Kaiko Reference Rates

Capital Market Rates

Equity, FX, Commodity

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Version 2.0.0

www.kaiko.com

About Kaiko Indices

Kaiko Indices offers institutional-grade rates 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	15/01/2026	Created
1.0.1	04/02/2026	Formula updated (p. 8)
1.1.0	03/04/2026	3.1. Data Sources (add new source) 3.3. Kaiko Equity & ETF Reference Rates (remove U.S., add description for HK and KR equities)
2.0.0	15/07/2026	- 2.2.6 Data Gaps / Missing data - New calculation methodology: 2.2.1, 2.2.5 - New index: 3.1.2, 3.1.3, 3.1.4, 3.2. 3.3

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1. Introduction

This document outlines the methodology of the Kaiko Reference Rates for the Kaiko Capital Market Reference Rates, covering equities, foreign exchange (FX), and commodities with spot, perpetual-futures, and calendar-futures, or other variants. The rates are designed to provide transparent, manipulation-resistant reference prices suitable for liquidation mechanisms, funding-rate calculations, margin determinations, and the settlement of derivative products requiring continuous reference pricing across global trading sessions.

Section 2 sets out the shared methodology including data sources, microprice computation, liquidity weighting, and the aggregation framework that applies to all Kaiko Capital Market Reference Rates. Section 3 then specifies, for each rate family (Equity, FX, Commodity), the data sources, trading-hour coverage, and calculation parameters used.

This document should be read in conjunction with the Kaiko Single Asset Reference Rates Benchmark Statement, available on the Kaiko website.

2. Methodology

Section 2 sets out the common methodology applicable to all Kaiko Capital Market Reference Rates, Equity, FX, and Commodity, across their spot, perpetual-futures, and calendar-futures variants. The shared framework comprises the data-source vetting principles (§2.1), the microprice and liquidity-weight definitions (§2.2.2–§2.2.3), the time-weighted volume-weighted-median aggregation (§2.2.4), and the cost-of-carry conversion used to derive spot-equivalent prices from futures inputs (§2.2.5). Rate-specific calculation steps, parameters, data sources, and trading hours are specified in Section 3.

2.1. Data Sources

2.1.1. Asset Coverage

The capital market rates provide coverage across key segments demonstrating sufficient liquidity and data quality. Coverage extends to:

- All National Market System (NMS)-listed U.S. equities and major U.S. index ETFs
- Major equities and index ETFs listed on the Hong Kong Stock Exchange (HKEX), Korea Exchange (KRX), Singapore Exchange (SGX), and Japan Exchange Group (JPX)
- Major foreign exchange and selected emerging-market currency pairs sourced from the wholesale interdealer market
- Commodities including metal and energy

The complete and current list of underlying assets covered by each Kaiko Capital Market Reference Rate is maintained by the Administrator and published at the reference URL (https://www.kaiko.com/indices/reference-rates.) The list constitutes the authoritative coverage record and is updated upon any change to the constituent universe.

2.1.2. Market Data Feeds

Kaiko applies continuous data-quality monitoring to validate feed integrity, including real-time checks for completeness, recency, accuracy, and anomaly detection.

2.1.2.1. Equity

The Kaiko Equity Reference Rate sources real-time, sub-second National Best Bid and Offer (NBBO) feed data across all covered exchanges. Each feed delivers continuous quote updates reflecting the most competitive bid and offer prices available on the respective venue.

2.1.2.2. Foreign Exchange

The Kaiko FX Reference Rate sources real-time order-book data from TP ICAP, a leading global interdealer broker that aggregates executable streaming prices from institutional counterparties across its electronic platforms. The feed delivers continuous Best Bid and Offer (BBO) updates for major and selected emerging-market currency pairs from the wholesale interdealer FX market, providing 24/5 coverage across the Sydney, Tokyo, London, New York trading sessions.

2.1.2.3. Commodity

The Kaiko Commodity Reference Rates source data from a combination of wholesale OTC and regulated-venue feeds, selected to provide coverage across precious metals, base metals, energy, and agricultural soft commodities:

- **Hyperliquid**: real-time trade data from Hyperliquid, a decentralized perpetual-futures venue, covering commodity-linked perpetual contracts, providing 24/7 price discovery outside the trading hours of the underlying OTC and listed-futures venues.

- **TP ICAP:** real-time spot order-book data for precious metals (gold, silver) and one-month flat-price commodity swaps for Brent, WTI, and natural gas, from the wholesale OTC interdealer market, providing 24/5 coverage in line with global market hours.

2.1.3. Trading Hours and Holiday Calendars

Trading hours and holiday calendars applicable to each rate follow the published schedule of the relevant trading venue. The underlying market calendar and trading hour data is sourced from **TradingHours.com** and is maintained by Kaiko.

2.2. Rates Calculation

The aggregation methodology consists of splitting the calculation window into equal-size time partitions and, for each of them, extracting the most representative price to use in the final rate. The methodology operates on all available data sources. The calculation proceeds in the following sequence:

- **Reference contract selection (§2.2.1)**: applicable to calendar-futures-based rates only; selects the listed futures contract used as input at each calculation event and governs the roll between expiries.
- **Per-observation pricing (§2.2.2–§2.2.3)**: for Best Bid and Offer (BBO) inputs, the microprice and liquidity weight are computed at each BBO update; for trade inputs, the trade price and trade volume serve as the equivalent price/weight pair.
- **Aggregation (§2.2.4)**: the calculation window is partitioned; a volume-weighted median is computed per partition; partition VWMs are combined with time weights that emphasize recent partitions to produce the published rate.
- **Implied spot price calculation (§2.2.5)**: applicable to calendar-futures-based rates only; the aggregated futures price is converted to a spot-equivalent reference price via the cost-of-carry relationship.
- **Data-gap handling (§2.2.6)**: governs missing, delayed, and spurious data at the partition and window level.

2.2.1. Selection of Reference Futures Contract

For each eligible underlying, the Reference Contract is the listed futures contract with the nearest expiry (the "Front Contract"), determined by exchange-listed expiry date. The transition from the Front Contract to the next contract month is governed by the Roll Schedule defined per asset, with the roll completing a fixed number of business days before the expiry date of the Front Contract.

2.2.1.1. Futures Contract Rolling

As the front-month futures contract approaches maturity, Kaiko implements a gradual roll to the next contract month. The roll occurs over a predetermined period with daily weight adjustments to minimize market impact. The specific rolling period and daily weight adjustments are determined on a per-asset basis. Continuous rolling can be adopted for custom rates.

Rolling Schedule Example (2-Day Roll):

- D-2, 100% front future
- D-1, 50% front future, 50% back future
- D-day, 0% front future, 100% back future

Blended Futures Price:

$$F_t = w_0 F_t^{front} + w_1 F_t^{back}$$

Where:

- w_0 = Weight assigned to the front contract
- w_1 = Weight assigned to the back contract
- F_t^{front} = Front contract future price at time t
- F_t^{back} = Back contract future price at time t

2.2.2. Microprice Computation

A microprice is computed at each BBO update to provide a continuous estimate of the prevailing fair value. Unlike the simple mid-price, which assigns equal weight to the bid and ask quotes, the microprice accounts for the relative quoted size on each side of the order book.

$$microPrice = \frac{Bid\ Price\ x\ Ask\ Size\ +\ Ask\ Price\ x\ Bid\ Size}{Bid\ Size\ +\ Ask\ Size}$$

2.2.3. Liquidity Weight

For each microprice observation, a liquidity weight is assigned to represent the reliability and robustness of that observation. This weight captures the average depth available at the top of the order book, emphasizing price updates supported by stronger liquidity.

$$liquidityWeight = \frac{Bid\ Size\ +\ Ask\ Size}{2}$$

2.2.4. Rate Aggregation

The final rate is computed using a time-weighted aggregation of volume-weighted medians where, for Best Bid and Offer (BBO)-based inputs, the microprice serves as the price and the liquidity weight as the volume.

This aggregation framework stabilizes short-term noise through median-based smoothing, mitigates the influence of outliers by emphasizing central market values, remains responsive to genuine market movements via time-weighting, and enhances manipulation resistance by reducing reliance on single-point observations.

2.2.4.1. Step-by-step Methodology

Data Collection: At calculation time, end of each publication interval for real-time and at set times for daily fixings, collect all trades or calculated microprice and liquidity weight pairs from Best Bid and Offer (BBO) snapshot in the calculation window.

- **Partition Creation:** Divide the calculation window into equal time-based partitions (e.g., a 15-second calculation window divided into 5 partitions of 3 seconds each).

- **Partition-level Calculation**: Calculate the Volume-Weighted Median for each partition using liquidity weight. This method provides inherent resistance to outliers and ensures robust price representation within each time segment.

- **Time-weighting application**: Assign time-based weights to each partition's Volume-Weighted Median, with higher weights applied to more recent partitions to reflect current market conditions.

- **Final Aggregation**: Sum the time-weighted partition VWMs to produce the reference price for the publication event.

2.2.4.2. Input

- t : The timestamp at which the rate is calculated
- S_{wind} : The size of the calculation period for which trades are collected and aggregated
- S_{part} : The size of each partition in the calculation window
- K : The number of partitions, an integer calculated as S_{wind}/S_{part}
- k : k-th partition
- I_k : The list of trades included in partition k and ordered by ascending price

- $p_i{}^k$: i-th trade price in the k-th partition (price-ordered distribution)
- $v_i{}^k$: i-th trade volume in the k-th partition (price-ordered distribution)
- VWM_k : Volume-weighted median of the k-th partition
- WP_t : Window price (WP) at time t

2.2.4.3. Volume-Weighted Median

$$VWM_k = p_j{}^k \text{ where } j \text{ satisfies } \sum_{i=0}^{j-1} v_i{}^k < \frac{\sum_{i=1}^{I_k} v_i{}^k}{2} \text{ and } \sum_{i=j+1}^{I_k} v_i{}^k \leq \frac{\sum_{i=1}^{I_k} v_i{}^k}{2}$$

$$if\ \exists\ j:\ v_j{}^k > \frac{\sum_{i=1}^{I_k} v_i{}^k}{2}, \text{ then } VWM_k = p_j{}^k$$

$$if\ \exists\ j:\ \sum_{i=j+1}^{I_k} v_i{}^k = \frac{\sum_{i=1}^{I_k} v_i{}^k}{2}, \text{ then } VWM_k = \frac{p_j{}^k + p_{j+1}{}^k}{2}$$

2.2.4.4. Final Rate

$$Rate_t = \sum_{k=1}^{K} \left(VWM_k \times \overline{w}_k \right) \ where\ \overline{w}_k = \frac{w_k}{\sum_j w_j},\ w_k = \frac{1}{K} \sum_{j=1}^{k} 1_{j \leq k}$$

2.2.5. Implied Spot Price Calculation

This step applies only to calendar futures-based rates per §2.2.1. As futures prices embed a cost-of-carry, the aggregated futures price produced in §2.2.4 is converted into a spot-equivalent reference price via the standard cash-and-carry relationship:

$$S_t = F_t * \ e^{-d_{close} T_t}$$

Where:

- S_t = Implied spot price at time t
- F_t = (Blended) Futures price at time t
- d_{close} = Discount rate, calculated d_t at cash session close where $d_t = \frac{1}{T_t} ln(\frac{F_t}{S_t})$
- T_t = Time to maturity

2.2.6. Data Gaps

Missing Data

The microprice is derived from the prevailing order book rather than from discrete trade events. In the absence of an order book update, the most recently observed best bid and offer continues to represent the market state, and the last computed microprice remains a valid estimate of fair value. The absence of a new order book event therefore does not constitute the absence of a valid price.

If no order book update is recorded in a partition, the partition is populated with the last available microprice (forward fill), and the Volume-Weighted Median of that partition equals that value. Forward-filled partitions receive their standard time weights; accordingly, prices that remain unchanged for an extended period contribute in proportion to their duration, while newly observed prices are incorporated upon arrival. This preserves the responsiveness of the rate to genuine market movements. If no relevant data are recorded in the entire calculation window and no last available microprice exists, the rate is not published for that publication event.

Delayed Data

If Kaiko is unable to retrieve relevant data at the calculation time, the corresponding partition is excluded from the calculation.

Spurious Data

If underlying data are identified as potentially suspect within a partition, such transactions may be adjusted or disregarded.

3. Kaiko Capital Market Rates

3.1. Kaiko Equity Reference Rate

3.1.1. Spot-based rate

3.1.1.1. Data Source

The equity rate sources real-time, sub-second National Best Bid and Offer (NBBO) feed data as its primary input across all covered exchanges. Each feed delivers continuous quote updates reflecting the most competitive bid and offer prices available on the respective venue, ensuring accurate and transparent representation of market activity. Kaiko implements continuous data-quality monitoring to validate feed integrity, including real-time checks for data completeness, recency, and accuracy, ensuring the reliability of the equity rate calculations.

Market	Coverage
United States	Nasdaq, New York Stock Exchange (NYSE), Blue Ocean ATS
Hong Kong	Hong Kong Stock Exchange (HKEX)
Republic of Korea	Korea Exchange (KRX)
Singapore	Singapore Exchange (SGX)
Japan	Japan Exchange Group (JPX)

3.1.1.2. Data Type

Best Bid and Offer (BBO) update

3.1.1.3. Trading Hours and Holiday Calendar

United States

To support continuous pricing suitable for derivative products, Kaiko integrates overnight U.S. equity quote data from two SEC-registered alternative trading systems (ATSs): Blue Ocean ATS (BOATS), operated by Blue Ocean Technologies, and Bruce ATS, operated by Bruce Markets LLC. Both venues offer overnight market coverage for select NMS-listed U.S. equities, delivering real-time venue-level Best Bid and Offer (BBO) updates between 8:00

PM and 4:00 AM ET across the Sunday-evening to Friday-morning trading week. Combining the two feeds increases overnight depth, redundancy, and continuity of price formation outside regular U.S. cash-equity hours and supports seamless reference-price computation across global trading sessions.

The combined feeds provide 24/5 continuous coverage from the Sunday overnight open to the Friday late-hours close, excluding weekends and U.S. equity public holidays observed by NYSE/Nasdaq. On NYSE/Nasdaq half-day sessions, Kaiko follows the corresponding SIP/ATS schedule.

Session	Hours (ET)	Data Source
Early Hours	4:00 AM – 9:30 AM	NBBO SIP
Regular Hours	9:30 AM – 4:00 PM	NBBO SIP
Late Hours	4:00 PM – 8:00 PM	NBBO SIP
Overnight Hours	8:00 PM – 4:00 AM	BOATS, Bruce ATS

Hong Kong

HKEX runs a morning and afternoon continuous session with a 1-hour midday break and a closing auction for cash equities. It follows the HKEX-published holiday calendar.

Session	Hours (HKT)	Data Source
Pre-Opening Auction	9:00 AM – 9:30 AM	HKEX
Regular Hours - Morning	9:30 AM – 12:00 PM	HKEX
Regular Hours - Afternoon	1:00 PM – 4:00 PM	HKEX
Closing Auction	4:00 PM – 4:10 PM	HKEX

Republic of Korea

KRX trades cash equities continuously with a closing call auction. It follows the KRX-published holiday calendar.

Session	Hours (KST)	Data Source
Pre-Opening Auction	8:30 AM – 9:00 AM	KRX

Regular Hours	9:00 AM – 3:20 PM	KRX
Closing Auction	3:20 PM – 3:30 PM	KRX

Singapore

The Singapore Exchange (SGX) operates the cash-equity market. The cash market trades in SGD with a midday break and a 6-minute closing auction. It follows the SGX-published cash-equity market holiday calendar.

Session	Hours (SGT)	Data Source
Pre-Opening Auction	8:30 AM – 9:00 AM	SGX
Regular Hours - Morning	9:00 AM – 12:00 PM	SGX
Regular Hours - Afternoon	1:00 PM – 5:00 PM	SGX
Closing Auction	5:00 PM – 5:06 PM	SGX

Japan

Tokyo Stock Exchange (TSE) trades cash equities in morning and afternoon sessions with a midday break and a closing auction. It follows the JPX-published holiday calendar.

Session	Hours (JST)	Data Source
Regular Hours - Morning	9:00 AM – 11:30 AM	JPX
Regular Hours - Afternoon	12:30 PM – 3:25 PM	JPX
Closing Auction	3:25 PM – 3:30 PM	JPX

3.1.1.4. Rates Calculation

The rate is calculated from order-book data using the standard aggregation framework described in §2.2.

a. Compute the microprice and liquidity weight at each BBO update (§2.2.2 and §2.2.3).

b. Aggregate the resulting microprice/liquidity-weight pairs (§2.2.4) using the parameters below.

  - Calculation window (S_{wind}): 15 seconds.
  - Partition size (S_{part}): 3 seconds.

3.1.2. Perpetual Futures-based rates

3.1.2.1. Data Source

The perpetual futures-based commodity rate sources real-time trade data from Hyperliquid, a decentralized perpetual-futures venue offering commodity-linked perpetual contracts. The feed delivers continuous transaction updates reflecting matched activity on the venue.

3.1.2.2. Data Type

Trades

3.1.2.3. Trading Hours and Holiday Calendars

24/7 including weekends and public holidays

3.1.2.4. Rates Calculation

The rate is calculated from order-book data using the standard aggregation framework described in §2.2.

a. Compute the microprice and liquidity weight at each BBO update (§2.2.2 and §2.2.3).
b. Aggregate the resulting microprice/liquidity-weight pairs (§2.2.4) using the parameters below.
    - Calculation window (S_{wind}): 15 seconds.
    - Partition size (S_{part}): 3 seconds.

3.1.3. Calendar Futures-based rates

The calendar-futures-based equity rate is applied to underlying assets whose cash-equity venues trade on a limited daily schedule, where listed calendar-futures provide additional price discovery beyond cash market hours. The rate leverages real-time Best Bid and Offer (BBO) updates from venues offering single-stock and equity-index calendar-futures contracts on the relevant underlying. Kaiko implements continuous data-quality monitoring to validate feed integrity, including real-time checks for data completeness, recency, and accuracy, ensuring the reliability of the rate calculation.

3.1.3.1. Data Source

The Kaiko Capital Market Rates produced under the calendar-futures-based methodology, together with their underlying contracts and source venues, are listed in Appendix A. The appendix is maintained by Kaiko; it is updated whenever a constituent is added, removed, or has its underlying contract or source venue changed.

3.1.3.2. Data Type

Best Bid and Offer (BBO) update

3.1.3.3. Trading Hours and Holiday Calendars

Hong Kong

The Hong Kong Stock Exchange (HKEX) runs a two-session structured derivative trading, T-day session and T+1 after-hours futures trading. It follows the HKEX-published holiday calendar.

Session	Hours (HKT)	Data Source
Regular Hours - Morning	09:15 – 12:00	HKEX
Regular Hours - Afternoon	13:00 – 16:30	HKEX
Late Hours	17:15 – 3:00 (next day)	HKEX

Republic of Korea

The Korea Exchange (KRX) runs derivatives markets with a day session and a KRX-operated after-hours night session covering U.S. trading hours. It follows the KRX-published holiday calendar.

Session	Hours (KST)	Data Source
Pre-Opening Auction	8:30 AM – 9:00 AM	KRX
Regular Hours	9:00 AM – 3:45 PM	KRX
Late Hours	6:00 PM – 5:00 AM (next day)	KRX

Singapore

Singapore Exchange (SGX) derivatives run a day session and a night session extending into an early-morning period. It follows the SGX-published holiday calendar.

Session	Hours (JST)	Data Source
Regular Hours	7:25 AM – 6:30 PM	SGX
Late Hours	6:45 PM – 5:15 AM	SGX

3.1.3.4. Rates Calculation

The rate is calculated from listed calendar-futures orderbook data.

a. Select the reference futures contract for each calculation event (§2.2.1). Each contract is rolled over one business day, and the roll completes one business day before the expiry date of the Front Contract.
b. Compute the microprice and liquidity weight at each BBO update on the selected contract (§2.2.2 and §2.2.3).
c. Aggregate the resulting microprice/liquidity-weight pairs (§2.2.4) using the parameters below.

- Calculation window (S_{wind}): 15 seconds.
- Partition size (S_{part}): 3 seconds.

3.1.4. Implied Spot rates with calendar futures

The Implied Spot rate represents the spot-equivalent price implied by the calendar-futures-based rate defined in §3.1.3. Using the cost-of-carry relationship, the implied spot price is derived from the calendar-futures-based rate.

3.1.4.1. Data Source

The Kaiko Capital Market Rates produced under the calendar-futures-based methodology, together with their underlying contracts and source venues, are listed in Appendix A. The appendix is maintained by Kaiko; it is updated whenever a constituent is added, removed, or has its underlying contract or source venue changed.

3.1.4.2. Data Type

Best Bid and Offer (BBO) update

3.1.4.3. Trading Hours and Holiday Calendars

Hong Kong

The Hong Kong Stock Exchange (HKEX) runs a two-session structured derivative trading, T-day session and T+1 after-hours futures trading. It follows the HKEX-published holiday calendar.

Session	Hours (HKT)	Data Source
Regular Hours - Morning	09:15 – 12:00	HKEX
Regular Hours - Afternoon	13:00 – 16:30	HKEX
Late Hours	17:15 – 3:00 (next day)	HKEX

Republic of Korea

The Korea Exchange (KRX) runs derivatives markets with a day session and a KRX-operated after-hours night session covering U.S. trading hours. It follows the KRX-published holiday calendar.

Session	Hours (KST)	Data Source
Pre-Opening Auction	8:30 AM – 9:00 AM	KRX

Regular Hours	9:00 AM – 3:45 PM	KRX
Late Hours	6:00 PM – 5:00 AM (next day)	KRX

Singapore

Singapore Exchange (SGX) derivatives run a day session and a night session extending into an early-morning period. It follows the SGX-published holiday calendar.

Session	Hours (JST)	Data Source
Regular Hours	7:25 AM – 6:30 PM	SGX
Late Hours	6:45 PM – 5:15 AM	SGX

3.1.4.4. Rates Calculation

The rate is calculated from listed calendar-futures orderbook data.

a. Select the reference futures contract for each calculation event (§2.2.1). Each contract is rolled over one business day, and the roll completes one business day before the expiry date of the Front Contract.
b. Compute the microprice and liquidity weight at each BBO update on the selected contract (§2.2.2 and §2.2.3).
c. Aggregate the resulting microprice/liquidity-weight pairs (§2.2.4) using the parameters below.
- Calculation window (S_{wind}): 15 seconds.
- Partition size (S_{part}): 3 seconds.

d. Convert the aggregated futures price to a derived spot price (§2.2.5).

3.2. Kaiko FX Reference Rate

3.2.1. Spot-based rate

3.2.1.1. Data Source

The Kaiko FX Reference Rate sources real-time order book data sourced from TP ICAP as its primary data source. The feed delivers continuous Best Bid and Offer (BBO) updates including bid price and ask price reflecting the most competitive executable quotes available across the aggregated wholesale interdealer market.

3.2.1.2. Data Type

Best Bid and Offer (BBO) update

3.2.1.3. Trading Hours and Holiday Calendars

The TP ICAP feed enables continuous coverage across the major global FX trading sessions, providing 24/5 price discovery from the Sunday Sydney open to the Friday New York close, in line with standard wholesale FX market hours.

3.2.1.4. Rates Calculation

The rate is calculated from order-book data using the standard aggregation framework described in §2.2.

a. Compute the microprice and liquidity weight at each BBO update (§2.2.2 and §2.2.3). As the TP ICAP feed delivers Best Bid and Offer (BBO) updates, bid size and ask size are treated as 1 for the microprice computation; the microprice therefore reduces to the simple mid-price and the liquidity weight is uniform across observations.
b. Aggregate the resulting microprice/liquidity-weight pairs (§2.2.4) using the parameters below.
    - Calculation window (S_{wind}): 5 seconds.
    - Partition size (S_{part}): 5 seconds.

3.3. Kaiko Commodity Reference Rate

3.3.1. Spot-based rate

3.3.1.1. Data Source

The Kaiko Commodity Reference Rate leverages real-time order-book data sourced from TP ICAP as its primary data source. The feed delivers continuous Best Bid and Offer (BBO) updates including bid price and ask price reflecting the most competitive executable quotes available across the aggregated wholesale interdealer market.

3.3.1.2. Asset Coverage

Gold, Silver

3.3.1.3. Data Type

Best Bid and Offer (BBO) update

3.3.1.4. Trading Hours and Holiday Calendars

Wholesale OTC precious-metals trading operates broadly in line with global gold/silver market hours, providing 24/5 coverage from the Sunday Sydney open to the Friday New York close, with continuous price discovery.

3.3.1.5. Rates Calculation

The rate is calculated from order-book data using the standard aggregation framework described in §2.2.

a. Compute the microprice and liquidity weight at each BBO update (§2.2.2 and §2.2.3). As the TP ICAP feed delivers Best Bid and Offer (BBO) updates, bid size and ask size are treated as 1 for the microprice computation; the microprice therefore reduces to the simple mid-price and the liquidity weight is uniform across observations.
b. Aggregate the resulting microprice/liquidity-weight pairs (§2.2.4) using the parameters below.
    - Calculation window (S_{wind}): 15 seconds.
    - Partition size (S_{part}): 3 seconds.

3.3.2. Perpetual futures-based rate

3.3.2.1. Data Source

The perpetual futures-based commodity rate sources real-time trade data from Hyperliquid, a decentralized perpetual-futures venue offering commodity-linked perpetual contracts. The feed delivers continuous transaction updates reflecting matched activity on the venue.

3.3.2.2. Data Type

Trades

3.3.2.3. Trading Hours and Holiday Calendars

24/7 including weekends and public holidays

3.3.2.4. Rates Calculation

The rate is calculated from order-book data using the standard aggregation framework described in §2.2. Aggregate the resulting microprice/liquidity-weight pairs (§2.2.4) using the parameters below.

- Calculation window (S_{wind}): 15 seconds.
- Partition size (S_{part}): 3 seconds.

3.3.3. Swap-based rate

3.3.3.1. Data Source

The swap-based commodity rate leverages real-time indicative quotes for one-month flat-price commodity swaps, sourced from TP ICAP as its primary data source. The feed delivers continuous mid-price updates for the relevant underlying, reflecting indicative levels published by leading interdealer brokers across the aggregated wholesale OTC market.

3.3.3.2. Asset Coverage and Underlying data

- Brent: Flat Price Brent Swap Month # 1
- WTI: Flat Price WTI Swap Month # 1
- European Gas (TTF): TTF HI-CAL Month 1

Tenor and Roll Convention

The Month # 1 (M01) tenor designates the front contract of the relevant underlying, i.e. the listed futures contract with the nearest expiry. The quoted swap references this contract; it does not constitute a calendar-month average swap.

The M01 reference rolls to the next contract month on the first business day following the last trading day of the front contract which follows ICE Futures expiry calendar. The rate therefore reflects a contract roll on each such date, and the published series may exhibit a price discontinuity attributable to the difference between the expiring and incoming contract months.

Underlying	Last trading of the front contract	Roll timing
Brent	Last business day of the second month preceding the contract month	Month-end
WTI	Approximately the 20th calendar day of the month preceding the contract month	Mid-month
European Gas (TTF)	Two business days prior to the first calendar day of the contract month	Month-end

3.3.3.3. Data Type

Indicative mid-quote for the one-month flat-price swap on the relevant underlying.

3.3.3.4. Trading Hours and Holiday Calendars

TP ICAP publishes indicative quotes during the active wholesale broker session for the relevant commodity, broadly aligned with London and New York oil-broker hours (approximately 01:00 – 22:00 London time, Monday to Friday). The published rate reflects the most recent indicative quote available during this session.

3.3.3.5. Rates Calculation

The rate is calculated from one-month flat-price swap quote data using the standard aggregation framework described in §2.2.

a. Compute the microprice and liquidity weight at each quote update (§2.2.2 and §2.2.3). As the TP ICAP feed delivers Best Bid and Offer (BBO) updates, bid size and ask size are treated as 1 for the microprice and liquidity weight computation.
b. Aggregate the resulting microprice/liquidity weight pairs (§2.2.4) using the parameters below.
    - Calculation window: 15 seconds.
    - Partition size: 3 seconds.

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[Appendix A] List of Capital Market Rates with Corresponding Methodology and additional Information

Date: 2026-07-27

Asset Class	Name	Ticker	Methodology	Note
Commodities	Kaiko SILVER Reference Rate	KK_RFR_XAGUSD	§3.3.1	
Commodities	Kaiko GOLD Reference Rate	KK_RFR_XAUUSD	§3.3.1	
Commodities	Kaiko Brentoil USDC Reference Rate	KK_RFR_BRENTOILUSDC	§3.3.2	
Commodities	Kaiko Copper Reference Rate	KK_RFR_COPPERUSDC	§3.3.2	
Commodities	Kaiko Natural gas USDC Reference Rate	KK_RFR_NATGASUSDC	§3.3.2	
Commodities	Kaiko WTI Crude Oil USDC Reference Rate	KK_RFR_WTIUSDC	§3.3.2	
Commodities	Kaiko Brentoil Reference Rate	KK_RFR_BRENTOILUSD	§3.3.3	
Commodities	Kaiko Europe Natural Gas Reference Rate	KK_RFR_NATGASEUR	§3.3.3	
Commodities	Kaiko WTI Crude Oil Reference Rate	KK_RFR_WTIUSD	§3.3.3	
Equity	Kaiko Hang Lung Properties Reference Rate	KK_RFR_101HKD	§3.1.1	
Equity	Kaiko CK Infrastructure Reference Rate	KK_RFR_1038HKD	§3.1.1	
Equity	Kaiko China Resources Land Reference Rate	KK_RFR_1109HKD	§3.1.1	
Equity	Kaiko CK Asset Reference Rate	KK_RFR_1113HKD	§3.1.1	
Equity	Kaiko China Resources Gas Group Reference Rate	KK_RFR_1193HKD	§3.1.1	
Equity	Kaiko AIA Reference Rate	KK_RFR_1299HKD	§3.1.1	
Equity	Kaiko Henderson Land Reference Rate	KK_RFR_12HKD	§3.1.1	
Equity	Kaiko SITC Reference Rate	KK_RFR_1308HKD	§3.1.1	
Equity	Kaiko Kunlun Energy Reference Rate	KK_RFR_135HKD	§3.1.1	
Equity	Kaiko China Merchants Port Reference Rate	KK_RFR_144HKD	§3.1.1	
Equity	Kaiko Want Want China Reference Rate	KK_RFR_151HKD	§3.1.1	
Equity	Kaiko Sun Hung Kai Properties Reference Rate	KK_RFR_16HKD	§3.1.1	
Equity	Kaiko Xiomi Reference Rate	KK_RFR_1810HKD	§3.1.1	
Equity	Kaiko Budweiser APAC Reference Rate	KK_RFR_1876HKD	§3.1.1	
Equity	Kaiko Chow Tai Fook Reference Rate	KK_RFR_1929HKD	§3.1.1	
Equity	Kaiko Swire Properties Reference Rate	KK_RFR_1972HKD	§3.1.1	
Equity	Kaiko Wharf REIC Reference Rate	KK_RFR_1997HKD	§3.1.1	
Equity	Kaiko Swire Pacific Reference Rate	KK_RFR_19HKD	§3.1.1	
Equity	Kaiko CKH Holdings Reference Rate	KK_RFR_1HKD	§3.1.1	
Equity	Kaiko ZIJIN Gold International Reference Rate	KK_RFR_2259HKD	§3.1.1	
Equity	Kaiko China Power International Development Reference Rate	KK_RFR_2380HKD	§3.1.1	
Equity	Kaiko Bank of China HK Reference Rate	KK_RFR_2388HKD	§3.1.1	
Equity	Kaiko Alibaba Health IT Reference Rate	KK_RFR_241HKD	§3.1.1	
Equity	Kaiko HK Electric Investments Reference Rate	KK_RFR_2638HKD	§3.1.1	
Equity	Kaiko GALAXY Entertainment Reference Rate	KK_RFR_27HKD	§3.1.1	
Equity	Kaiko KIOXIA HOLDINGS CORP. JPY Equity Reference Rate	KK_RFR_285AJPY	§3.1.1	
Equity	Kaiko WH Group Reference Rate	KK_RFR_288HKD	§3.1.1	
Equity	Kaiko JAPAN TOBACCO INC. JPY Equity Reference Rate	KK_RFR_2914JPY	§3.1.1	
Equity	Kaiko China Resources Beer Reference Rate	KK_RFR_291HKD	§3.1.1	
Equity	Kaiko Cathay Pacific Reference Rate	KK_RFR_293HKD	§3.1.1	
Equity	Kaiko CLP Group Reference Rate	KK_RFR_2HKD	§3.1.1	
Equity	Kaiko Orient Overseas Container Line Reference Rate	KK_RFR_316HKD	§3.1.1	
Equity	Kaiko China State Construction International Reference Rate	KK_RFR_3311HKD	§3.1.1	
Equity	Kaiko HKEX Reference Rate	KK_RFR_388HKD	§3.1.1	
Equity	Kaiko Zhuzhou CRRC Times Electric Reference Rate	KK_RFR_3898HKD	§3.1.1	
Equity	Kaiko Beijing Enterprises Holdings Reference Rate	KK_RFR_392HKD	§3.1.1	
Equity	Kaiko Bosideng Reference Rate	KK_RFR_3998HKD	§3.1.1	
Equity	Kaiko HK & CHINA GAS Reference Rate	KK_RFR_3HKD	§3.1.1	
Equity	Kaiko SHIN-ETSU CHEMICAL CO., LTD. JPY Equity Reference Rate	KK_RFR_4063JPY	§3.1.1	
Equity	Kaiko TAKEDA PHARMACEUTICAL CO., LTD. JPY Equity Reference Rate	KK_RFR_4502JPY	§3.1.1	
Equity	Kaiko CHUGAI PHARMACEUTICAL CO., LTD. JPY Equity Reference Rate	KK_RFR_4519JPY	§3.1.1	
Equity	Kaiko DAIICHI SANKYO CO., LTD. JPY Equity Reference Rate	KK_RFR_4568JPY	§3.1.1	
Equity	Kaiko Wharf Holdings Reference Rate	KK_RFR_4HKD	§3.1.1	
Equity	Kaiko ASMPT Reference Rate	KK_RFR_522HKD	§3.1.1	
Equity	Kaiko SUMITOMO ELECTRIC IND., LTD. JPY Equity Reference Rate	KK_RFR_5802JPY	§3.1.1	
Equity	Kaiko FUJIKURA LTD. JPY Equity Reference Rate	KK_RFR_5803JPY	§3.1.1	
Equity	Kaiko RECRUIT HOLDINGS CO., LTD. JPY Equity Reference Rate	KK_RFR_6098JPY	§3.1.1	
Equity	Kaiko DISCO CORP. JPY Equity Reference Rate	KK_RFR_6146JPY	§3.1.1	
Equity	Kaiko Everbright Securities Company Reference Rate	KK_RFR_6178HKD	§3.1.1	
Equity	Kaiko TOYOTA INDUSTRIES CORP. JPY Equity Reference Rate	KK_RFR_6201JPY	§3.1.1	
Equity	Kaiko KOMATSU LTD. JPY Equity Reference Rate	KK_RFR_6301JPY	§3.1.1	
Equity	Kaiko DAIKIN INDUSTRIES, LTD. JPY Equity Reference Rate	KK_RFR_6367JPY	§3.1.1	
Equity	Kaiko HITACHI, LTD. JPY Equity Reference Rate	KK_RFR_6501JPY	§3.1.1	
Equity	Kaiko MITSUBISHI ELECTRIC CORP. JPY Equity Reference Rate	KK_RFR_6503JPY	§3.1.1	
Equity	Kaiko Techtronic Industries Reference Rate	KK_RFR_669HKD	§3.1.1	
Equity	Kaiko MTR Corp. Reference Rate	KK_RFR_66HKD	§3.1.1	
Equity	Kaiko NEC CORP. JPY Equity Reference Rate	KK_RFR_6701JPY	§3.1.1	
Equity	Kaiko FUJITSU LTD. JPY Equity Reference Rate	KK_RFR_6702JPY	§3.1.1	
Equity	Kaiko PANASONIC HOLDINGS CORP. JPY Equity Reference Rate	KK_RFR_6752JPY	§3.1.1	
Equity	Kaiko SONY GROUP CORP. JPY Equity Reference Rate	KK_RFR_6758JPY	§3.1.1	
Equity	Kaiko Hong Kong Telecom Reference Rate	KK_RFR_6823HKD	§3.1.1	
Equity	Kaiko ADVANTEST CORP. JPY Equity Reference Rate	KK_RFR_6857JPY	§3.1.1	
Equity	Kaiko KEYENCE CORP. JPY Equity Reference Rate	KK_RFR_6861JPY	§3.1.1	
Equity	Kaiko China Overseas Land & Investment Reference Rate	KK_RFR_688HKD	§3.1.1	
Equity	Kaiko DENSO CORP. JPY Equity Reference Rate	KK_RFR_6902JPY	§3.1.1	
Equity	Kaiko FANUC CORP. JPY Equity Reference Rate	KK_RFR_6954JPY	§3.1.1	
Equity	Kaiko MURATA MANUFACTURING CO., LTD. JPY Equity Reference Rate	KK_RFR_6981JPY	§3.1.1	
Equity	Kaiko Power Assets Reference Rate	KK_RFR_6HKD	§3.1.1	
Equity	Kaiko Tencent Reference Rate	KK_RFR_700HKD	§3.1.1	
Equity	Kaiko MITSUBISHI HEAVY IND., LTD. JPY Equity Reference Rate	KK_RFR_7011JPY	§3.1.1	

[Appendix A] List of Capital Market Rates with Corresponding Methodology and additional Information

Date: 2026-07-27

Asset Class	Name	Ticker	Methodology	Note
Equity	Kaiko JAPAN POST BANK CO., LTD. JPY Equity Reference Rate	KK_RFR_7182JPY	§3.1.1	
Equity	Kaiko TOYOTA MOTOR CORP. JPY Equity Reference Rate	KK_RFR_7203JPY	§3.1.1	
Equity	Kaiko HONDA MOTOR CO., LTD. JPY Equity Reference Rate	KK_RFR_7267JPY	§3.1.1	
Equity	Kaiko China Unicom Reference Rate	KK_RFR_762HKD	§3.1.1	
Equity	Kaiko HOYA CORP. JPY Equity Reference Rate	KK_RFR_7741JPY	§3.1.1	
Equity	Kaiko NINTENDO CO., LTD. JPY Equity Reference Rate	KK_RFR_7974JPY	§3.1.1	
Equity	Kaiko ITOCHU CORP. JPY Equity Reference Rate	KK_RFR_8001JPY	§3.1.1	
Equity	Kaiko MARUBENI CORP. JPY Equity Reference Rate	KK_RFR_8002JPY	§3.1.1	
Equity	Kaiko TOYOTA TSUSHO CORP. JPY Equity Reference Rate	KK_RFR_8015JPY	§3.1.1	
Equity	Kaiko MITSUI & CO., LTD. JPY Equity Reference Rate	KK_RFR_8031JPY	§3.1.1	
Equity	Kaiko TOKYO ELECTRON LTD. JPY Equity Reference Rate	KK_RFR_8035JPY	§3.1.1	
Equity	Kaiko SUMITOMO CORP. JPY Equity Reference Rate	KK_RFR_8053JPY	§3.1.1	
Equity	Kaiko MITSUBISHI CORP. JPY Equity Reference Rate	KK_RFR_8058JPY	§3.1.1	
Equity	Kaiko AEON CO., LTD. JPY Equity Reference Rate	KK_RFR_8267JPY	§3.1.1	
Equity	Kaiko MITSUBISHI UFJ FINANCIAL GROUP, INC. JPY Equity Reference Rate	KK_RFR_8306JPY	§3.1.1	
Equity	Kaiko SUMITOMO MITSUI FINANCIAL GROUP, INC. JPY Equity Reference R	KK_RFR_8316JPY	§3.1.1	
Equity	Kaiko China Resources Power Holdings Reference Rate	KK_RFR_836HKD	§3.1.1	
Equity	Kaiko Sino Land Reference Rate	KK_RFR_83HKD	§3.1.1	
Equity	Kaiko MIZUHO FINANCIAL GROUP, INC. JPY Equity Reference Rate	KK_RFR_8411JPY	§3.1.1	
Equity	Kaiko ORIX CORP. JPY Equity Reference Rate	KK_RFR_8591JPY	§3.1.1	
Equity	Kaiko Xinyi Glass Holdings Reference Rate	KK_RFR_868HKD	§3.1.1	
Equity	Kaiko MS&AD INSURANCE GROUP HOLDINGS, INC. JPY Equity Reference R	KK_RFR_8725JPY	§3.1.1	
Equity	Kaiko DAIICHI LIFE GROUP, INC. JPY Equity Reference Rate	KK_RFR_8750JPY	§3.1.1	
Equity	Kaiko TOKIO MARINE HOLDINGS, INC. JPY Equity Reference Rate	KK_RFR_8766JPY	§3.1.1	
Equity	Kaiko MITSUI FUDOSAN CO., LTD. JPY Equity Reference Rate	KK_RFR_8801JPY	§3.1.1	
Equity	Kaiko MITSUBISHI ESTATE CO., LTD. JPY Equity Reference Rate	KK_RFR_8802JPY	§3.1.1	
Equity	Kaiko PCCW Reference Rate	KK_RFR_8HKD	§3.1.1	
Equity	Kaiko NTT, INC. JPY Equity Reference Rate	KK_RFR_9432JPY	§3.1.1	
Equity	Kaiko KDDI CORP. JPY Equity Reference Rate	KK_RFR_9433JPY	§3.1.1	
Equity	Kaiko China Taiping Insurance Reference Rate	KK_RFR_966HKD	§3.1.1	
Equity	Kaiko Lenovo Reference Rate	KK_RFR_992HKD	§3.1.1	
Equity	Kaiko FAST RETAILING CO., LTD. JPY Equity Reference Rate	KK_RFR_9983JPY	§3.1.1	
Equity	Kaiko SOFTBANK GROUP CORP. JPY Equity Reference Rate	KK_RFR_9984JPY	§3.1.1	
Equity	Kaiko Doosan Reference Rate	KK_RFR_A000150KRW	§3.1.1	
Equity	Kaiko KIA CORP. Reference Rate	KK_RFR_A000270KRW	§3.1.1	
Equity	Kaiko SK Hynix Reference Rate	KK_RFR_A000660KRW	§3.1.1	
Equity	Kaiko LG Corp. Reference Rate	KK_RFR_A003550KRW	§3.1.1	
Equity	Kaiko Posco Chemical Reference Rate	KK_RFR_A003670KRW	§3.1.1	
Equity	Kaiko Hyundai Motor Reference Rate	KK_RFR_A005380KRW	§3.1.1	
Equity	Kaiko POSCO Reference Rate	KK_RFR_A005490KRW	§3.1.1	
Equity	Kaiko Samsung Electronics Reference Rate	KK_RFR_A005930KRW	§3.1.1	
Equity	Kaiko Samsung SDI Reference Rate	KK_RFR_A006405KRW	§3.1.1	
Equity	Kaiko Samsung Electro-Mechanics Reference Rate	KK_RFR_A009155KRW	§3.1.1	
Equity	Kaiko HDKSOE Reference Rate	KK_RFR_A009540KRW	§3.1.1	
Equity	Kaiko Korea ZINC Reference Rate	KK_RFR_A010130KRW	§3.1.1	
Equity	Kaiko Samsung Heavy Industries Reference Rate	KK_RFR_A010140KRW	§3.1.1	
Equity	Kaiko S-Oil Reference Rate	KK_RFR_A010950KRW	§3.1.1	
Equity	Kaiko HMM Reference Rate	KK_RFR_A011200KRW	§3.1.1	
Equity	Kaiko Hyundai Mobis Reference Rate	KK_RFR_A012330KRW	§3.1.1	
Equity	Kaiko Hanwha Aerospace Reference Rate	KK_RFR_A012450KRW	§3.1.1	
Equity	Kaiko KEPCO Reference Rate	KK_RFR_A015760KRW	§3.1.1	
Equity	Kaiko SK Telecom Reference Rate	KK_RFR_A017670KRW	§3.1.1	
Equity	Kaiko IBK Reference Rate	KK_RFR_A024110KRW	§3.1.1	
Equity	Kaiko Samsung C&T Reference Rate	KK_RFR_A028260KRW	§3.1.1	
Equity	Kaiko KT Reference Rate	KK_RFR_A030200KRW	§3.1.1	
Equity	Kaiko Samsung Life Reference Rate	KK_RFR_A032830KRW	§3.1.1	
Equity	Kaiko KT&G Reference Rate	KK_RFR_A033780KRW	§3.1.1	
Equity	Kaiko Doosan Enerbility Reference Rate	KK_RFR_A034020KRW	§3.1.1	
Equity	Kaiko SK Reference Rate	KK_RFR_A034730KRW	§3.1.1	
Equity	Kaiko Naver Reference Rate	KK_RFR_A035420KRW	§3.1.1	
Equity	Kaiko Kakao Reference Rate	KK_RFR_A035720KRW	§3.1.1	
Equity	Kaiko Hanwha Ocean Reference Rate	KK_RFR_A042660KRW	§3.1.1	
Equity	Kaiko Hanmi Semiconductor Reference Rate	KK_RFR_A042700KRW	§3.1.1	
Equity	Kaiko Posco International Reference Rate	KK_RFR_A047050KRW	§3.1.1	
Equity	Kaiko Korea Aerospace Industries Reference Rate	KK_RFR_A047810KRW	§3.1.1	
Equity	Kaiko LG CHEM Reference Rate	KK_RFR_A051910KRW	§3.1.1	
Equity	Kaiko Shinhan Financial Group Reference Rate	KK_RFR_A055550KRW	§3.1.1	
Equity	Kaiko Hyundai Rotem Reference Rate	KK_RFR_A064350KRW	§3.1.1	
Equity	Kaiko LG Electronics Reference Rate	KK_RFR_A066570KRW	§3.1.1	
Equity	Kaiko Celltrion Reference Rate	KK_RFR_A068270KRW	§3.1.1	
Equity	Kaiko LIG Nex1 Reference Rate	KK_RFR_A079550KRW	§3.1.1	
Equity	Kaiko Hyundai Glovis Reference Rate	KK_RFR_A086280KRW	§3.1.1	
Equity	Kaiko Hana Financial Group Reference Rate	KK_RFR_A086790KRW	§3.1.1	
Equity	Kaiko SK Innovation Reference Rate	KK_RFR_A096775KRW	§3.1.1	
Equity	Kaiko KB Financial Group Reference Rate	KK_RFR_A105560KRW	§3.1.1	
Equity	Kaiko Meritz Financial Reference Rate	KK_RFR_A138040KRW	§3.1.1	
Equity	Kaiko Samsung Biologics Reference Rate	KK_RFR_A207940KRW	§3.1.1	
Equity	Kaiko HD Hyundai ELECTRIC Reference Rate	KK_RFR_A267260KRW	§3.1.1	
Equity	Kaiko Hanwha Systems Reference Rate	KK_RFR_A272210KRW	§3.1.1	

[Appendix A] List of Capital Market Rates with Corresponding Methodology and additional Information

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Asset Class	Name	Ticker	Methodology	Note
Equity	Kaiko Woori Financial Group Reference Rate	KK_RFR_A316140KRW	§3.1.1	
Equity	Kaiko HD Hyundai Heavy Industries Reference Rate	KK_RFR_A329180KRW	§3.1.1	
Equity	Kaiko LG Energy Solution Reference Rate	KK_RFR_A373220KRW	§3.1.1	
Equity	Kaiko SK Square Reference Rate	KK_RFR_A402340KRW	§3.1.1	
Equity	Kaiko Apple Reference Rate	KK_RFR_AAPLUSD	§3.1.1	
Equity	Kaiko ABBVIE INC. Reference Rate	KK_RFR_ABBVUSD	§3.1.1	
Equity	Kaiko AMD Reference Rate	KK_RFR_AMDUSD	§3.1.1	
Equity	Kaiko Amazon Reference Rate	KK_RFR_AMZNUSD	§3.1.1	
Equity	Kaiko Applied Digital Corporation Reference Rate	KK_RFR_APLDUSD	§3.1.1	
Equity	Kaiko ARKK Reference Rate	KK_RFR_ARKKUSD	§3.1.1	
Equity	Kaiko ARTY Reference Rate	KK_RFR_ARTYUSD	§3.1.1	
Equity	Kaiko ASHR Reference Rate	KK_RFR_ASHRUSD	§3.1.1	
Equity	Kaiko Broadcom Reference Rate	KK_RFR_AVGOUSD	§3.1.1	
Equity	Kaiko Alibaba Reference Rate	KK_RFR_BABAUSD	§3.1.1	
Equity	Kaiko Bank of America Corporation Reference Rate	KK_RFR_BACUSD	§3.1.1	
Equity	Kaiko Bitfarms Ltd. Reference Rate	KK_RFR_BITFUSD	§3.1.1	
Equity	Kaiko BLKC Reference Rate	KK_RFR_BLKCUSD	§3.1.1	
Equity	Kaiko BLOK Reference Rate	KK_RFR_BLOKUSD	§3.1.1	
Equity	Kaiko Bullish Reference Rate	KK_RFR_BLSHUSD	§3.1.1	
Equity	Kaiko BitMine Reference Rate	KK_RFR_BMNRUSD	§3.1.1	
Equity	Kaiko BOTZ Reference Rate	KK_RFR_BOTZUSD	§3.1.1	
Equity	Kaiko BP Reference Rate	KK_RFR_BPUSD	§3.1.1	
Equity	Kaiko Bit Digital, Inc. Reference Rate	KK_RFR_BTBTUSD	§3.1.1	
Equity	Kaiko BTCS Inc. Reference Rate	KK_RFR_BTCSUSD	§3.1.1	
Equity	Kaiko Bitdeer Technologies Group Reference Rate	KK_RFR_BTDRUSD	§3.1.1	
Equity	Kaiko Cango Inc. Reference Rate	KK_RFR_CANGUSD	§3.1.1	
Equity	Kaiko Caterpillar Inc. Reference Rate	KK_RFR_CATUSD	§3.1.1	
Equity	Kaiko Cameco Reference Rate	KK_RFR_CCJUSD	§3.1.1	
Equity	Kaiko Constellation Reference Rate	KK_RFR_CEGUSD	§3.1.1	
Equity	Kaiko Cipher Mining Inc. Reference Rate	KK_RFR_CIFRUSD	§3.1.1	
Equity	Kaiko CleanSpark, Inc. Reference Rate	KK_RFR_CLSKUSD	§3.1.1	
Equity	Kaiko Coinbase Reference Rate	KK_RFR_COINUSD	§3.1.1	
Equity	Kaiko Core Scientific, Inc. Reference Rate	KK_RFR_CORZUSD	§3.1.1	
Equity	Kaiko Costco Wholesale Corporation Reference Rate	KK_RFR_COSTUSD	§3.1.1	
Equity	Kaiko CPER Reference Rate	KK_RFR_CPERUSD	§3.1.1	
Equity	Kaiko Circle Internet Group, Inc. Reference Rate	KK_RFR_CRCLUSD	§3.1.1	
Equity	Kaiko CoreWeave Reference Rate	KK_RFR_CRWVUSD	§3.1.1	
Equity	Kaiko Cisco Systems, Inc. Reference Rate	KK_RFR_CSCOUSD	§3.1.1	
Equity	Kaiko Chevron Corporation Reference Rate	KK_RFR_CVXUSD	§3.1.1	
Equity	Kaiko Dell Reference Rate	KK_RFR_DELLUSD	§3.1.1	
Equity	Kaiko EEM Reference Rate	KK_RFR_EEMUSD	§3.1.1	
Equity	Kaiko EFA Reference Rate	KK_RFR_EFAUSD	§3.1.1	
Equity	Kaiko EFAV Reference Rate	KK_RFR_EFAVUSD	§3.1.1	
Equity	Kaiko ETHA Reference Rate	KK_RFR_ETHAUSD	§3.1.1	
Equity	Kaiko eToro Group Ltd. Reference Rate	KK_RFR_ETORUSD	§3.1.1	
Equity	Kaiko EWY Reference Rate	KK_RFR_EWJUSD	§3.1.1	
Equity	Kaiko EWJ Reference Rate	KK_RFR_EWJUSD	§3.1.1	
Equity	Kaiko EWT Reference Rate	KK_RFR_EWTUSD	§3.1.1	
Equity	Kaiko EWU Reference Rate	KK_RFR_EWUUSD	§3.1.1	
Equity	Kaiko FBTC Reference Rate	KK_RFR_FBTCUSD	§3.1.1	
Equity	Kaiko FEZ Reference Rate	KK_RFR_FEZUSD	§3.1.1	
Equity	Kaiko FXI Reference Rate	KK_RFR_FXIUSD	§3.1.1	
Equity	Kaiko GBTC Reference Rate	KK_RFR_GBTCUSD	§3.1.1	
Equity	Kaiko GDX Reference Rate	KK_RFR_GDXUSD	§3.1.1	
Equity	Kaiko GE Reference Rate	KK_RFR_GEVUSD	§3.1.1	
Equity	Kaiko GLD Reference Rate	KK_RFR_GLDUSD	§3.1.1	
Equity	Kaiko Galaxy Digital Inc. Class A Reference Rate	KK_RFR_GLXYUSD	§3.1.1	
Equity	Kaiko Alphabet Reference Rate	KK_RFR_GOOGLUSD	§3.1.1	
Equity	Kaiko HIVE Digital Technologies Ltd. Common Shares Reference Rate	KK_RFR_HIVEUSD	§3.1.1	
Equity	Kaiko Robinhood Reference Rate	KK_RFR_HOODUSD	§3.1.1	
Equity	Kaiko Hewlett Reference Rate	KK_RFR_HPEUSD	§3.1.1	
Equity	Kaiko Hut 8 Corp.Reference Rate	KK_RFR_HUTUSD	§3.1.1	
Equity	Kaiko HYG Reference Rate	KK_RFR_HYGUSD	§3.1.1	
Equity	Kaiko IBIT Reference Rate	KK_RFR_IBITUSD	§3.1.1	
Equity	Kaiko International Business Machines Corporation Reference Rate	KK_RFR_IBMUSD	§3.1.1	
Equity	Kaiko IMTM Reference Rate	KK_RFR_IMTMUSD	§3.1.1	
Equity	Kaiko Intel CorporationReference Rate	KK_RFR_INTCUSD	§3.1.1	
Equity	Kaiko IQLT Reference Rate	KK_RFR_IQLTUSD	§3.1.1	
Equity	Kaiko IREN Limited Reference Rate	KK_RFR_IRENUSD	§3.1.1	
Equity	Kaiko IWM Reference Rate	KK_RFR_IWMUSD	§3.1.1	
Equity	Kaiko JD.com Reference Rate	KK_RFR_JDUSD	§3.1.1	
Equity	Kaiko Johnson & Johnson Reference Rate	KK_RFR_JNJUSD	§3.1.1	
Equity	Kaiko JPMorgan Chase & Co. Reference Rate	KK_RFR_JPMUSD	§3.1.1	
Equity	Kaiko KDEF Reference Rate	KK_RFR_KDEFUSD	§3.1.1	
Equity	Kaiko Korea Equity Reference Rate	KK_RFR_KOREA	§3.1.1	
Equity	Kaiko Korea Large-Cap Equity Reference Rate	KK_RFR_KR200	§3.1.1	
Equity	Kaiko KRE Reference Rate	KK_RFR_KREUSD	§3.1.1	
Equity	Kaiko KWEB Reference Rate	KK_RFR_KWEBUSD	§3.1.1	
Equity	Kaiko Eli Lilly & Co. Reference Rate	KK_RFR_LLYUSD	§3.1.1	
Equity	Kaiko MARA Holdings, Inc.Reference Rate	KK_RFR_MARAUSD	§3.1.1	
Equity	Kaiko Mastercard Reference Rate	KK_RFR_MAUSD	§3.1.1	
Equity	Kaiko Meta Reference Rate	KK_RFR_METAUSD	§3.1.1	
Equity	Kaiko Microsoft Reference Rate	KK_RFR_MSFTUSD	§3.1.1	

[Appendix A] List of Capital Market Rates with Corresponding Methodology and additional Information

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Asset Class	Name	Ticker	Methodology	Note
Equity	Kaiko MicroStrategy Reference Rate	KK_RFR_MSTRUSD	§3.1.1	
Equity	Kaiko MTUM Reference Rate	KK_RFR_MTUMUSD	§3.1.1	
Equity	Kaiko Micron Reference Rate	KK_RFR_MUUSD	§3.1.1	
Equity	Kaiko Nebius Reference Rate	KK_RFR_NBISUSD	§3.1.1	
Equity	Kaiko Netflix Reference Rate	KK_RFR_NFLXUSD	§3.1.1	
Equity	Kaiko NLR Reference Rate	KK_RFR_NLRUSD	§3.1.1	
Equity	Kaiko NVIDIA Reference Rate	KK_RFR_NVDAUSD	§3.1.1	
Equity	Kaiko Oklo Reference Rate	KK_RFR_OKLOUSD	§3.1.1	
Equity	Kaiko Oracle Reference Rate	KK_RFR_ORCLUSD	§3.1.1	
Equity	Kaiko Occidental Petroleum Reference Rate	KK_RFR_OXYUSD	§3.1.1	
Equity	Kaiko Palantir Reference Rate	KK_RFR_PLTRUSD	§3.1.1	
Equity	Kaiko PayPal Holdings Reference Rate	KK_RFR_PYPLUSD	§3.1.1	
Equity	Kaiko QQQ Reference Rate	KK_RFR_QQQUSD	§3.1.1	
Equity	Kaiko QUAL Reference Rate	KK_RFR_QUALUSD	§3.1.1	
Equity	Kaiko Riot Platforms Reference Rate	KK_RFR_RIOTUSD	§3.1.1	
Equity	Kaiko RTX Reference Rate	KK_RFR_RTXUSD	§3.1.1	
Equity	Kaiko SharpLink Reference Rate	KK_RFR_SBETUSD	§3.1.1	
Equity	Kaiko Shell Reference Rate	KK_RFR_SHELUSD	§3.1.1	
Equity	Kaiko SHLD Reference Rate	KK_RFR_SHLDUSD	§3.1.1	
Equity	Kaiko SLV Reference Rate	KK_RFR_SLVUSD	§3.1.1	
Equity	Kaiko SLX Reference Rate	KK_RFR_SLXUSD	§3.1.1	
Equity	Kaiko Super Micro Computer Reference Rate	KK_RFR_SMCIUSD	§3.1.1	
Equity	Kaiko SMH Reference Rate	KK_RFR_SMHUSD	§3.1.1	
Equity	Kaiko Sandisk Reference Rate	KK_RFR_SNDKUSD	§3.1.1	
Equity	Kaiko SOXX Reference Rate	KK_RFR_SOXXUSD	§3.1.1	
Equity	Kaiko SpaceX USD Equity Reference Rate	KK_RFR_SPCXUSD	§3.1.1	
Equity	Kaiko SPY Reference Rate	KK_RFR_SPYUSD	§3.1.1	
Equity	Kaiko Seagate Reference Rate	KK_RFR_STXUSD	§3.1.1	
Equity	Kaiko TLT Reference Rate	KK_RFR_TLTUSD	§3.1.1	
Equity	Kaiko Tesla Reference Rate	KK_RFR_TSLAUSD	§3.1.1	
Equity	Kaiko TSMC Reference Rate	KK_RFR_TSMUSD	§3.1.1	
Equity	Kaiko Total Energy Reference Rate	KK_RFR_TTEUSD	§3.1.1	
Equity	Kaiko UNG Reference Rate	KK_RFR_UNGUSD	§3.1.1	
Equity	Kaiko USMV Reference Rate	KK_RFR_USMVUSD	§3.1.1	
Equity	Kaiko USO Reference Rate	KK_RFR_USOUSD	§3.1.1	
Equity	Kaiko Valero Reference Rate	KK_RFR_VLOUSD	§3.1.1	
Equity	Kaiko VLUE Reference Rate	KK_RFR_VLUEUSD	§3.1.1	
Equity	Kaiko Vertiv Reference Rate	KK_RFR_VRTUSD	§3.1.1	
Equity	Kaiko Vistra Reference Rate	KK_RFR_VSTUSD	§3.1.1	
Equity	Kaiko VISA Reference Rate	KK_RFR_VUSD	§3.1.1	
Equity	Kaiko Western Digital Reference Rate	KK_RFR_WDCUSD	§3.1.1	
Equity	Kaiko Walmart Reference Rate	KK_RFR_WMTUSD	§3.1.1	
Equity	Kaiko WOOD Reference Rate	KK_RFR_WOODUSD	§3.1.1	
Equity	Kaiko TeraWulf Reference Rate	KK_RFR_WULFUSD	§3.1.1	
Equity	Kaiko XLB Reference Rate	KK_RFR_XLBUSD	§3.1.1	
Equity	Kaiko XLC Reference Rate	KK_RFR_XLCUSD	§3.1.1	
Equity	Kaiko XLE Reference Rate	KK_RFR_XLEUSD	§3.1.1	
Equity	Kaiko XLF Reference Rate	KK_RFR_XLFUSD	§3.1.1	
Equity	Kaiko XLI Reference Rate	KK_RFR_XLIUSD	§3.1.1	
Equity	Kaiko XLK Reference Rate	KK_RFR_XLKUSD	§3.1.1	
Equity	Kaiko XLP Reference Rate	KK_RFR_XLPUSD	§3.1.1	
Equity	Kaiko XLRE Reference Rate	KK_RFR_XLREUSD	§3.1.1	
Equity	Kaiko XLU Reference Rate	KK_RFR_XLUUSD	§3.1.1	
Equity	Kaiko XLV Reference Rate	KK_RFR_XLVUSD	§3.1.1	
Equity	Kaiko XLY Reference Rate	KK_RFR_XLYUSD	§3.1.1	
Equity	Kaiko Exxon Mobil Corporation Reference Rate	KK_RFR_XOMUSD	§3.1.1	
Equity	Kaiko Block, Inc. Reference Rate	KK_RFR_XYZUSD	§3.1.1	
Equity	Kaiko SP500 Reference Rate	KK_RFR_SP500USDC	§3.1.2	
Equity	Kaiko HK-Listed China A-Share Futures Reference Rate	KK_FRR_HKA50	§3.1.3	Underlying data: MSCI China A 50 Connect Index Futures (HKEX)
Equity	Kaiko HK-listed Asia ex-Japan Equity Futures Reference Rate	KK_FRR_HKAXJ	§3.1.3	Underlying data: MSCI AXJ NTR Index Futures (HKEX)
Equity	Kaiko HK-Listed Emerging Asia Equity Futures Reference Rate	KK_FRR_HKEMA	§3.1.3	Underlying data: MSCI EMA NTR (USD) Index Futures (HKEX)
Equity	Kaiko HK H-Share Futures Reference Rate	KK_FRR_HKH50	§3.1.3	Underlying data: HSCEI Futures (HKEX)
Equity	Kaiko HK Large-Cap Equity Futures Reference Rate	KK_FRR_HKHSI	§3.1.3	Underlying data: Hang Seng Index Futures (HKEX)
Equity	Kaiko HK Technology Equity Futures Reference Rate	KK_FRR_HKHST	§3.1.3	Underlying data: Hang Seng TECH Index Futures (HKEX)
Equity	Kaiko HK-Listed India Equity Futures Reference Rate	KK_FRR_HKIND	§3.1.3	Underlying data: MSCI India Index Futures (HKEX)
Equity	Kaiko HK-Listed Japan Equity Futures Reference Rate	KK_FRR_HKJPN	§3.1.3	Underlying data: MSCI JP NTR (USD) Index Futures (HKEX)
Equity	Kaiko HK-Listed Taiwan Equity Futures Reference Rate	KK_FRR_HKTWN	§3.1.3	Underlying data: MSCI TW (TWD) Index Futures (HKEX)
Equity	Kaiko KR Growth Equity Futures Reference Rate	KK_FRR_KR150	§3.1.3	Underlying data: KOSDAQ 150 Index Futures (KRX)
Equity	Kaiko KR Large-Cap Equity Futures Reference Rate	KK_FRR_KR200	§3.1.3	Underlying data: KOSPI 200 Index Futures (KRX)
Equity	Kaiko KR Broad-Market Equity Futures Reference Rate	KK_FRR_KR300	§3.1.3	Underlying data: KRX 300 Index Futures (KRX)
Equity	Kaiko KR Equity Volatility Futures Reference Rate	KK_FRR_KRVOL	§3.1.3	Underlying data: V-KOSPI Futures (KRX)
Equity	Kaiko SG-Listed China A-Share Futures Reference Rate	KK_FRR_SGA50	§3.1.3	Underlying data: FTSE China A50 Index Futures (SGX)
Equity	Kaiko SG-Listed H-Share Futures Reference Rate	KK_FRR_SGH50	§3.1.3	Underlying data: SGX FTSE China H50 Index Futures (SGX)
Equity	Kaiko SG-Listed Indonesia Equity Futures Reference Rate	KK_FRR_SGIDN	§3.1.3	Underlying data: SGX FTSE Indonesia Index Futures (SGX)
Equity	Kaiko SG-Listed Japan Large-Cap Futures Reference Rate (USD)	KK_FRR_SGJPNU	§3.1.3	Underlying data: USD Nikkei 225 Index Futures (SGX)
Equity	Kaiko SG-Listed Japan Large-Cap Futures Reference Rate (JPY)	KK_FRR_SGJPNY	§3.1.3	Underlying data: Nikkei 225 Index Futures (JPY) (SGX)
Equity	Kaiko SG-Listed Malaysia Equity Futures Reference Rate	KK_FRR_SGMYS	§3.1.3	Underlying data: SGX FTSE Malaysia Index Futures (SGX)
Equity	Kaiko SG-Listed Philippines Equity Futures Reference Rate	KK_FRR_SGPHL	§3.1.3	Underlying data: SGX FTSE Philippines Index Futures (SGX)
Equity	Kaiko SG Large-Cap Equity Futures Reference Rate	KK_FRR_SGSGP	§3.1.3	Underlying data: MSCI SG Index Futures (SGX)
Equity	Kaiko SG Overnight Rate Futures Reference Rate	KK_FRR_SGSOR	§3.1.3	Underlying data: 3M SORA Futures (SGX)
Equity	Kaiko SG Domestic Benchmark Futures Reference Rate	KK_FRR_SGSTI	§3.1.3	Underlying data: Straits Times Index Futures (SGX)

[Appendix A] List of Capital Market Rates with Corresponding Methodology and additional Information

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Asset Class	Name	Ticker	Methodology	Note
Equity	Kaiko SG-Listed Thailand Equity Futures Reference Rate	KK_FRR_SGTHA	§3.1.3	Underlying data: SGX FTSE Thailand Index Futures (SGX)
Equity	Kaiko SG-Listed Japan Overnight Rate Futures Reference Rate	KK_FRR_SGTON	§3.1.3	Underlying data: 3M TONA Futures (SGX)
Equity	Kaiko SG-Listed Taiwan Equity Futures Reference Rate	KK_FRR_SGTWN	§3.1.3	Underlying data: SGX FTSE Taiwan Index Futures (SGX)
Equity	Kaiko SG-Listed Vietnam Equity Futures Reference Rate	KK_FRR_SGVNM	§3.1.3	Underlying data: SGX FTSE Vietnam 30 Index Futures (SGX)
Equity	Kaiko Applied Optoelectronics, Inc. - Common Stock USD Equity Reference	KK_RFR_AAOIUSD	§3.1.1	
Equity	Kaiko Apple USD Equity Reference Rate	KK_RFR_AAPLUSD	§3.1.1	
Equity	Kaiko AbbVie USD Equity Reference Rate	KK_RFR_ABBVUSD	§3.1.1	
Equity	Kaiko Adobe Inc. - Common Stock USD Equity Reference Rate	KK_RFR_ADBEUSD	§3.1.1	
Equity	Kaiko Astera Labs USD Equity Reference Rate	KK_RFR_ALABUSD	§3.1.1	
Equity	Kaiko Applied Materials, Inc. - Common Stock USD Equity Reference Rate	KK_RFR_AMATUSD	§3.1.1	
Equity	Kaiko Advanced Micro Devices USD Equity Reference Rate	KK_RFR_AMDUSD	§3.1.1	
Equity	Kaiko Amazon USD Equity Reference Rate	KK_RFR_AMZNUSD	§3.1.1	
Equity	Kaiko Applied Digital USD Equity Reference Rate	KK_RFR_APLDUSD	§3.1.1	
Equity	Kaiko Applovin Corporation USD Equity Reference Rate	KK_RFR_APPUSD	§3.1.1	
Equity	Kaiko ARKK Reference Rate	KK_RFR_ARKKUSD	§3.1.1	
Equity	Kaiko Arm Holdings plc - American Depositary Shares USD Equity Referenc	KK_RFR_ARMUSD	§3.1.1	
Equity	Kaiko ARTY Reference Rate	KK_RFR_ARTYUSD	§3.1.1	
Equity	Kaiko ASHR Reference Rate	KK_RFR_ASHRUSD	§3.1.1	
Equity	Kaiko ASML Holding N.V. - New York Registry Shares USD Equity Reference	KK_RFR_ASMLUSD	§3.1.1	
Equity	Kaiko AST SpaceMobile, Inc. - Class A Common Stock USD Equity Referenc	KK_RFR_ASTSUSD	§3.1.1	
Equity	Kaiko Broadcom USD Equity Reference Rate	KK_RFR_AVGOUSD	§3.1.1	
Equity	Kaiko AXT Inc - Common Stock USD Equity Reference Rate	KK_RFR_AXTIUSD	§3.1.1	
Equity	Kaiko Alibaba Group USD Equity Reference Rate	KK_RFR_BABAUSD	§3.1.1	
Equity	Kaiko Bank of America USD Equity Reference Rate	KK_RFR_BACUSD	§3.1.1	
Equity	Kaiko BlackBerry Limited USD Equity Reference Rate	KK_RFR_BBUSD	§3.1.1	
Equity	Kaiko Bloom Energy Corporation USD Equity Reference Rate	KK_RFR_BEUSD	§3.1.1	
Equity	Kaiko Baidu, Inc. - American Depositary Shares, each representing 8 ordina	KK_RFR_BIDUUSD	§3.1.1	
Equity	Kaiko BITO Reference Rate	KK_RFR_BITOUSD	§3.1.1	
Equity	Kaiko BLOK Reference Rate	KK_RFR_BLOKUSD	§3.1.1	
Equity	Kaiko Bullish USD Equity Reference Rate	KK_RFR_BLSHUSD	§3.1.1	
Equity	Kaiko Bitmine Immersion Technologies USD Equity Reference Rate	KK_RFR_BMNRUSD	§3.1.1	
Equity	Kaiko CEA Industries Inc. USD Equity Reference Rate	KK_RFR_BNCUSD	§3.1.1	
Equity	Kaiko RoboStrategy, Inc. USD Equity Reference Rate	KK_RFR_BOTUSD	§3.1.1	
Equity	Kaiko BOTZ Reference Rate	KK_RFR_BOTZUSD	§3.1.1	
Equity	Kaiko BP PLC ADR USD Equity Reference Rate	KK_RFR_BPUSD	§3.1.1	
Equity	Kaiko Berkshire Hathaway Inc. New Common Stock USD Equity Reference F	KK_RFR_BRKBUSD	§3.1.1	
Equity	Kaiko Bending Spoons S.p.A USD Equity Reference Rate	KK_RFR_BSPUSD	§3.1.1	
Equity	Kaiko Bit Digital USD Equity Reference Rate	KK_RFR_BTBTUSD	§3.1.1	
Equity	Kaiko BTCS USD Equity Reference Rate	KK_RFR_BTCSUSD	§3.1.1	
Equity	Kaiko Bitdeer Technologies USD Equity Reference Rate	KK_RFR_BTDRUSD	§3.1.1	
Equity	Kaiko Blackstone Inc. USD Equity Reference Rate	KK_RFR_BXUSD	§3.1.1	
Equity	Kaiko CANG USD Equity Reference Rate	KK_RFR_CANGUSD	§3.1.1	
Equity	Kaiko Caterpillar Inc. USD Equity Reference Rate	KK_RFR_CATUSD	§3.1.1	
Equity	Kaiko Cerebras Systems Inc. - Class A Common Stock USD Equity Referenc	KK_RFR_CBRSUSD	§3.1.1	
Equity	Kaiko Cameco USD Equity Reference Rate	KK_RFR_CCJUSD	§3.1.1	
Equity	Kaiko Constellation Energy USD Equity Reference Rate	KK_RFR_CEGUSD	§3.1.1	
Equity	Kaiko Cognex Corporation USD Equity Reference Rate	KK_RFR_CGNXUSD	§3.1.1	
Equity	Kaiko CIENA CORP USD Equity Reference Rate	KK_RFR_CIENUSD	§3.1.1	
Equity	Kaiko Cipher Mining USD Equity Reference Rate	KK_RFR_CIFRUSD	§3.1.1	
Equity	Kaiko CleanSpark USD Equity Reference Rate	KK_RFR_CLSKUSD	§3.1.1	
Equity	Kaiko Coherent Corp. - Common Stock USD Equity Reference Rate	KK_RFR_COHRUSD	§3.1.1	
Equity	Kaiko Coinbase Global USD Equity Reference Rate	KK_RFR_COINUSD	§3.1.1	
Equity	Kaiko Core Scientific USD Equity Reference Rate	KK_RFR_CORZUSD	§3.1.1	
Equity	Kaiko Costco Wholesale USD Equity Reference Rate	KK_RFR_COSTUSD	§3.1.1	
Equity	Kaiko Circle Internet Financial USD Equity Reference Rate	KK_RFR_CRCLUSD	§3.1.1	
Equity	Kaiko Credo Technology Group Holding Ltd - Ordinary Shares USD Equity Re	KK_RFR_CRDOUSD	§3.1.1	
Equity	Kaiko Salesforce, Inc. USD Equity Reference Rate	KK_RFR_CRMUSD	§3.1.1	
Equity	Kaiko CrowdStrike Holdings, Inc. - Class A Common Stock USD Equity Refer	KK_RFR_CRWDUSD	§3.1.1	
Equity	Kaiko CoreWeave USD Equity Reference Rate	KK_RFR_CRWVUSD	§3.1.1	
Equity	Kaiko Cisco Systems USD Equity Reference Rate	KK_RFR_CSCOUSD	§3.1.1	
Equity	Kaiko Chevron USD Equity Reference Rate	KK_RFR_CVXUSD	§3.1.1	
Equity	Kaiko Dell Technologies USD Equity Reference Rate	KK_RFR_DELLUSD	§3.1.1	
Equity	Kaiko The Walt Disney Company USD Equity Reference Rate	KK_RFR_DISUSD	§3.1.1	
Equity	Kaiko DraftKings Inc. - Class A Common Stock USD Equity Reference Rate	KK_RFR_DKNGUSD	§3.1.1	
Equity	Kaiko DRAM Reference Rate	KK_RFR_DRAMUSD	§3.1.1	
Equity	Kaiko eBay Inc. - Common Stock USD Equity Reference Rate	KK_RFR_EBAYUSD	§3.1.1	
Equity	Kaiko EEM Reference Rate	KK_RFR_EEMUSD	§3.1.1	
Equity	Kaiko EFA Reference Rate	KK_RFR_EFAUSD	§3.1.1	
Equity	Kaiko EFAV Reference Rate	KK_RFR_EFAVUSD	§3.1.1	
Equity	Kaiko eToro Group USD Equity Reference Rate	KK_RFR_ETORUSD	§3.1.1	
Equity	Kaiko EWJ Reference Rate	KK_RFR_EWJUSD	§3.1.1	
Equity	Kaiko EWT Reference Rate	KK_RFR_EWTUSD	§3.1.1	
Equity	Kaiko EWU Reference Rate	KK_RFR_EWUUSD	§3.1.1	
Equity	Kaiko EWY Reference Rate	KK_RFR_EWYUSD	§3.1.1	
Equity	Kaiko EWZ Reference Rate	KK_RFR_EWZUSD	§3.1.1	
Equity	Kaiko FEZ Reference Rate	KK_RFR_FEZUSD	§3.1.1	
Equity	Kaiko Flex USD Equity Reference Rate	KK_RFR_FLEXUSD	§3.1.1	
Equity	Kaiko Fluence Energy, Inc. - Class A Common Stock USD Equity Reference F	KK_RFR_FLNCUSD	§3.1.1	
Equity	Kaiko Forward Industries, Inc. USD Equity Reference Rate	KK_RFR_FWDIUSD	§3.1.1	

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Asset Class	Name	Ticker	Methodology	Note
Equity	Kaiko FXI Reference Rate	KK_RFR_FXIUSD	§3.1.1	
Equity	Kaiko GDX Reference Rate	KK_RFR_GDXUSD	§3.1.1	
Equity	Kaiko GE Vernova USD Equity Reference Rate	KK_RFR_GEVUSD	§3.1.1	
Equity	Kaiko Corning Incorporated USD Equity Reference Rate	KK_RFR_GLWUSD	§3.1.1	
Equity	Kaiko Galaxy Digital Holdings USD Equity Reference Rate	KK_RFR_GLXYUSD	§3.1.1	
Equity	Kaiko GameStop Corp. Class A USD Equity Reference Rate	KK_RFR_GMEUSD	§3.1.1	
Equity	Kaiko Alphabet USD Equity Reference Rate	KK_RFR_GOOGLUSD	§3.1.1	
Equity	Kaiko Goldman Sachs Group Inc. USD Equity Reference Rate	KK_RFR_GSUSD	§3.1.1	
Equity	Kaiko Home Depot, Inc. USD Equity Reference Rate	KK_RFR_HDUSD	§3.1.1	
Equity	Kaiko Hims & Hers Health, Inc. USD Equity Reference Rate	KK_RFR_HIMSUSD	§3.1.1	
Equity	Kaiko HIVE Digital Technologies USD Equity Reference Rate	KK_RFR_HIVEUSD	§3.1.1	
Equity	Kaiko Honda Motor Company, Ltd. Common Stock USD Equity Reference Ra	KK_RFR_HMCUSD	§3.1.1	
Equity	Kaiko Robinhood Markets USD Equity Reference Rate	KK_RFR_HOODUSD	§3.1.1	
Equity	Kaiko Hewlett Packard Enterprise USD Equity Reference Rate	KK_RFR_HPEUSD	§3.1.1	
Equity	Kaiko Hut 8 USD Equity Reference Rate	KK_RFR_HUTUSD	§3.1.1	
Equity	Kaiko HYG Reference Rate	KK_RFR_HYGUSD	§3.1.1	
Equity	Kaiko IBM USD Equity Reference Rate	KK_RFR_IBMUSD	§3.1.1	
Equity	Kaiko IMTM Reference Rate	KK_RFR_IMTMUSD	§3.1.1	
Equity	Kaiko Infleqtion, Inc. Common Stock USD Equity Reference Rate	KK_RFR_INFQUSD	§3.1.1	
Equity	Kaiko Intel Corporation - Common Stock USD Equity Reference Rate	KK_RFR_INTCUSD	§3.1.1	
Equity	Kaiko INTW Reference Rate	KK_RFR_INTWUSD	§3.1.1	
Equity	Kaiko IQLT Reference Rate	KK_RFR_IQLTUSD	§3.1.1	
Equity	Kaiko IREN Limited USD Equity Reference Rate	KK_RFR_IRENUSD	§3.1.1	
Equity	Kaiko IWM Reference Rate	KK_RFR_IWMUSD	§3.1.1	
Equity	Kaiko ORIX Corporation American Depositary Shares USD Equity Reference	KK_RFR_IXUSD	§3.1.1	
Equity	Kaiko JD.com USD Equity Reference Rate	KK_RFR_JDUSD	§3.1.1	
Equity	Kaiko Johnson & Johnson USD Equity Reference Rate	KK_RFR_JNJUSD	§3.1.1	
Equity	Kaiko JPMorgan Chase USD Equity Reference Rate	KK_RFR_JPMUSD	§3.1.1	
Equity	Kaiko KDEF Reference Rate	KK_RFR_KDEFUSD	§3.1.1	
Equity	Kaiko KLA Corporation USD Equity Reference Rate	KK_RFR_KLACUSD	§3.1.1	
Equity	Kaiko Klarna Group plc USD Equity Reference Rate	KK_RFR_KLARUSD	§3.1.1	
Equity	Kaiko KORU Reference Rate	KK_RFR_KORUUSD	§3.1.1	
Equity	Kaiko KRE Reference Rate	KK_RFR_KREUSD	§3.1.1	
Equity	Kaiko KSTR Reference Rate	KK_RFR_KSTRUSD	§3.1.1	
Equity	Kaiko KWEB Reference Rate	KK_RFR_KWEBUSD	§3.1.1	
Equity	Kaiko LABU Reference Rate	KK_RFR_LABUUSD	§3.1.1	
Equity	Kaiko Lumentum Holdings Inc. - Common Stock USD Equity Reference Rate	KK_RFR_LITEUSD	§3.1.1	
Equity	Kaiko Li Auto Inc. - American Depositary Shares USD Equity Reference Rate	KK_RFR_LIUSD	§3.1.1	
Equity	Kaiko Eli Lilly USD Equity Reference Rate	KK_RFR_LLYUSD	§3.1.1	
Equity	Kaiko Lam Research Corporation USD Equity Reference Rate	KK_RFR_LRCXUSD	§3.1.1	
Equity	Kaiko MARA Holdings USD Equity Reference Rate	KK_RFR_MARAUSD	§3.1.1	
Equity	Kaiko Mastercard USD Equity Reference Rate	KK_RFR_MAUSD	§3.1.1	
Equity	Kaiko Meta Platforms USD Equity Reference Rate	KK_RFR_METAUSD	§3.1.1	
Equity	Kaiko Mizuho Financial Group, Inc. Sponosred ADR (Japan) USD Equity Refe	KK_RFR_MFGUSD	§3.1.1	
Equity	Kaiko MP Materials Corp. USD Equity Reference Rate	KK_RFR_MPUSD	§3.1.1	
Equity	Kaiko Marvell Technology, Inc. - Common Stock USD Equity Reference Rate	KK_RFR_MRVLUSD	§3.1.1	
Equity	Kaiko Microsoft USD Equity Reference Rate	KK_RFR_MSFTUSD	§3.1.1	
Equity	Kaiko Strategy (MicroStrategy) USD Equity Reference Rate	KK_RFR_MSTRUSD	§3.1.1	
Equity	Kaiko MTUM Reference Rate	KK_RFR_MTUMUSD	§3.1.1	
Equity	Kaiko Mitsubishi UFJ Financial Group, Inc. USD Equity Reference Rate	KK_RFR_MUFGUSD	§3.1.1	
Equity	Kaiko Micron Technology USD Equity Reference Rate	KK_RFR_MUUSD	§3.1.1	
Equity	Kaiko MUU Reference Rate	KK_RFR_MUUUSD	§3.1.1	
Equity	Kaiko MVLL Reference Rate	KK_RFR_MVLLUSD	§3.1.1	
Equity	Kaiko Nebius Group USD Equity Reference Rate	KK_RFR_NBISUSD	§3.1.1	
Equity	Kaiko Netflix USD Equity Reference Rate	KK_RFR_NFLXUSD	§3.1.1	
Equity	Kaiko NIO Inc. American depositary shares, each representing one Class A	KK_RFR_NIOUSD	§3.1.1	
Equity	Kaiko NLR Reference Rate	KK_RFR_NLRUSD	§3.1.1	
Equity	Kaiko Nomura Holdings, Inc USD Equity Reference Rate	KK_RFR_NMRUSD	§3.1.1	
Equity	Kaiko Nokia Corporation USD Equity Reference Rate	KK_RFR_NOKUSD	§3.1.1	
Equity	Kaiko SERVICENOW, INC. USD Equity Reference Rate	KK_RFR_NOWUSD	§3.1.1	
Equity	Kaiko NVIDIA USD Equity Reference Rate	KK_RFR_NVDAUSD	§3.1.1	
Equity	Kaiko Novo-Nordisk A/S USD Equity Reference Rate	KK_RFR_NVOUSD	§3.1.1	
Equity	Kaiko Oklo USD Equity Reference Rate	KK_RFR_OKLOUSD	§3.1.1	
Equity	Kaiko Okta, Inc. - Class A Common Stock USD Equity Reference Rate	KK_RFR_OKTAUSD	§3.1.1	
Equity	Kaiko Ondas Inc - Common Stock USD Equity Reference Rate	KK_RFR_ONDSUSD	§3.1.1	
Equity	Kaiko ON Semiconductor Corporation - Common Stock USD Equity Referen	KK_RFR_ONUSD	§3.1.1	
Equity	Kaiko Oracle USD Equity Reference Rate	KK_RFR_ORCLUSD	§3.1.1	
Equity	Kaiko Oscar Health, Inc. USD Equity Reference Rate	KK_RFR_OSCRUSD	§3.1.1	
Equity	Kaiko Occidental Petroleum Corporation USD Equity Reference Rate	KK_RFR_OXYUSD	§3.1.1	
Equity	Kaiko Palo Alto Networks, Inc. USD Equity Reference Rate	KK_RFR_PANWUSD	§3.1.1	
Equity	Kaiko PayPay Corporation - American Depository Shares USD Equity Refere	KK_RFR_PAYPUSD	§3.1.1	
Equity	Kaiko PDD Holdings Inc. - American Depositary Shares USD Equity Referen	KK_RFR_PDDUSD	§3.1.1	
Equity	Kaiko Penguin Solutions, Inc. USD Equity Reference Rate	KK_RFR_PENGUSD	§3.1.1	
Equity	Kaiko Palantir Technologies USD Equity Reference Rate	KK_RFR_PLTRUSD	§3.1.1	
Equity	Kaiko PayPal Holdings USD Equity Reference Rate	KK_RFR_PYPLUSD	§3.1.1	
Equity	Kaiko QUALCOMM Incorporated - Common Stock USD Equity Reference Ra	KK_RFR_QCOMUSD	§3.1.1	
Equity	Kaiko Quantinuum Holdings, Inc. - Common Stock USD Equity Reference Ra	KK_RFR_QNTUSD	§3.1.1	
Equity	Kaiko QQQ Reference Rate	KK_RFR_QQQUSD	§3.1.1	
Equity	Kaiko QUAL Reference Rate	KK_RFR_QUALUSD	§3.1.1	

[Appendix A] List of Capital Market Rates with Corresponding Methodology and additional Information

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Asset Class	Name	Ticker	Methodology	Note
Equity	Kaiko Aries I Acquisition Corporation - Class A Ordinary Share USD Equity R	KK_RFR_RAMUSD	§3.1.1	
Equity	Kaiko REMX Reference Rate	KK_RFR_REMXUSD	§3.1.1	
Equity	Kaiko Riot Platforms USD Equity Reference Rate	KK_RFR_RIOTUSD	§3.1.1	
Equity	Kaiko Rivian Automotive, Inc. - Class A Common Stock USD Equity Referen	KK_RFR_RIVNUSD	§3.1.1	
Equity	Kaiko Rocket Lab Corporation - Common Stock USD Equity Reference Rate	KK_RFR_RKLBUSD	§3.1.1	
Equity	Kaiko Rockwell Automation, Inc. USD Equity Reference Rate	KK_RFR_ROKUSD	§3.1.1	
Equity	Kaiko RTX Corporation USD Equity Reference Rate	KK_RFR_RTXUSD	§3.1.1	
Equity	Kaiko SharpLink Gaming USD Equity Reference Rate	KK_RFR_SBETUSD	§3.1.1	
Equity	Kaiko SharonAI Holdings, Inc. USD Equity Reference Rate	KK_RFR_SHAZUSD	§3.1.1	
Equity	Kaiko Shell PLC ADR USD Equity Reference Rate	KK_RFR_SHELUSD	§3.1.1	
Equity	Kaiko AHLD Reference Rate	KK_RFR_SHLDUSD	§3.1.1	
Equity	Kaiko Silicon Motion Technology Corporation (ADR) USD Equity Reference R	KK_RFR_SIMOUSD	§3.1.1	
Equity	Kaiko SK Hynix ADR USD Equity Reference Rate	KK_RFR_SKHYUSD	§3.1.1	
Equity	Kaiko SLX Reference Rate	KK_RFR_SLXUSD	§3.1.1	
Equity	Kaiko Super Micro Computer, Inc. - Common Stock USD Equity Reference R	KK_RFR_SMCIUSD	§3.1.1	
Equity	Kaiko Sumitomo Mitsui Financial Group Inc Unsponsored American Deposit	KK_RFR_SMFGUSD	§3.1.1	
Equity	Kaiko SMH Reference Rate	KK_RFR_SMHUSD	§3.1.1	
Equity	Kaiko SanDisk USD Equity Reference Rate	KK_RFR_SNDKUSD	§3.1.1	
Equity	Kaiko Snowflake Inc. USD Equity Reference Rate	KK_RFR_SNOWUSD	§3.1.1	
Equity	Kaiko SNXX Reference Rate	KK_RFR_SNXXUSD	§3.1.1	
Equity	Kaiko SoFi Technologies, Inc. USD Equity Reference Rate	KK_RFR_SOFIUSD	§3.1.1	
Equity	Kaiko Sony Group Corporation American Depositary Shares USD Equity Ref	KK_RFR_SONYUSD	§3.1.1	
Equity	Kaiko SOXL Reference Rate	KK_RFR_SOXLUSD	§3.1.1	
Equity	Kaiko SOXS Reference Rate	KK_RFR_SOXSUSD	§3.1.1	
Equity	Kaiko SOXX Reference Rate	KK_RFR_SOXXUSD	§3.1.1	
Equity	Kaiko SpaceX USD Equity Reference Rate	KK_RFR_SPCXUSD	§3.1.1	
Equity	Kaiko Spotify Technology S.A. USD Equity Reference Rate	KK_RFR_SPOTUSD	§3.1.1	
Equity	Kaiko SPY Reference Rate	KK_RFR_SPYUSD	§3.1.1	
Equity	Kaiko SQQQ Reference Rate	KK_RFR_SQQQUSD	§3.1.1	
Equity	Kaiko Strategy - Variable Rate Series A Perpetual Stretch Preferred Stock U	KK_RFR_STRCUSD	§3.1.1	
Equity	Kaiko Seagate Technology Holdings USD Equity Reference Rate	KK_RFR_STXUSD	§3.1.1	
Equity	Kaiko Takeda Pharmaceutical Company Limited American Depositary Share	KK_RFR_TAKUSD	§3.1.1	
Equity	Kaiko TBT Reference Rate	KK_RFR_TBTUSD	§3.1.1	
Equity	Kaiko Trip.com Group Limited - American Depositary Shares USD Equity Re	KK_RFR_TCOMUSD	§3.1.1	
Equity	Kaiko Teradyne USD Equity Reference Rate	KK_RFR_TERUSD	§3.1.1	
Equity	Kaiko TMF Reference Rate	KK_RFR_TMFUSD	§3.1.1	
Equity	Kaiko Toyota Motor Corporation Common Stock USD Equity Reference Rate	KK_RFR_TMUSD	§3.1.1	
Equity	Kaiko TQQQ Reference Rate	KK_RFR_TQQQUSD	§3.1.1	
Equity	Kaiko Tesla USD Equity Reference Rate	KK_RFR_TSLAUSD	§3.1.1	
Equity	Kaiko Taiwan Semiconductor Manufacturing USD Equity Reference Rate	KK_RFR_TSMUSD	§3.1.1	
Equity	Kaiko TotalEnergies SE USD Equity Reference Rate	KK_RFR_TTEUSD	§3.1.1	
Equity	Kaiko Take-Two Interactive Software USD Equity Reference Rate	KK_RFR_TTWOUSD	§3.1.1	
Equity	Kaiko Twilio Inc. USD Equity Reference Rate	KK_RFR_TWLOUSD	§3.1.1	
Equity	Kaiko Texas Instruments Incorporated USD Equity Reference Rate	KK_RFR_TXNUSD	§3.1.1	
Equity	Kaiko TZA Reference Rate	KK_RFR_TZAUSD	§3.1.1	
Equity	Kaiko Uber Technologies, Inc. USD Equity Reference Rate	KK_RFR_UBERUSD	§3.1.1	
Equity	Kaiko URNM Reference Rate	KK_RFR_URNMUSD	§3.1.1	
Equity	Kaiko USA Rare Earth, Inc. - Common Stock USD Equity Reference Rate	KK_RFR_USARUSD	§3.1.1	
Equity	Kaiko USMV Reference Rate	KK_RFR_USMVUSD	§3.1.1	
Equity	Kaiko Vicor Corporation - Common Stock USD Equity Reference Rate	KK_RFR_VICRUSD	§3.1.1	
Equity	Kaiko Valero Energy Corporation USD Equity Reference Rate	KK_RFR_VLOUSD	§3.1.1	
Equity	Kaiko VLUE Reference Rate	KK_RFR_VLUEUSD	§3.1.1	
Equity	Kaiko VOO Reference Rate	KK_RFR_VOOUSD	§3.1.1	
Equity	Kaiko Vertiv Holdings USD Equity Reference Rate	KK_RFR_VRTUSD	§3.1.1	
Equity	Kaiko Vistra USD Equity Reference Rate	KK_RFR_VSTUSD	§3.1.1	
Equity	Kaiko Visa USD Equity Reference Rate	KK_RFR_VUSD	§3.1.1	
Equity	Kaiko Western Digital USD Equity Reference Rate	KK_RFR_WDCUSD	§3.1.1	
Equity	Kaiko Wendy's Company USD Equity Reference Rate	KK_RFR_WENUSD	§3.1.1	
Equity	Kaiko Walmart USD Equity Reference Rate	KK_RFR_WMTUSD	§3.1.1	
Equity	Kaiko WOOD Reference Rate	KK_RFR_WOODUSD	§3.1.1	
Equity	Kaiko TeraWulf USD Equity Reference Rate	KK_RFR_WULFUSD	§3.1.1	
Equity	Kaiko XLB Reference Rate	KK_RFR_XLBUSD	§3.1.1	
Equity	Kaiko XLC Reference Rate	KK_RFR_XLCUSD	§3.1.1	
Equity	Kaiko XLE Reference Rate	KK_RFR_XLEUSD	§3.1.1	
Equity	Kaiko XLF Reference Rate	KK_RFR_XLFUSD	§3.1.1	
Equity	Kaiko XLI Reference Rate	KK_RFR_XLIUSD	§3.1.1	
Equity	Kaiko XLK Reference Rate	KK_RFR_XLKUSD	§3.1.1	
Equity	Kaiko XLP Reference Rate	KK_RFR_XLPUSD	§3.1.1	
Equity	Kaiko XLU Reference Rate	KK_RFR_XLUUSD	§3.1.1	
Equity	Kaiko XLV Reference Rate	KK_RFR_XLVUSD	§3.1.1	
Equity	Kaiko XLY Reference Rate	KK_RFR_XLYUSD	§3.1.1	
Equity	Kaiko ExxonMobil USD Equity Reference Rate	KK_RFR_XOMUSD	§3.1.1	
Equity	Kaiko XPeng Inc. American depositary shares, each representing two Class	KK_RFR_XPEVUSD	§3.1.1	
Equity	Kaiko Block USD Equity Reference Rate	KK_RFR_XYZUSD	§3.1.1	
Equity	Kaiko Zoom Communications, Inc. - Class A Common Stock USD Equity Ref	KK_RFR_ZMUSD	§3.1.1	
FX	Kaiko Australia Dollar-US Dollar Rate	KK_RFR_AUDUSD	§3.2.1	
FX	Kaiko Euro-US Dollar Rate	KK_RFR_EURUSD	§3.2.1	
FX	Kaiko UK Pound Sterling-US Dollar Rate	KK_RFR_GBPUSD	§3.2.1	
FX	Kaiko US Dollar-Brazilian Real Rate	KK_RFR_USDBRL	§3.2.1	

[Appendix A] List of Capital Market Rates with Corresponding Methodology and additional Information

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Asset Class	Name	Ticker	Methodology	Note
FX	Kaiko US Dollar-Canadia Dollar Rate	KK_RFR_USDCAD	§3.2.1	
FX	Kaiko US Dollar-Swiss Franc Rate	KK_RFR_USDCHF	§3.2.1	
FX	Kaiko US Dollar-Offshore Chinese Yuan Rate	KK_RFR_USDCNH	§3.2.1	
FX	Kaiko US Dollar-Chinese Yuan Rate	KK_RFR_USDCNY	§3.2.1	
FX	Kaiko US Dollar-Japanese Yen Rate	KK_RFR_USDJPY	§3.2.1	
FX	Kaiko US Dollar-Korean Won Rate	KK_RFR_USDKRW	§3.2.1	
FX	Kaiko US Dollar-Mexico Peso Rate	KK_RFR_USDMXN	§3.2.1	
FX	Kaiko US Dollar-Singapore Dollar Rate	KK_RFR_USDSGD	§3.2.1	