S-Network MicroSectors Gold Miners Index

Rules and Methodology

April 2021

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The S-Network MicroSectors Gold Miners Index
Rule Book

I.   General Description

The S-Network MicroSectors Gold Miners Index is a rules-based, market cap-weighted index tracking exchange-traded funds listed on U.S. national securities exchanges ("ETFs") that invest in publicly traded companies involved in mining gold.

II.   The Index Committee

The S-Network MicroSectors Gold Miners Index Committee ("The Committee") will be composed of not less than three members. The Committee Chair will have extensive experience in and expertise in financial markets and stock market characteristics.

The Committee will be responsible for maintaining the universe from which ETFs shall be impartially selected for inclusion in the Index.

The Committee will then review the ETFs to be included in the S-Network MicroSectors Gold Miners Index and may reject any ETF that it believes does not meet its overall standards for risk and sound business practice.

The Committee will meet at least four times per year, either in person or via teleconference, to discuss index issues and organize the quarterly or special reconstitution or quarterly rebalancing.

The composition of the Committee may from time to time be changed to reflect changes in market conditions.

The Index Committee has the responsibility of setting the rules of the Index to accurately depict market conditions and reflect market, legal and other developments, and may, when necessary, make adjustments to the ruleset.

III.   Index Value at Inception

The S-Network MicroSectors Gold Miners Index variants have values of 1,000 as of March 17, 2017, which change from that point forward based on the index compositions set according to the rules described herein.

IV.   Eligibility Criteria for Universe

From February 28, 2017 until further modification by the Index Committee, the S-Network MicroSectors Gold Miners Index's universe for constituent selection shall consist of the following ETFs:
- VanEck Vectors Gold Miners ETF (TICKER: GDX)
- VanEck Vectors Junior Gold Miners ETF (TICKER: GDXJ)

The universe shall be reviewed for potential additions or deletions each quarter as part of the reconstitution process.

V. Selection and Weighting Methodologies

All members of the S-Network MicroSectors Gold Miners Index's universe of ETFs with a market capitalization greater than 1 billion USD and average daily trading values in USD in excess of 1 million USD shall be selected for inclusion in the Index.

The constituents of the S-Network MicroSectors Gold Miners Index shall be weighted by their total market capitalizations via Index Market Capitalizations that are reflected upon each reconstitution's Effective Date and set as described in Section VI(iv) below.

VI. Roles of Parties in the Quarterly Reconstitutions.

i)   The EOD (End-of-Day) Index Calculation Agent shall determine a proposed update to the list of Index constituents using these Index rules together with data available as of the market close on the last trading date of the second month of the calendar quarter (the "Snapshot Date"). The EOD Index Calculation Agent shall provide the Index Committee with a list of the differences between this new list and the current Index constituents.

ii)   The Committee shall approve or reject the changes and notify the EOD Index Calculation Agent of its decisions no later than the Thursday following the first Friday of the third month of each calendar quarter (the "Rebalancing Month").

iii)   No later than the Thursday following the first Friday of the Rebalancing Month, the Index Committee or its designee shall issue a press release announcing any additions to and/or deletions from the S-Network MicroSectors Gold Miners Index. The press release shall be posted on the S-Network MicroSectors Gold Miners Index website.

iv)   The EOD Index Calculation Agent shall provide new Index Market Capitalizations to the Committee or its designee based on market-close data as of the second Friday of the Rebalancing Month (the "Weight Date"). Each constituent's Index Market Capitalization shall equal its Index Shares multiplied by its share price in USD. The Index Shares are the numbers of shares for each constituent set for the stock positions in a hypothetical portfolio created to calculate the level of the index. The Index Shares usually include fractional shares because the shares are set to meet the target Index Market Capitalizations. The target Index Market Capitalizations are set to reflect the relative market capitalization sizes of the Index constituents in accordance with the market capitalization-weighting methodology.

v)   The EOD Index Calculation Agent shall distribute the new Index Market Capitalizations to all approved parties via email and/or File Transfer Protocol (FTP) after the Weight Date.

The reconstitution or rebalancing will be effective at the close of trading on the third Friday of the Rebalancing Month (the "Effective Date"). The EOD Index Calculation Agent will post all final rebalancing data and information on its FTP server before the market open on the trade date following the Effective Date.

VII. Ongoing Maintenance

i)   In addition to the scheduled quarterly reviews, the S-Network MicroSectors Gold Miners Index is reviewed on an ongoing basis. Changes in index composition and related weight adjustments are necessary whenever there are extraordinary events such as delistings, mergers or takeovers involving one or more index components. In these cases, each event will be taken into account as soon as it is effective. Whenever possible, the changes in the index's components will be announced at least two business days prior to their implementation date. Changes in shares outstanding are reflected at each rebalancing, as well as between rebalancings for certain corporate actions such as share splits or consolidations.

ii)   Additions to the Index. Additions may be made to the S-Network MicroSectors Gold Miners Index at the close of trading on the quarterly rebalancing dates in the case of the creation or listing of new ETFs that has occurred more than 22 trading days prior to the rebalancing date.

iii)   Deletions from the Index. Deletions may be made to remove ETFs that fail to meet the inclusion criteria as of the Snapshot Date for a reconstitution or rebalancing, or in the event a constituent is delisted, is acquired or merges with another entity.

iv)   Changes of Eligible Securities. In the event that a component no longer meets the eligibility requirements described in Section IV herein, it may be removed from the index.

v)   Mergers. If two index constituents merge, their component positions will be replaced by the surviving entity immediately. If an index constituent merges with a non-component entity, it will be removed from the index and its weight will be redistributed to all the remaining constituents on a proportional basis.

vi)   Takeovers. If an index component is taken over by another index component, the former will be removed from the index immediately upon completion of the takeover. If an index component is taken over by a non-component entity, it will be removed from the index and its weight will be redistributed to all the remaining constituents on a proportional basis.

VIII.   *Calculation and Adjustments*

i)   Calculation Agents

The S-Network MicroSectors Gold Miners Index is calculated on an end-of-day basis by S-Network Global Indexes (the "EOD Index Calculation Agent") and on an intraday basis by Cboe Global Indices (the "Intraday Index Calculation Agent"). The EOD Index Calculation Agent is also responsible for index maintenance.

ii)   Input Data Sources

* Closing share prices for end-of-day Total Return-variant index calculation and last-traded share prices for intraday index calculation are provided by Refinitiv. If the current trading price of an issue is unavailable, the previous trading session's closing price is used. However, if the issue is affected by any corporate action that requires an adjustment, then the adjusted price is used.

* Volume-weighted average share prices (VWAPs) for end-of-day VWAP-variant calculation are provided by Cboe Market Data Services based on composite data for trades that occurred during the last 15 minutes of trading (usually between 15:45 ET and 16:00 ET). If no trades occurred for a constituent during that time period, the constituent's closing price is used instead of its VWAP.

* The number of outstanding shares is determined separately for each class of securities. This information is obtained from regulatory filings and a variety of data vendors. The data also may be sourced from the companies themselves.

* Corporate actions are sourced from public news services, regulatory filings and data vendors. The companies themselves may be used as an additional source.

* Float data are obtained from a variety of sources including data vendors, exchanges, regulators and the companies themselves.

iii)   Calculation of Index Shares

When set using price data as of the Effective Date, the Index Shares for a Constituent are calculated as follows:

$$S_i = \frac{T_i * A}{C_i}$$

Where:
- S_i is the number of Index Shares for Constituent i
- C_i is the closing price (in USD) for Constituent i on the Effective Date
- T_i is the Target Weight for Constituent i determined by the Index rules
- A is the (reset) Aggregate Index Market Capitalization (the sum of all the Constituents' Index Market Capitalizations, in this case set for rebalancing purposes)

Once made effective, the Index Shares then remain constant until the next rebalancing except when adjusted intraquarter for an event such as those whose resulting adjustments are described in Section VIII(vii) below.

iv) Calculation of the Index Divisor

For a given trade date, the Index Divisor is calculated as follows:

$$D_t = \frac{\sum_{i=1}^{n} O_{ti} * S_{ti}}{V_y}$$

Where:
- D_t is today's Index Divisor
- V_y is the previous trading day's Total Return variant level
- S_{ti} is today's number of Index Shares for Constituent i
- O_{ti} is today's opening price (in USD and based on the previous closing price with a possible adjustment) for Constituent i
- n is the number of Constituents in the Index

Therefore, in the absence of a change in the Aggregate Index Market Capitalization from the market close on one trade date to the market open on the next trade date, the Index Divisor remains constant over that time frame.

v) Calculation of the Total Return Variant

On a given trade date, the Total Return variant's index value is calculated as follows:

$$V_t = \frac{\sum_{i=1}^{n} C_{ti} * S_{ti}}{D_t}$$

Where:
- V_t is today's Total Return variant level
- S_{ti} is today's number of Index Shares for Constituent i
- C_{ti} is today's closing price (in USD) for Constituent i
- D_t is today's Index Divisor
- n is the number of Constituents in the Index

The Total Return variant reflects the reinvestment of any dividend gone ex into its originating Constituent by adjusting that Constituent's Index Shares and Index Price for the market open on the dividend's ex-date as described in Section VIII(vii) below.

vi) Calculation of the VWAP Variant

On a given trade date, the VWAP variant's index value is calculated as follows:

$$V_t = \frac{\sum_{i=1}^{n} W_{ti} * S_{ti}}{D_t}$$

Where:
- V_t is today's VWAP variant level
- S_{ti} is today's number of Index Shares for Constituent i
- W_{ti} is today's volume-weighted average price (in USD) for Constituent i
- D_t is today's Index Divisor
- n is the number of Constituents in the Index

The VWAP variant reflects the reinvestment of any dividend gone ex into its originating Constituent by adjusting that Constituent's Index Shares for the dividend's ex-date as described in Section VIII(vii) below.

vii)   Adjustments for Corporate Actions

An index divisor may decrease (▼) or increase (▲) or keep constant (■) when corporate actions occur for a component security. Index Shares may also be adjusted; if incorporating an adjustment to a constituent's share price, the calculation of the new Index Shares shall use the closing price or an adjusted price derived therefrom as opposed to the volume-weighted average price (VWAP) or an adjusted VWAP derived therefrom. Assuming shareholders receive "B" new shares and "A" shares are originally held for the following corporate actions:

■ A) CASH DIVIDEND (REGULAR OR SPECIAL)
adjusted price = closing price - dividend announced by the company
adjusted shares = closing index market capitalization / adjusted price per share

■ B) SPLIT OR REVERSE SPLIT
adjusted price = closing price * A / B
new number of shares = old number of shares * B / A

■ C) SHARE DIVIDEND
adjusted price = closing price * A / (A + B)
new number of shares = old number of shares * (A + B) / A

▼ D) IN-KIND DIVIDEND OF A DIFFERENT COMPANY SECURITY
adjusted price = (closing price * A - price of the different company security * B) / A

▼ E) RETURN OF CAPITAL AND SHARE CONSOLIDATION
adjusted price = (closing price - dividend announced by company) * A / B
new number of shares = old number of shares * B / A

▲ F) COMBINATION SHARE DISTRIBUTION (DIVIDEND OR SPLIT) [AND RIGHTS OFFERING]
Shareholders receive B new shares from the distribution and C new shares from the rights offering for every A shares held:

    * If rights are applicable after the distribution (one action applicable to other).
    adjusted price = [closing price * A + subscription price * C * (1 + B / A)] / [(A + B) * (1 + C / A)]
    new number of shares = old number of shares * [(A + B) * (1 + C / A)] / A

    * If the distribution is applicable after rights (one action applicable to other).
    adjusted price = [closing price * A + subscription price * C] / [(A + C) * (1 + B / A)]
    new number of shares = old number of shares * [(A + C) * (1 + B / A)]

▲ G) IN-KIND DISTRIBUTION AND RIGHTS (NEITHER ACTION IS APPLICABLE TO THE OTHER)
adjusted price = [closing price * A + subscription price * C] / [A + B + C]
new number of shares = old number of shares * [A + B + C]

viii)   Computational Precision. Values used in Index calculation are stored using up to 15 significant digits. Published Index levels are precise through six decimal places.

IX.   Calculation of Intraday Index Values

i)   The Intraday Index Calculation Agent will calculate intraday index values for the Total Return variant using price data on each reported trade it receives on each component security.

ii)   The Intraday Index Calculation Agent will distribute index values to vendors at set 15-second intervals, provided the index value has changed from the previously distributed value.

iii)   The index calculations will start each US trading day at 9:30 ET. At that time, the index will begin changing as new prices or exchange rates are processed.

iv)   Index calculation will cease each US trading day at 16:00 ET (unless earlier due to an early market closure) and official summaries will be disseminated between 17:00 ET and 19:00 ET.

v)   If, during periods when the index is calculated, one or more relevant securities exchanges are closed, the index calculation will continue using the last closing price for those stocks that trade on the closed exchange(s).

vi)   Stocks denominated in foreign currencies will be converted to USD with each reported price using exchange rates sourced from Refinitiv. Official closing prices for the indexes will be calculated using the Refinitiv snapshot rates as of 4:00 PM GMT.

X.   Dissemination

Index values will be disseminated via the Cboe Streaming Market Indices (CSMI) feed in USD using the following tickers:

Index	Ticker
The S-Network MicroSectors Gold Miners Total Return Index (USD)	MINERS
The S-Network MicroSectors Gold Miners VWAP Index (USD)	MINERSV

XI.   Data Correction Policy

To maintain a high standard of data integrity, a series of procedures have been implemented to ensure accuracy, timeliness and consistency. Input prices are monitored using a variety of computerized range-check warning systems. Fault tolerant methods are employed in the collection of market and corporate action data. Various verification and audit tasks are performed to ensure the quality of the data feeds and related market data. While every effort is taken to ensure the accuracy of the information used for the index calculation, an index error may occur due to incorrect or missing data, including trading prices, exchange rates, shares outstanding and corporate actions, due to operational errors or other reasons.

i)   Intraday Corrections. Reasonable efforts are employed to prevent erroneous data from affecting the indexes. Corrections will be made for erroneous prices and incorrect or missing corporate actions as soon as possible after detection.

ii)   Since the indexes are calculated on an intraday basis, an incorrect index value tick will not be fixed retroactively. Incorrect daily high/low index values will be corrected as soon as practicable.

iii)   Index-Related Data and Divisor Corrections. Incorrect pricing and corporate action data for individual issues in the database will be corrected upon detection. In addition, an incorrect divisor of an index, if discovered within five days of its occurrence, will always be fixed on the day it is discovered to prevent an error from being carried forward.

iv)   If a divisor error is discovered more than five days after occurrence, the adjustment will depend upon how significant the error is, how far back the error occurred and the feasibility of performing the adjustment.

XII.   Review Schedule

Share Updates
Frequency: Quarterly
Effective date: The close of trading on the third Friday of the last month of each calendar quarter
Advance notice: One business day

Reconstitutions
Frequency: Quarterly
Effective date: The close of trading on the third Friday of the last month of each calendar quarter
Advance notice: At least five business days

News Notification*
Frequency: As needed
Effective date: As announced
Advance notice: At least two business days whenever possible

*   Includes events such as de-listings, mergers and other extraordinary events.
*   Based on available news.