Kaiko Indices

Kaiko Factor Indices

Rulebook

September 2025

Version 1.0

www.kaiko.com/indices

About Kaiko Indices

Kaiko Indices offers institutional-grade benchmarks and indices, setting the standard for reliability and transparency in the digital asset market. As a regulated Benchmark Administrator under the EU BMR framework and compliant with IOSCO principles, we empower exchanges, asset managers, and financial institutions with trusted data solutions that support robust settlement and risk management practices.

Version History

Version	Publication Date	Comments
1.0.0	01/09/2025	Created

Table of contents

1. Introduction

Over the past decade, the cryptocurrency market has grown exponentially, attracting a diverse range of investors seeking innovative opportunities beyond traditional financial instruments. In this rapidly evolving digital asset landscape, Kaiko has established itself as a pioneer, providing comprehensive cryptocurrency data—from trades on centralized and decentralized exchanges to advanced analytical metrics.

As digital assets mature into a recognized and investable asset class, the demand for reliable, rules-based, and transparent benchmarks has become essential. Investors increasingly seek comprehensive market coverage and a structured segmentation framework to better understand and capitalize on market trends.

Kaiko Indices offers a robust framework for measuring and tracking the performance of the digital asset market, leveraging institutional-grade methodologies for index construction. Designed to meet the evolving needs of investors, Kaiko Indices ensures broad market coverage, precise classification, and a transparent governance structure.

Kaiko Indices' approach to index design is built on four fundamental principles:

Transparency

Kaiko Indices is committed to maintaining a clear and objective methodology, ensuring market participants have full visibility into index construction, data sources, and governance. Our methodologies are publicly available, allowing investors to understand the calculation processes and ensure alignment with industry best practices.

Investability

Kaiko Indices products are designed to be investable and replicable, enabling the creation of financial products that accurately reflect market trends. Through a rigorous asset vetting process incorporating liquidity and size filters, our indices ensure that constituents are both representative of the market and readily accessible for trading.

Innovation

Kaiko Indices continuously innovates by expanding its offerings and integrating cutting-edge methodologies to ensure its indices remain robust, relevant, and aligned with market trends. The Kaiko Indices product suite remains dynamic and forward-thinking, empowering investors to capitalize on the latest opportunities in the digital asset ecosystem.

Governance

Kaiko Indices adheres to a robust governance framework, with periodic methodology reviews, structured oversight, and predefined processes to ensure index integrity. All indices undergo regular maintenance and rebalancing to reflect market conditions while maintaining stability and consistency over time.

This document outlines the principles, policies, and procedures governing the construction and maintenance of Kaiko Indices. It provides a detailed framework for index methodology, including asset selection, weighting criteria, calculation methodologies, and governance processes. Unless explicitly stated otherwise, these guidelines apply to all indices within the Kaiko Investable Universe.

2. Data Sources

2.1. Market Data

1. Data Provider: Kaiko

Kaiko is the global independent leader in digital asset market data, analytics, indices, and pricing for institutional investors, financial services firms, and regulators. Kaiko provides the foundational data infrastructure that bridges traditional finance and on-chain capital markets through regulatory-compliant and auditable data. For over 10 years, Kaiko has delivered the trusted, transparent, and actionable financial data that institutions need to navigate both centralized and decentralized digital asset markets.

2. Coverage

Kaiko covers more than a hundred digital assets exchanges and 10,000 pairs globally. It operates an institutional grade technical stack with storage and collection run on redundant, geographically dispersed servers. Kaiko's unbiased data is used for trading, research, valuation and/or display purposes, with major market participants.

3. Kaiko Benchmark Reference Rates & Kaiko Reference Rates

Kaiko Indices will use the suite of Benchmark Reference Rates and Reference Rates for the purposes of calculating the Indices. Designed to bring greater transparency to pricing, these are rules-based and independent rates established from executed trades from centralised exchanges. Each Reference Rate is calculated real-time (every 5 seconds), as well as being published as a daily fixing covering three different time zones: London 16:00 UTC, Singapore 08:00 UTC, New York 20:00 UTC. For more detailed information, please refer to section 4.1.1.

4. Liquidity Metrics

For the purpose of index construction, liquidity data such as volume, spread or market depth metrics are computed on the basis of data collected and provided by Kaiko.

2. Data Sources

2.2. Supply Data

2.2.1. Kaiko Indices Research

Accurately determining the total supply and circulating supply of digital assets presents a significant challenge due to the diverse structures of blockchain protocols and tokenomic models. These complexities impact research methodologies and the use of supply data in financial applications.

To ensure the accuracy and tradability of its indices, Kaiko Indices has developed a proprietary methodology for measuring coin supply. This model currently covers assets representing over 95% of the total market capitalization of digital assets, with coverage expanding on a quarterly basis. By leveraging this approach, Kaiko Indices provides a more precise and reliable representation of digital asset supply, enhancing the robustness of index construction and calculation.

Total Supply

Total Supply represents the aggregate number of tokens that have been issued and are currently recorded on the public ledger. It does not account for future issuances until they become visible on-chain. This measure includes all long-term strategic and insider holdings, as well as tokens held by network participants, including those considered lost or inaccessible.

Circulating Supply

Circulating Supply refers to the portion of Total Supply that is readily available for trading and contributes to market liquidity in the short to medium term. This measure applies a restrictive approach, including only tokens that can become liquid almost immediately. The following categories of tokens are excluded from Circulating Supply:

- Foundation tokens held or controlled by a centralized or decentralized entity
- Staked tokens used for governance participation without a lock-up period
- Tokens deemed lost due to inaccessible private keys
- Forked tokens that have never been activated on the forked chain
- Tokens allocated to founders and employees
- Tokens issued to seed, private, and public investors
- Tokens locked as part of Proof-of-Stake delegation for a fixed period
- Tokens locked in governance mechanisms for a fixed period
- Tokens subject to legally binding agreements restricting their sale until specified date

2.2.2. External Sources

For assets not yet covered by Kaiko Indices' proprietary research, supply data is sourced from pre-approved external platforms. A review process is initiated if discrepancies between data sources exceed an acceptable tolerance threshold, ensuring the accuracy and reliability of the reported figures.

3. Index Construction

3.1. Index Underlying Components

3.1.1. Rates Methodology

Kaiko Indices calculates its indices using prices derived from its suite of Reference Rates and Benchmark Reference Rates. These rates serve as the underlying components, and their prices are incorporated into the computation of the Index Value. To ensure accuracy and reliability, a rigorous exchange selection process and a robust price aggregation methodology are applied, as outlined in the Reference Rates methodology:

Exchange Due Diligence

All centralized exchanges are thoroughly evaluated, and only those that meet rigorous reliability and transparency standards are included in the hard-vetted exchange list. This list is reviewed on a quarterly basis, with exchanges categorized into two tiers based on their compliance with predefined vetting criteria. The composition of Benchmark Reference Rates is derived from the hard-vetted exchanges, ensuring adherence to strict reliability and transparency standards. In contrast, Reference Rates incorporate data from exchanges that meet fundamental eligibility criteria, providing a broader yet systematically screened dataset.

Criteria	Basic Vetting	Hard Vetting
Absent from any sanction list	Yes	Yes
Located in stable and open country	–	Yes
Has been operating for the past	–	5 Years
Regulated by an independent government body	–	Yes
KYC/AML controls	–	Strong
Trading Policies	–	Significant
Offers REST API & WebSocket data feeds	–	Yes
Offers live & historical trade data	–	Yes
Provide cold storage for customers funds	–	Yes

Liquidity Optimization

From the curated exchange list, an optimization process selects the most relevant exchanges to maximize liquidity and offer accurate price discovery.

Robust Aggregation Method

A Volume-Weighted Median combined with a Time-Weighted Average Price (TWAP) methodology is applied to derive fair and representative prices based on executed transactions from the selected exchanges.

Quarterly Reviews

The exchange constituents and calculation window of the Reference Rates are reviewed quarterly to ensure alignment with prevailing market conditions.

Buffering Rules

For Benchmark Reference Rates, buffering mechanisms are implemented to minimize unnecessary parameters turnover during rebalancing, thereby maximizing liquidity coverage and maintaining methodological consistency.

3. Index Construction

3.1. Index Underlying Components

3.1.2. Eligibility Requirements

The primary objective of Kaiko's Digital Asset Vetting (KDAV) is to safeguard Kaiko Indices products from avoidable asset risks and ensure accurate tracking of the strategy's performance. It evaluates the quality and index suitability of all digital assets in the Digital Asset Universe covered by Kaiko.

The Digital Asset Universe consists of thousands of digital assets, each with unique characteristics and risks profiles. The KDAV eligibility framework applies a multi-tier vetting process to assess asset quality and ensure suitability for index inclusion. Digital assets classified as Asset-Referenced Tokens (ARTs) or Electronic Money Tokens (EMTs), as defined by the European Banking Authority (EBA), are excluded from it.

Asset Vetting 1

Kaiko Digital Asset Universe covers more than +2,300 spot digital assets currently traded on approximately 70 exchanges. All assets are screened for the following:

- Asset type - excluded from the universe any asset whose value is derived from another asset. Notable examples: stablecoins, tokenized share, tokenized ETFs, short or leverage coins
- CEX Coverage - excluded from the universe any asset trading only on Decentralized platforms
- Data availability - excluded from the universe any asset whose tokenomics metrics are not available Total supply, Circulating supply, etc..)
- Trading history - excluded from the universe any asset with less than 90 days history on at least one of the centralized exchanges covered by Kaiko

All remaining assets are composing the Kaiko Benchmark Universe

Asset Vetting 2

All assets from the Kaiko Benchmark Universe are screened for the following:

- Tradability - excluded from the universe, all assets not traded on at least two hard-vetted exchanges
- Liquidity - excluded from the universe, all assets whose:
- Percentage of the rolling 90-day Average Daily Trading Volume ($ADTV_{90}$) is below 0.01% of the Total Market ADTV on soft-vetted exchanges.
- Percentage of the rolling 90-day Average Daily Circulating Market Capitalization ($ADCMC_{90}$) is below 0.01% of the Total Market ADCMC.

All remaining assets are composing the Kaiko Investable Universe

4. Indices Calculation

4.1. Step-by-Step Calculation Methodology

The calculation of Kaiko Indices follows a systematic, rules-based approach to ensure consistency, transparency, and accuracy. The process is structured around 3 phases: Index Initiation, Ongoing Publications, and Rebalancing Events.

Index Initiation (t=0)

At the index launch, the following steps are performed:

- Definition of a base Index value $Index_0$ (eg. 100).
- Collection of each asset price p_0^i included in the basket from its respective benchmark rate.
- Computation of the weighting factor wf_0^i for each asset included in the basket. Each asset is then subject to potential adjustments such as a capping factor cf_0^i or an exchange rate x_0^i.
- Aggregation of all asset weighting units to obtain the initial total index units TU_0.
- Calculation of the initial divisor value D_0 as the division of the initial total index units TU_0 by the Index value $Index_0$.

Ongoing Index Publications (t)

On each publication, the following steps are executed:

- Collection of each asset price p_t^i included in the basket from their respective benchmark rate.
- Aggregation of all asset weighting units to obtain the total index units TU_t.
- Calculation of the Index value $Index_t$.

Rebalancing Date (T+1)

On a scheduled rebalancing date, the following adjustments are made:

- Computation of the new weighting factor wf_{T+1}^i for each asset included in the basket. Each asset is then subject to potential adjustments such as a capping factor cf_{T+1}^i or an exchange rate x_{T+1}^i.
- Aggregation of all asset weighting units to obtain the new total index units TU_{T+1}.
- Computation of the difference ΔTU_{T+1} between the previous closing total index units of the index TU_T and the new total index units TU_{T+1}.
- Calculation of the new divisor D_{T+1}.

4. Indices Calculation

4.2. Divisor Calculation

4.2.1. Inputs

Symbol	Name	Description
T	**Events**	The timestamp at which the divisor is calculated.
n	**Number of Assets**	The number of assets in the index
p_T^i	**Asset price**	Price of the ith asset at time T
wf_T^i	**Weighting Factor**	Weighting factor applied to the ith asset at time T
cf_T^i	**Cap Factor**	Weighting cap factor applied to the ith asset at time T
x_T^i	**Exchange Rate**	Exchange rate applied to the ith asset at time T
ΔTU_{T+1}	**Total Units Delta**	Difference between the closing total index units of the index and the new total index units of the index at time T+1
D_T	**Divisor**	Divisor of the index at time T

4.2.2. Divisor Formula

Each index has a unique index divisor that is adjusted to maintain the continuity of the index's values across changes due to any token events modifying the metrics included in the computation of the weighting factor. Changes in weights due to token events are distributed proportionally across all index components. The index divisor is calculated as follows:

$$D_{T+1} = D_T \cdot \frac{\sum_{i=1}^{n}(p_T^i \cdot wf_T^i \cdot cf_T^i \cdot x_T^i) \pm \Delta TU_{T+1}}{\sum_{i=1}^{n}(p_T^i \cdot wf_T^i \cdot cf_T^i \cdot x_T^i)}$$

4. Indices Calculation

4.2. Divisor Calculation

4.2.3. Divisor Adjustment Events

A variety of token-related events may impact the total index units and consequently require an adjustment to the divisor to maintain index continuity. Common events that may trigger a divisor change include:

Token Burns	Certain digital assets incorporate mechanisms to permanently remove tokens from circulation, reducing the total supply over time. This supply reduction may increase the value of the remaining circulating supply and impact the divisor.
Hard Forks	A hard fork occurs when a digital asset splits into two distinct chains, each with its own circulating supply. This can introduce complexities in index calculation, requiring adjustments to reflect the valuation of the new assets.
Airdrops	Airdrops involve the free distribution of tokens to holders of a particular digital asset. These distributions can alter the circulating supply and, consequently, the divisor.
Token Unlocks	Certain assets feature vesting schedules or lock-up periods, restricting tokens from trading for a predetermined time. When these tokens unlock and become available for trading, the circulating supply increases, potentially impacting the divisor. Token incentive programs, including allocations for founders, teams, or advisors, often follow structured unlock events.
Inflation or deflation	Some digital assets implement a fixed inflation rate, where new tokens are periodically added to the supply. Changes in the inflation rate can influence asset valuation and the divisor. Conversely, assets with deflationary models, where supply decreases over time, may also necessitate divisor adjustments.

As those events usually happen following an established pattern or may happen without any prior notice, the divisor will be revised following the same rebalancing schedule of the index. However, if Kaiko Administration Committee anticipate any material adverse effect following a token issuance, Kaiko Indices will update accordingly the divisor, notifying index consumers of the change.

4. Indices Calculation

4.3. Index Aggregation

4.3.1. Inputs

Symbol	Name	Description
t	**Events**	The timestamp at which the index is calculated
n	**Number of Assets**	The number of assets in the index
p_t^i	**Asset Price**	Price of the ith asset at time t
wf_t^i	**Weighting Factor**	Weighting factor applied to the ith asset at time t
cf_t^i	**Cap Factor**	Weighting cap factor applied to the ith asset at time t
x_t^i	**Exchange Rate**	Exchange rate applied to the ith asset at time t
TU_t	**Total Index Units**	Total index units of the index at time t
D_T	**Divisor**	Divisor of the index at time t
$Index_t$	**Index Price**	Index Price at time t

4.3.2. Laspeyres Formula

Indices are aggregated by using the Laspeyres formula, which is a measure of price changes against a fixed base quantity weight:

$$Index_t = \frac{\sum_{i=1}^{n}(p_t^i \cdot wf_t^i \cdot cf_t^i \cdot x_t^i)}{D_t} = \frac{TU_t}{D_t}$$

4.3.3. Computation Specificities

To ensure robustness and reliability, the index computation follows strict rules to handle various market events and data anomalies:

Base value The index is initialized with a base value of 100.

Rounding All rates are calculated with all available decimals

Blockchain forks In the event of a blockchain fork, the ticker of the affected underlying assets may be adjusted to reflect the most relevant instrument.

Delayed & missing data At the time of the calculation (t), some underlying components may be delayed or unavailable. To ensure index continuity, a Fixed Indices Publication Buffer is applied before the computation of the index value. If any required underlying price is missing after this buffer period, the index value is not computed.

Spurious data If for any reason any underlying price is identified as potentially suspect within an index composition, the index value is not computed.

5. Publication & Review

5.1. Publication Events

Each index follows a structured publication framework to ensure consistency and accuracy. There are two types of publication events: real-time and fixing publications. The underlying components of indices adhere to standardized methodologies, with specific aggregation parameters reviewed quarterly to maintain minimum liquidity coverage and market price representativity. For more details on the rates, publication and parameters, please refer to this link.

5.1.1. Real-Time Publications

Real-time indices are defined by publication events occurring at sub-minute granularity. To mitigate incomplete index aggregation due to potential underlying price unavailability, an Indices Publication Buffer is applied before computing the index value.

- Publication interval: 5s
- Indices Publication Buffer: 5s

5.1.2. Fixing Publications

Fixing publications are scheduled recurring events that occur at a granularity slower than a minute, typically aligning with key market closing times. These fixing events are assumed to take place daily, with three distinct publication times corresponding to major financial time zones: US, EMEA, and APAC. To mitigate incomplete index aggregation due to potential underlying price unavailability, an Indices Publication Buffer is applied before computing the index value.

- Publication interval: 1 day
- Indices Publication Buffer: 15 min

Kaiko Indices daily fixings:

- Europe - London time - 16:15 UTC
- Asia - Singapore time - 08:15 UTC
- North America - New York time - 20:15 UTC

5. Publication & Review

5.2. Scheduled Review and Rebalancing

Kaiko Indices undertakes regular index reviews of the underlying constituents of the Kaiko Index Family according to the frequency stated on individual index methodology and following the standards defined in the rebalancing calendar.

Rebalancing is a time-driven process designed to ensure that indices remain aligned with market dynamics while adhering to asset vetting and selection rules, which are further detailed in the Index Construction section.

All indices follow a Scheduled Review Scheme, where cut-off, underlying, and effective dates define the data collection, processing periods, followed by the implementation of updated index compositions.

Scheduled Review Scheme

Step 1 – Cut-off date

End of the last day of month preceding the next review period

Data collection stops.

Step 2 – Underlying date

3 business days before the effective rebalancing date

Index components and weights are calculated and disseminated

Step 3 – Effective date

First business day following the Review Month.

Index composition and weights are implemented and effective

5. Publication & Review

5.3. Extraordinary Review

Kaiko Indices reserves the right, based on its qualified expert judgment, to exclude or replace an asset selected during the Scheduled Review. Such an extraordinary action may be taken if the asset is found to be subject to any of the following exclusion criteria:

- Fraud
- Market manipulation
- Significant loss of volume or liquidity

In such cases, the Kaiko Index Administration Committee will publish its findings, and the asset will be excluded from index calculations two days after the initial public communication.

Extraordinary Review Procedure

Step 1 – Event

Anytime between ordinary reviews

Identification by the Kaiko Indices team of an exclusion action

Step 2 – Public communication

Within the next 24 hours **Kaiko Indices Administration Committee**

publish its findings and asset exclusion if recommended

Step 3 – Asset exclusion

3 days later

The Index Administration Committee recommendation is effective

6. Index Governance

6.1. Committee Oversight

Kaiko Indices has established a robust governance framework structured around dedicated committees overseeing index operations, administration, and benchmark oversight. These committees comprise representatives from across Kaiko, including Kaiko Indices, with each member focusing on key oversight areas such as risk, compliance, methodology governance, and data sufficiency.

This structured approach ensures that decisions are not made unilaterally, but rather through rigorous challenge and discussion, considering all relevant factors before finalization. The committees operate in strict adherence to Kaiko Indices' methodologies and policies, reinforcing the integrity, transparency, and robustness of the indices.

6.2. Expert Judgment

Kaiko Indices is committed to ensuring that all index-related decisions are driven by predefined methodologies and policies, minimizing the risk of inconsistent or discretionary decision-making. However, in complex market conditions, certain situations may require the application of expert judgment. Where practicable, such decisions are escalated to the relevant governance committee, with all instances documented and reviewed by the Oversight Committee to ensure transparency and consistency. If a judgment-based decision arises in a scenario not explicitly covered by the methodology, Kaiko Indices will publicly disclose the details of the decision-making process.

6.3. Transparency, Consistency and Independence

Kaiko Indices is committed to transparently communicating all major decisions related to index calculation and administration, ensuring that stakeholders receive timely and non-selective disclosure of relevant information. To maintain alignment with market needs, Kaiko Indices actively seeks feedback from users and stakeholders and will conduct regular consultations whenever methodology changes are under consideration.

7. Kaiko Factor Indices

7.1. Overview

7.1.1. Index Objective

Kaiko Factor Indices are rule-based, trusworthy indices that employ systematic methodologies to identify digital assets with positive factor attributes supported by rigorous academic research. These indices are designed to deliver highly reproducible investment outcomes and can be applied across both passive investment strategies and active portfolio management beyond the simple market-cap weighting.

7.1.2. List of Factor Indices

Name	Code	ISIN	Dissemination	Inception
Kaiko lowVol Index	**KFLV**	TBC	Real-time, Regional Fixing (LDN, NYC, SGP)	2020-01-02
Kaiko Size Index	**KFSZ**	TBC	Real-time, Regional Fixing (LDN, NYC, SGP)	2020-01-02
Kaiko Momentum Index	**KFMOM**	TBC	Real-time, Regional Fixing (LDN, NYC, SGP)	2020-01-02

7.2. Kaiko lowVol Index

7.1.1. Index Description

Kaiko lowVol Factor Indices evaluate the performance of the most stable stocks within Kaiko Investable Universe by analyzing historical return patterns. This methodology seeks to optimize the risk-return profile by focusing on lower-volatility securities. As a defensive investment approach, this strategy typically delivers superior performance during periods of economic downturn, when investors prioritize loss mitigation over aggressive growth.

7.1.2. Index Construction

Features	Description
Asset Universe	Kaiko Investable Universe
Asset Selection	Top 10 assets are selected from the inverse ranking using the Kaiko Realized Volatility
Weighting	Weighted based on lowVol Factor Score by normalizing individual factor scores relative to the aggregate where the summation encompasses all ten index components. $$\text{lowVol Factor Score} = \frac{1}{\text{Kaiko Realized Volatility}}$$
Capping	No capping
Rebalancing	Reviewed and rebalanced quarterly

Kaiko Realized Volatility is a proprietary statistical measure that calculates the dispersion of returns for a specific asset over a defined time period considering potential autocorrelation of the underlying asset.

7. Kaiko Factor Indices

7.2. Kaiko Size Index

7.2.1. Index Description

Kaiko Size Index is designed to capture the size effect in digital asset markets by overweighting smaller-cap assets. This approach increases exposure to smaller assets, which may offer different risk and return characteristics compared to larger-cap counterparts.

7.2.2. Index Construction

Features	Description
Asset Universe	Kaiko Investable Universe
Asset Selection	Top 10 assets are selected from the ranking using 90-day Average Market Capitalization, excluding Bitcoin.
Weighting	Weighted based on Size Factor Score by normalizing individual factor scores relative to the aggregate where the summation encompasses all ten index components. $$\text{Size Factor Score} = \frac{1}{\text{90-day Average Market Capitalization}}$$
Capping	No capping
Rebalancing	Reviewed and rebalanced quarterly

7.3. Kaiko Momentum Index

7.3.1. Index Description

The Kaiko Momentum Index is designed to capture momentum effects in the digital asset market by selecting assets demonstrating strong positive price trends. Using a 8-week Relative Strength Index (RSI) with a robust warm-up period to minimize bias, the index identifies the top five assets within the Kaiko Investable Universe with the highest momentum signals.

7.3.2. Index Construction

Features	Description
Asset Universe	Kaiko Investable Universe
Asset Selection	Top 5 assets are selected from the ranking of Relative Strength Index(RSI)
Weighting	Weighted based on Momentum Factor Score in 8.2.3 by normalizing individual factor scores relative to the aggregate where the summation encompasses all ten index components.
Capping	Individual asset weights are capped at 30%
Rebalancing	Reviewed and rebalanced monthly

7. Kaiko Factor Indices

7.3. Kaiko Momentum Indices

7.3.3. Momentum Factor Score

Momentum Signal Calculation: Relative Strength Index (RSI)

The RSI methodology begins with asymmetric decomposition of daily price movements.

$$\Delta_{i,t} = P_{i,t} - P_{i,t-1}$$

$$G_{i,t} = \max(\Delta_{i,t}, 0)$$

$$L_{i,t} = \max(-\Delta_{i,t}, 0)$$

where $P_{i,t}$ denotes the closing price of $asset_i$ on day t.

The gain and loss series are smoothed using Wilder's exponential smoothing methodology, which employs a smoothing parameter $\alpha = \frac{1}{n}$ where n denotes the lookback period:

$$AvgGain_{i,t} = \alpha G_{i,t} + (1-\alpha) AvgGain_{i,t-1}$$

$$AvgLoss_{i,t} = \alpha L_{i,t} + (1-\alpha) AvgLoss_{i,t-1}$$

$$RS_{i,t} = \frac{AvgGain_{i,t}}{AvgLoss_{i,t}}$$

$$RSI_{i,t} = 100 - \frac{100}{1+RS_{i,t}}$$

where lookback period (n) is 8-weeks

To minimize initialization bias, a warm-up period of 3*n is used. During this period, initial average gain and loss values are seeded with the first observation, while subsequent values employ the exponential smoothing recursion.

Momentum Factor Score

RSI values are converted to z-scores using the cross-sectional mean and standard deviation of RSI values across all constituents. To ensure non-negative weights suitable for portfolio construction, z-scores are linearly rescaled to the interval [0.01, 1.00].

$$Z\text{-}score_i = \frac{RSI_{i,t} - \text{Mean of RSIs}}{\text{Standard Deviation of RSIs}}$$

$$\text{Factor Score}_{\text{Momentum},i} = 0.01 + (1 - 0.01)\frac{Z\text{-}score_i - \text{Min}(Z\text{-}Score)}{\text{Max}(Z\text{-}Score) - \text{Min}(Z\text{-}Score)}$$

Weights

On a scheduled rebalancing date, the following adjustments are made:

$$Weight_i = \frac{\text{Factor Score}_{\text{Momentum},i}}{\sum(\text{Factor Score}_{\text{Momentum},i})}$$

Disclaimer

This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the "Information") is the property of Challenger Deep SAS or its subsidiaries (collectively, "Kaiko") and is provided for informational purposes only. The Information may not be modified, reverse-engineered, reproduced or redisseminated in whole or in part without prior written permission from Kaiko. All rights in the Information are reserved by Kaiko. The Information may not be used to create derivative works or to verify or correct other data or information. For example (but without limitation), the Information may not be used to create indexes, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other Kaiko data, information, products or services. The user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. KAIKO DOES NOT MAKE ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, KAIKO EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NON-INFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION.

CONTACT

Paris
33 rue du Louvre,
75002 Paris,
France

Singapore
30 Prinsep St,
Singapore,
188647

New York
115 W 30th St,
New York, NY,
10001

London
34-37 Liverpool Street,
London,
EC2M7PP

Kaiko
smart data

www.kaiko.com