a case, the weight of the constituent would be allocated to the remaining constituents of the Index or allocated to a replacement prospective constituent.
- An Index constituent may be subject for removal from the Index for due diligence concerns or failure. In such a case, upon removal, the weight of the constituent would be allocated to the remaining constituents of the Index or allocated to a replacement constituent.
- An Index constituent may be replaced or removed with another qualifying prospective constituent between rebalance dates as required.
- A strategy may be added to the Index between Rebalance Dates if it meets the Evaluation Criteria and if in the determination of HFR the strategy would enhance the representativeness of the Index. In such instance, the weight of the constituents would then be allocated across the expanded list of constituents of the 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.

Accompanying Notes

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Last updated Jun 30, 2020

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Addendum – Revisions to the Methodology

Date	Revision	Process
8/15/2019	Publication of nine HFR BSRP Indices was suspended effective August 15, 2019 due to a lack of viable index constituency.	Publication of the following HFR BSRP Indices was suspended: HFR Bank Systematic Risk Premia Commodity Multi-Style Index HFR Bank Systematic Risk Premia Commodity Smart Beta Index HFR Bank Systematic Risk Premia Credit Volatility Index HFR Bank Systematic Risk Premia Currency Multi-Style Index HFR Bank Systematic Risk Premia Equity Low Beta Index HFR Bank Systematic Risk Premia Equity Size Index HFR Bank Systematic Risk Premia Risk Mitigation Index HFR Bank Systematic Risk Premia Trend-following Index HFR Bank Systematic Risk Premia Multi-Asset Income Index
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 Bank Systematic Risk Premia Strategy Indices by 2bps per month.	No performance has been affected.
5/18/2020	Removed the description of HFR PortfolioScope, LLC in introduction section.	No performance has been affected.
6/30/2020	An index adjustment of 2 bps/month has been added to the calculation of the index return	The change is effective starting July 1st, 2020.