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**VanEck™ Natural Resources Index**

**&**

**S-Network Natural Resources Indexes**

**Rules and Methodology**

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## The S-Network Natural Resources Index Family (RVE Family<sup>SM</sup>)

### Methodology and Rules (Section I)

This document provides the rules for calculating and maintaining the VanEck<sup>TM</sup> Natural Resources Index Family (the “Family”). Included in these rules are the following: 1) a description of the Family and its various sub-indexes, 2) the design specifications for the Family and its various sub-indexes, and 3) the index calculation and data elements.

#### I. General Description

The Family is a system of modified capitalization weighted, float adjusted equity indexes designed to serve as stock market benchmarks for globally traded stocks which are principally engaged in the production of commodities. The Family comprises the following Indexes:

- The S-Network Natural Resources Composite Index<sup>SM</sup>
- The VanEck<sup>TM</sup> Natural Resources Index<sup>SM</sup>
- The S-Network Natural Resources Liquid Index<sup>SM</sup>
- The S-Network Natural Resources Energy Index<sup>SM</sup>
- The S-Network Natural Resources Agricultural Index<sup>SM</sup>
- The S-Network Natural Resources Metals Index<sup>SM</sup>

The Family comprises public companies engaged in the production of 1) **Energy Commodities**, covering producers of Oil, Natural Gas, Coal and Refined Energy Products, plus related service providers; 2) **Agricultural Commodities**, covering producers of Seed, Fertilizer, Farm Equipment and Agricultural Products; 3) **Base and Industrial Metals**, covering producers of Base Metals, Uranium, Steel, Copper and Aluminum; 4) **Precious Metals**, covering producers of Gold, Silver, Platinum, Palladium and Diamonds; 5) **Alternative Commodities**, covering producers of Renewable Energy (Wind, Solar, Ethanol, etc.) and Water; and 6) **Forest Products**, covering producers of Timber, Paper, and Paper-based containers. (See Section IV for detailed sub-sector breakdown.)

Family sectors are weighted by the Index Committee based on global consumption estimates, modified for certain market factors.

The Family contains stocks selected from a universe of equity securities traded on recognized stock exchanges in a) the Americas, b) Europe, Middle East & Africa (EMEA) and c) Asia/Pacific, based on a set of objective screening criteria. A modified capitalization, adjusted for free float, methodology is used to weight the eligible stocks, subject to certain capping processes.

The selection criteria include requirements for industry participation, primary exchange listing, minimum capitalization (adjusted for free float), minimum free float-adjusted capitalization, and minimum average daily trading volume.

All companies contained in the Family universe are categorized as being “principally engaged” in their respective sectors. For the purposes of the RVE, a principally engaged company must generate more than 50% of its total revenues from activities directly related to its sector (water = >25%). For capitalization weighting purposes, principally engaged companies are weighted based upon their full market capitalization, adjusted for free float.

## II. Index Value at Inception

The Family indexes are calculated both as Price Only Indexes and Total Return Indexes in both USD and EUR. The Family indexes had the following values on their inception date January 1, 2003:

The S-Network Natural Resources Composite Index <sup>SM</sup>	1000.00
The VanEck <sup>TM</sup> Natural Resources Index <sup>SM</sup>	1000.00
The S-Network Natural Resources Liquid Index <sup>SM</sup>	1000.00
The S-Network Natural Resources Energy Index <sup>SM</sup>	1000.00
The S-Network Natural Resources Metals Index <sup>SM</sup>	1000.00
The S-Network Natural Resources Agricultural Index <sup>SM</sup>	1000.00

## III. The Index Committee

The RVE Index Committee (“The Committee”) will be composed of not more than five members. The Committee Chairman will have extensive experience and expertise in financial markets and, in particular, Natural Resources Investments. The remaining members will have specific experience in one or more of the Family sectors and/or stock market operations.

The Committee will be responsible for 1) determining the sector weightings on an annual basis and 2) maintaining a comprehensive list of companies that are principally engaged in the various family sectors that will form the universe of stocks from which the index is developed (the “Universe”). The universe of stocks will be updated quarterly.

Impartial selection criteria will then be applied to these stocks to determine whether or not they are to be included in one or more Family indexes, also on a quarterly basis.

The Committee will then review the stocks to be included in the Family Indexes and may reject any stock that it believes does not meet its overall standards for risk and sound business practice.

The Committee will meet quarterly, either in person or via teleconference, to discuss index issues and organize the quarterly rebalancing.

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

#### IV. Sector Weightings

The Committee determines the sector weightings for the Family on the last Friday of May of each year and the revised sector weightings are applied to the Family as part of the index rebalancing that occurs on the third Friday of June of each year. These same sector weightings are then applied on each successive rebalancing until the June rebalancing of the following year, when revised sector weightings are applied.

The Committee analyzes multiple independent data sources, including data provided by **Multilateral Institutions, National Governments, Governmental Agencies and Industry Associations**, to develop estimates of global consumption of the various commodities represented in each sector. Consumption estimates are currency normalized in US dollars based on average exchange rates for the preceding year.

Certain adjustments may be made to the sector weightings to eliminate data anomalies and to address investment issues related to equity markets. A minimum sector weighting of 4% is applied to any sector, should the sector's share of global consumption of the commodities represented in the Family be less than 4%. The differential between the minimum sector weighting and the actual sector share is deducted on a pro rata basis from the remaining uncapped sectors.

At inception, the sector weights were:

Agriculture	31%
Alternatives	4%
Base/Industrial Metals	13%
Energy	41%
Forest Products	4%
Precious Metals	7%

The sectors comprise the following sub-sectors. For the purposes of the RVEI, a company must generate more than 50% of its total revenues from activities directly related to its sector (water = >25%)

Agriculture: 1) seeds, traits, chemicals and fertilizers; 2) machinery, equipment and irrigation; 3) agricultural producers; and 4) livestock producers and aquaculture.

Alternatives: 1) renewable energy resources (wind and solar); 2) energy efficiency; 3) water utilities; and 4) water infrastructure and technology.

Base/Industrial Metals: 1) aluminum; 2) diversified metals and mining; 3) steel; and uranium.

Energy: 1) coal & consumable fuels; 2) integrated oil and gas; 3) oil and gas exploration and production; 4) oil and gas drilling; 5) oil and gas equipment and services; 5) oil and gas refining and marketing; and 6) oil and gas storage and transportation, ex. shipping.

Paper and Forest Products: 1) forest products; 2) paper products; and 3) paper packaging.

Precious Metals: 1) gold; and 2) precious metals and minerals.

## V. Universe Eligibility Criteria

Only companies that meet the following eligibility criteria may be considered for inclusion in the Family universe of eligible stocks.

- i) The company has been classified by the Committee as being principally engaged (>50% of gross revenues derived from business directly related to the assigned sector). In the case of water, the company has been classified as materially engaged (>25% of gross revenues derived from business directly related to water).

A constituent of the RVE Index whose revenue falls below 40% of its total revenues from activities directly related to its sector (water = > 20%) on the announcement date shall be deleted from the RVE before the open of trade on the effective date of the next rebalancing.

- ii) The company's stock must trade on a recognized North American, European or Asian stock exchange that provides a "last closing price". (National Stock Exchange, formerly NASDAQ, stocks must be "reported securities" under 11Aa3-1 of the Securities and Exchange Act, i.e., National Market System stocks, and similar criteria apply to stocks with foreign listings.) For companies with multiple share classes, the eligibility of each share class will be considered based upon the market capitalization and the overall USD liquidity (average daily trading volume X average daily price) of each share class as if each represented a separate company. In selecting the share class for inclusion in the index, market capitalization and liquidity will be the basis for selection and the company will be represented by only one share class. Should the share classes have identical market capitalizations or turnover, then the other factor shall determine which share class is selected. The constituents of all Family indexes, except the Composite, must have a listing on an exchange that provides a last closing price. A list of approved countries is shown in Appendix A. For stocks whose primary listings are on exchanges in a country that is not approved, then a qualified ADR or GDR will be identified and, if eligible, the ADR or GDR will be represented in all Family indexes, except the Composite, where the most liquid security will be represented.
- iii) The minimum capitalization value for any stock will be greater than USD 500 million, or the equivalent amount in its listing currency. The minimum free float value for any stock will be greater than USD 250 million, or the equivalent amount in its listing currency. The stock's float adjusted market capitalization will be determined at index inception and will be revised with each quarterly reconstitution to reflect current market levels.
- iv) A constituent of the RVE Index whose market capitalization falls below USD 400 million on the quarterly announcement date shall be deleted from the RVE before the open of trade on the effective date of the next quarterly rebalancing.

- v) A constituent of the RVE Index whose market capitalization, adjusted for free float, falls below USD 200 million on the quarterly announcement date shall be deleted from the RVE before the open of trade on the effective date of the next quarterly rebalancing.
- vi) Companies must have an average daily turnover (shares traded X share price) of more than USD 1 million per day for the three months prior to a rebalancing date shall be eligible for inclusion in the Family universe.

If a company has been trading for fewer than three calendar months (“Recent IPO”) but more than 15 trading days, the company’s average daily turnover for its entire trading history, less its first five trading days, shall be used to calculate average daily turnover. Such companies may be added to the Composite on any rebalancing date at the discretion of the Committee. Recent IPOs in non-US jurisdictions will be added only after meeting relevant US regulations with respect qualifications for US ownership.

- vii) A constituent of the RVE Index whose average daily trading volume falls below USD 600,000 shall be deleted from the RVE before the open of trade on the effective date of the next quarterly rebalancing.

The Universe forms the basis for the construction of each of the Family indexes.

## **VI. The RVE Composite Index**

- i) Companies contained in the Universe with market capitalizations of more than USD 500 million and average daily turnover for the previous ninety days in excess of USD 1 million shall be included in the Composite Index, irrespective of primary listing exchange.
- ii) All eligible universe companies are assigned weights based upon their respective market capitalizations, adjusted for free float, within each of the sectors.
- iii) The weights of the stocks in each sector will then be modified by the weight assigned to the sector (the sector weight) as determined annually by the Index Committee.

## **VII. The RVE Index**

- i) Companies contained in the Universe that are listed on markets that 1) impose restrictions on foreign investment, 2) maintain restrictions on currency conversion, 3) maintain significant operational barriers for trading, clearance and settlement, and 4) represent significant economic or political risk are ineligible for inclusion in the Index.
- ii) The Index captures a minimum of 90% of the total market capitalization of each sector contained in the Universe. Companies are added to the Index

sector successively, starting with the company with the largest market capitalization in the sector. Companies are added to the sector in descending order based on their total market capitalization until the total market capitalization of the companies added to the sector equals at least 90% of the total sector market capitalization.

- iii) All eligible sector companies are then assigned weights based upon their respective sector market capitalizations, adjusted for free float, within each of the sectors.
- iv) The weights of the stocks in each sector will then be modified by the weight assigned to the sector (the sector weight) as determined annually by the Index Committee.
- v) Any stock with an initial weight in excess of 8% of the total weight of the index shall be capped at 8% of the total weight of the index and the excess weight shall be redistributed across all other index constituents in the sector in proportion to their respective weights in the index.

#### **VIII. The RVE Sector Indexes**

- i) The constituents contained in the RVE Agricultural Index are identical to the constituents of the Agricultural sector of the RVE Index.
- ii) The RVE Energy Index combines the Energy sector of the RVE Index plus the Alternative Energy sub-sector of the Alternatives sector. The weights of the two sectors in the RVE Energy Index are determined based upon their relative weights in the RVE Index.
- iii) The RVE Metals Index combines the Base/Industrial Metals and Precious Metals sectors of the RVE Index. The weights of the two sectors in the RVE Metals Index are determined based upon their relative weights in the RVE Index.
- iv) The Sector Indexes are capitalization weighted, adjusted for free float. Any stock with a weight in excess of 8% of the total weight of the sector shall be capped at 8% of the total weight of the sector and the excess weight shall be redistributed across all other constituents in the index on a proportional basis. This process is repeated until there are no stocks with weights in excess of 8%.
- v) The combined weight of all stocks with weights in excess of 5% shall be capped at 40% of the total weight of the sector and the excess weight shall be redistributed across all other constituents in the sector on a proportional basis.
- vi) Any non-previously capped stock with a weight in excess of 4.5% after steps iv and v will be capped at 4.5% and the excess weight shall be redistributed across all other non-capped index constituents on a proportional basis.



## **IX. The RVE Index (US Extra Liquid)**

- i) The number of companies contained in the USXL is fixed at 50. The sector weights of the USXL are the same as the sector weights of the Composite. The USXL contains a fixed number of stocks in each sector: a) twelve energy sector stocks; b) ten agricultural sector stocks; c) ten base/industrial metals stocks; and d) six stocks each from the remaining sectors.
- ii) Companies selected are those with the largest market capitalization (float adjusted) and the greatest liquidity (three month average daily trading volume in USD), adjusted to assure that both regional and sub-sector diversification is representative of the main index. To determine largest market capitalization and greatest liquidity, companies contained in the index are ranked in each category and the average of the two rankings is used for selection. In the event of a tie, the company with the highest average daily trading volume as a percentage of market capitalization is selected.
- iii) Preference will be accorded to US (Canadian) ordinaries and ADRs, so that at least 80% of the weight of the index is made up of US (Canadian) ordinaries and ADRs.
- iv) Companies that are selected for inclusion in the USXL are capitalization weighted (float adjusted) within each sector.
- v) The weights of companies contained in the Energy, Agricultural and Base/Industrial Metals sectors are capped at 15% of their sector and excess weight is redistributed within the sector on a proportional basis. The weights of companies contained in the Alternatives, Precious Metals and Forest Product sectors are capped at 25% of their sector and excess weight is redistributed within the sector on a proportional basis.
- vi) Company weights within the sector are then modified by a factor representing the sector weight.
- vii) The combined weight of all stocks contained in the USXL with weights in excess of 4.5% shall be capped at 40% of the total weight of the USXL and the excess weight shall be redistributed across all other constituents in the USXL in proportion to their respective weights in the USXL.

## **X. Further Index Adjustments**

Based on the completion of the foregoing methodology, a further review of the Family, excluding the Composite, will be undertaken to assure that:

- i) The market capitalizations of the index constituents representing at least 90% of the aggregate weight of the index each have a market capitalization in excess of USD 100 million, or the local currency equivalent, on the quarterly announcement date;

- ii) The market capitalizations of the index constituents representing at least 70% of the index each have a market capitalization in excess of USD 150 million, or the local currency equivalent, on the rebalancing date;
- iii) The trading volumes of the index constituents representing at least 90% of the index each have exceeded 250,000 shares per month for each of the preceding three months (The Index Committee reserves the right to include at its discretion such unqualified companies up to 10% of the index weight); and
- iv) The Average Daily Trading volumes of the index constituents representing at least 90% of the index each has equalled or exceeded USD 1 million per day during the three full calendar months immediately preceding, or any 90 consecutive calendar days ending within the 10 calendar days preceding, the rebalancing date.

## **XI. Rules for Reconstitutions, Rebalances, and Index Changes**

The Family is calculated by S-Network Global Indexes (“Calculation Agent”). The Calculation Agent is also responsible for index maintenance and price dissemination. The calculation, maintenance and dissemination rules are as follows:

**Index Changes.** Shares outstanding totals for component stocks are updated during the quarterly review.

**Index Reconstitutions.** The Index is reconstituted quarterly; during which the Index Committee submits to the Calculation Agent an updated Universe (as described above) including current Index constituents and recent IPOs. All candidates and current constituents are screened against the various selection criteria, and additions to and deletions from the Family indexes are determined. At each reconstitution, sector weights are adjusted to reflect the sector weights established by the Index Committee. Once the Committee has approved additions and deletions, the Index is reconstituted and rebalanced to reflect all changes.

**Additions and Deletions.** Additions to the Family indexes are made at the close of trading on the quarterly reconstitution/rebalancing dates (third Friday of the last month of each calendar quarter).

Deletions to the Index are made 1) at the close of trading on the quarterly reconstitution/rebalancing dates (third Friday of the last month of each calendar quarter) for companies that fail to meet the inclusion criteria and 2) at the close of trading two business days before the effective of the relevant corporate action, in the event a company is de-listed, files for bankruptcy, is acquired or merges with another company. In certain instances in which a corporate action is pending but has a high probability of occurring, the Index Committee may delete the company at its discretion upon three days notice.

In the event of a deletion from any of the Family indexes between reconstitution dates, except the USXL, no replacement stock will be named and the applicable index will be rebalanced proportionally to their weight in the index. In the event of a deletion from the USXL between reconstitution dates, the Index Committee will name a replacement stock

for the company deleted and the replacement stock will be added to the index. The replacement stocks, along with other components within the replacement stock's sector are to be rebalanced.

## **XII. Roles of Parties in the Quarterly Reconstitutions.**

- i) The Committee, or its designee, will submit to the Calculation Agent a list of index constituents for possible inclusion in RVEI at the close of US markets on the Monday following the third Friday of the month prior to the rebalancing month.
- ii) The Calculation Agent will use the remaining criteria in V to statistically screen the list of index constituents to confirm their eligibility for the index based on closing data and values as of last trading date of the second month of each calendar quarter.
- iii) On the first Friday of the rebalancing month, the Calculation Agent shall provide the Committee, or its designee, with a list of constituents for the RVEI.
- iv) The Committee shall approve or reject the changes and notify the calculation agent of its decisions not later than the Wednesday following the first Friday of the rebalancing month.
- v) Not later than the Wednesday following the first Friday of the rebalancing month, the Index Committee or its designee will issue a press release announcing additions and deletions to RVEI. The press release will be posted on the RVEI web site. (Announcement date.)
- vi) The Calculation Agent will provide final share weights to the Committee or its designee on the second Friday of the rebalancing month. Weights will be based on prices, shares and free float as of the close of trading on the preceding Wednesday, or the Wednesday prior to the second Friday of the rebalancing month.
- vii) The RVEI Index Committee or its designee will approve the final share weights prior to the close of US markets on the second Friday. Share weights will be disseminated to all licensees immediately following the Index Committee or its designee's approval.
- viii) The Calculation Agent will distribute final share weights to all approved parties via email and FTP after the close of US markets on the second Friday.
- ix) The effective date of the rebalancing will be the third Friday of the rebalancing month. The Calculation Agent will post all final rebalancing data and information on its FTP server on the second Friday of the rebalancing month barring the Index Committee Approval.
- x) RVEI will post all rebalancing data on its website prior to the open on the next business day following the rebalancing date.

### XIII. Calculation of Index Values

- i) The Calculation Agent will calculate index values using price data on each reported trade it receives on each component security.
- ii) The Calculation Agent will distribute index values to vendors at set 15-second intervals.
- iii) The index calculations will start at 18:00 (EST - US) for the next trading day (opening price). At that time, the indexes will begin changing as new prices or exchange rates are processed.
- iv) Index calculation will cease each trading day at 17:00 (EST-US) and official summaries will be disseminated between 17:00 (EST-US) and 19:00 (EST-US) (closing price).
- v) Each week, the Indexes will be calculated starting Sunday night at 18:00 through Friday night at 17:00.
- vi) If, during periods when the indexes are calculated, one or more markets are closed, the index calculation will continue using the last closing price, adjusted for latest fx rates, for those stocks that trade on the closed exchange(s).
- vii) Stocks denominated in foreign currencies will be converted to USD with each reported price using exchange rates derived from Thomson Reuters. Official closing prices for the Indexes will be calculated using the Thomson Reuters FX Rates (4:00 PM London Time snapshots).
- viii) The indexes will also be calculated and disseminated in USD and EUR using Luxembourg Dividend Tax Rates to calculate net total return.

### XIV. Dissemination

Index values will be disseminated in US dollars via Chicago Mercantile Exchange using the following tickers:

<b>Index</b>	<b>Ticker</b>
The <i>VanEck™ Natural Resources Index</i> <sup>SM</sup>	RVEC
The <i>S-Network Natural Resources Index</i> <sup>SM</sup>	RVEI
The <i>S-Network Natural Resources US Extra Liquid Index</i> <sup>SM</sup>	RVEXL
The <i>S-Network Natural Resources Energy Index</i> <sup>SM</sup>	RVEE
The <i>S-Network Natural Resources Agricultural Index</i> <sup>SM</sup>	RVEA
The <i>S-Network Natural Resources Metals Index</i> <sup>SM</sup>	RVEM

Index values will be disseminated in EUR via the Chicago Mercantile Exchange using the following tickers:

<u>Index</u>	<u>Ticker</u>
The VanEck™ Natural Resources Index <sup>SM</sup>	RVEIE
The S-Network Natural Resources Composite Index <sup>SM</sup>	RVECE
The S-Network Natural Resources US Extra Liquid Index <sup>SM</sup>	RVEXLE
The S-Network Natural Resources Energy Index <sup>SM</sup>	RVEEE
The S-Network Resources Agricultural Index <sup>SM</sup>	RVEAE
The S-Network Resources Metals Index <sup>SM</sup>	RVEME

## XV. Ongoing Maintenance

- i) In addition to the scheduled quarterly reviews, the Family is reviewed on an ongoing basis. Changes in index composition and related weight adjustments are necessary whenever there are extraordinary events such as delisting, bankruptcy, mergers or takeovers involving index components. In these cases, each event will be taken into account as soon as it is effective. **A rebalance of an index affected by these events is at the discretion of the Index Committee or its designee in the event a significant component is affected by any of the above corporate actions.** Whenever possible, the changes in the index's components will be announced at least two business days prior to their implementation date.
- ii) Changes of Eligible Securities. In the event that a component no longer meets the eligibility requirements described in Section V herein, it will be removed from the index, effective on the date of the next quarterly rebalancing.
- iii) Changes of Industry Classification. Companies are eligible for inclusion in the Composite based on the revenues received from its applicable business segment. Mergers, takeovers, and spin-offs, as well as organic growth in a company's business segments, may cause a company to lose its eligibility. In such a circumstance, the company will be deleted from the index, effective on the date of the next quarterly rebalancing. A company's classification may also require an immediate change as the result of a special event such as a merger, takeover or spin-off. Such determination shall be made by the Index Committee and the company shall be removed from the index on the effective date of the corporate action.
- iv) Splits and Spin-offs. If an index constituent splits or spins off a portion of its business to form one or more new companies, all of the companies involved in the spin-off will be immediately included in the Family, if they would otherwise qualify for membership.
- v) Mergers. If two index constituents merge, their component positions will be replaced by the surviving company immediately. The Calculation Agent will adjust the float-adjusted shares outstanding for the surviving company to reflect the changes in both its total shares and any float blocks, regardless of the percentage changes in the survivor. If an index constituent merges with a non-component company, its component position will be replaced by the new company, if the new company meets all eligibility criteria described in Section

V herein, and sections VI, VII or VIII herein, as applicable. In the event of mergers of equals, the combined trading history of the predecessor companies shall be used for evaluation.

- vi) Takeovers. If an index component is taken over by another component company, 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 company, it will be replaced by the acquiring company immediately, if the acquiring company meets all the eligibility criteria described in Section V herein, and in sections VI, VII or VIII herein, as applicable.
- vii) Share Offerings, Tenders and Purchases. All Share Offerings, Tenders and Purchases that result in an increase of shares will be held constant and will be implemented at the quarterly review.
- viii) Removal of Companies Due to Delisting, Bankruptcy or Extreme Financial Distress. If an index constituent is de-listed by its primary market, or is in bankruptcy proceedings, it will be removed from the index.

\* If an index component is de-listed by its primary market due to failure to meet financial or regulatory requirements, it will be removed from the index.

\* If an index component enters bankruptcy proceedings, it will be removed from the index and will remain ineligible for re-inclusion until it has emerged from bankruptcy. However, the Committee may, following a review of the bankrupt company and the issues involved in the filing, decide to keep the company in the index.

\* The Committee may, at its discretion, remove a company it has determined to be in extreme financial distress from the Family, if the Committee deems the removal necessary to protect the integrity of the index and the interests of investors in products linked to that index.

- ix) Pricing of Stocks in Extreme Financial Distress for Index Maintenance.

\* When a stock is suspended from trading due to financial distress and subsequently de-listed by its primary market prior to resumption of trading, the Calculation Agent will use the best-available alternate pricing source to determine the value at which the company should be removed from the index.

\* If the stock's primary market price is no longer available due to its suspension or de-listing, a current price from another exchange, such as a regional or electronic marketplace, may be used. In the absence of those prices in the case of U.S. securities, OTC Bulletin Board, OTC Equity (non-OTCBB stocks), and Pink Sheet traded prices could be applied in that order.

\* If neither a traded price nor a bid/asked range is available, the Committee will evaluate the status of the suspended stock. The Committee may consult with managers of portfolios linked to the Index in which the stock is a



constituent in determining the value of the stock. If the Committee concludes that the security has become worthless or is likely to remain too illiquid to be traded, it will be removed from the index at .01 local currency of the stock.

## **XVI. Float Adjustment**

All stock issues in the index are assigned a float factor, ranging from 0 and 1, which accounts for publicly available and freely traded shares of the company. Float Factors will be determined at the quarterly rebalance and will be held constant until the following rebalance.

Three types of shareholders whose holdings are considered to be control blocks are subject to float adjustment:

1. Holdings by other publicly traded corporations, venture capital firms, private equity firms/strategic partners or leveraged buy-out groups;
2. Holdings by government entities, including all levels of government (restricted only to governments of domestic listing markets);
3. Holdings by current or former officers and directors of the company, founders of the company, or family trusts of officers, directors or founders. Secondly, holdings of trusts, foundations, pension funds, employee stock ownership plans or other investment vehicles associated with and controlled by the company.

The holdings within each group form a cumulative total. In cases where holdings in a group exceed 5% of the outstanding shares of a company, the holdings of that cumulative group will be excluded from the float-adjusted count of shares to be used in index calculations. To arrive at the 5% and over calculations, individual holdings below 5% will be ignored. Holdings under 5% will only be taken into account if they belong to clearly related shareholders such as family members or board members.

Additionally, statutory limits on foreign ownership are recognized and applied where necessary.

Float factors are sourced through Refinitiv. In the event Refinitiv does not provide float data on a specific index constituent, a recognized publicly available source is used.

The Index Committee may review float data on a periodic basis and may conduct its own review of individual float factors it deems inconsistent with other publicly available float calculations and, in certain instances, may adjust the float factor used.

## **XVII. Total Return Index Value**

Total Return values reflect dividends net of withholding taxes. See appendix B for schedule.

## **XVIII. Calculation and Adjustments**

## i) Input Data Sources

\* Real-time stock prices are provided by Reuters. The latest trading price is used for index calculation.

\* The number of shares is determined separately for each class of stock. 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.

ii) Index Formula. The indexes are calculated using a Laspeyres formula. This formula is used for the calculation of total return and price indexes. The only difference is that the divisor  $D_t$  is different for the two Indexes (return index and price index).

The index is computed as follows:

$$\text{Index}_t = \frac{\sum_{i=1}^n (p_{it} \times q_{it} \times r_{it} \times f_{it})}{C_t \times \sum_{i=1}^n (p_{i0} \times q_{i0} \times r_{i0} \times f_{i0})} \times \text{Base Index Value} = \frac{M_t}{B_t} \times \text{Base Index Value}$$

The above mentioned formula can be simplified as:  $\text{Index}_t = \frac{M_t}{D_t}$

Where:

$$D_t = \frac{B_t}{\text{base index value}} = \text{divisor at time (t)}$$

$n$  = the number of stocks in the index

$p_{i0}$  = the closing price of stock  $i$  at the base date

$q_{i0}$  = the number of shares of company  $i$  at the base date

$r_{i0}$  = the exchange rate from local currency to USD at the base date

$f_{i0}$  = the float factor of company  $i$  at the base date

$p_{it}$  = the price of stock  $i$  at time (t)

$q_{it}$  = the number of shares of company  $i$  at time (t)

$r_{it}$  = the exchange rate from local currency to USD at time (t)

$f_{it}$  = the float factor of company  $i$  at time (t)

$C_t$  = the adjustment factor for the base date market capitalization

$t$  = the time the index is computed



- $M_t$  = market capitalization of the index at time (t)  
 $B_t$  = adjusted base date market capitalization of the index at time (t)

Dividend payments are not taken into account in the price indexes, whereas dividend payments are reinvested in the index samples of the total return indexes.

- iii) Divisor Adjustments. Corporate actions affect the share capital of component stocks and therefore trigger increases or decreases in the index. To avoid distortion, the divisor of the index is adjusted accordingly.

\* Formulae for Divisor Adjustment. The following formulae will be used for divisor adjustments. (Note: No divisor adjustments are necessary for stock splits, since market capitalization does not change and the share number and share price are adjusted prior to the opening of trading on the split's ex-date.)

$$D_{t+1} = D_t \times \frac{\sum (P_{it} \times Q_{it} \times R_{it} \times f_{it}) \pm \Delta MC_{t+1}}{\sum (P_{it} \times Q_{it} \times R_{it} \times f_{it})}$$

Where:

- $D_t$  = divisor at time (t)  
 $D_{t+1}$  = divisor at time (t+1)  
 $P_{it}$  = stock price of company i at time (t)  
 $Q_{it}$  = number of shares of company i at time (t)  
 $R_{it}$  = the exchange rate from local currency to USD at time (t)  
 $f_{it}$  = the float factor of company i at time (t)  
 $\Delta MC_{t+1}$  = add new components' market capitalization and adjusted market capitalization (calculated with adjusted closing prices and shares effective at time t+1 and/or minus market capitalization of companies to be deleted (calculated with closing prices and shares at time t))

Note: 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.

\* Adjustments for Corporate Actions. An index divisor may decrease (▼) or increase (▲) or keep constant (■) when corporate actions occur for a component stock. Assuming shareholders receive "B" new shares for every "A" share held for the following corporate actions:

- ▼ A) CASH DIVIDEND (applied for return indexes only)  
adjusted price = closing price - dividend announced by the company
- ▼ B) SPECIAL CASH DIVIDEND (applied for price and return index)  
adjusted price = closing price - dividend announced by the company

■ C) SPLIT AND REVERSE SPLIT

adjusted price = closing price \* A / B new number of shares = old number of shares \* B / A

■ D) RIGHTS OFFERING

adjusted price = (closing price \* A + subscription price \* B) / (A + B) new number of shares = old number of shares \* (A + B) / A

■ E) STOCK DIVIDEND

adjusted price = closing price \* A / (A + B) new number of shares = old number of shares \* (A + B) / A

▼ F) STOCK DIVIDEND OF A DIFFERENT COMPANY SECURITY

adjusted price = (closing price \* A - price of the different company security \* B) / A

▼ G) 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

▼ H) REPURCHASE SHARES-SELF TENDER

adjusted price = [(price before tender \* old number of shares) - (tender price \* number of tendered shares)] / (old number of shares - number of tendered shares)

new number of shares = old number of shares - number of tendered shares

▼ I) SPIN-OFF

adjusted price = (closing price \* A - price of spun-off shares \* B) / A

▲ J) COMBINATION STOCK 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 stock 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 stock 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)]

▲ K) STOCK 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]

- iv) Computational Precision. Index values are rounded to two decimal places and divisors are rounded to integers. Any values derived by the index calculation engine from a corporate action used for the divisor adjustments and index computations are rounded to seven decimal places.

## **XIX. 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 for both ticker-plant and real-time index 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 real-time 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 Index. Corrections will be made for bad prices and incorrect or missing corporate actions as soon as possible after detection.
- ii) Since the Indexes are calculated on a real-time 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.

## **XX. APPENDIX REVIEW SCHEDULE**

### Shares Updates

Frequency: Quarterly

Effective date: The Monday after the 3rd Friday of that month

Advance notice: At least three business days

### Quarterly Review

Frequency: Quarterly

Effective date: The Monday after the 3rd Friday of that month

Advance notice: At least three business days

### News Notification

Frequency: As needed

Effective date: As announced

Advance notice: At least three business days whenever possible

\* Includes events such as de-listings, mergers, bankruptcies and other extraordinary events.

\* Based on available news.

**XXI. APPENDIX A: List of Approved Exchanges**

EXCHANGE	COUNTRY
ASE	AUSTRALIA
ASX	AUSTRALIA
Australian	AUSTRALIA
Vienna	AUSTRIA
EN Brussels	BELGIUM
Euron. Brussels	BELGIUM
Sao Paulo	BRAZIL
Toronto	CANADA
Sant. Comerc	CHILE
Sant. Elec	CHILE
SANTIAGO	CHILE
Hong Kong	CHINA
Shanghai (B-Shares only)	CHINA
Shenzen (B-Shares only)	CHINA
Shenzhen (B-Shares only)	CHINA
Singapore	CHINA
Prague	CZECH REPUBLIC
Prague-SPAD	CZECH REPUBLIC
Copenhagen	DENMARK
Reykjavik	DENMARK
Cairo	EGYPT
Egypt (EGX)	EGYPT, ARAB REP.
Tallin	ESTONIA
Tallinn	ESTONIA
Helsinki	FINLAND
EN Paris	FRANCE
Euronext Paris	FRANCE
Berlin	GERMANY
Dusseldorf	GERMANY
Frankfurt	GERMANY
Munich	GERMANY
Athens	GREECE
Hong Kong	Hong Kong
NASDAQ CM	HONG KONG
Budapest	HUNGARY
Indonesia	INDONESIA
Indonesia SE	INDONESIA
Dublin	IRELAND
Tel Aviv	ISRAEL
Brsaltaliana	ITALY
Milan	ITALY
Fukuoka	JAPAN
Jasdaq	JAPAN
Nagoya	JAPAN
Osaka	JAPAN

EXCHANGE	COUNTRY
Tokyo	JAPAN
KO	Korea, Rep.
Luxembourg	LUXEMBOURG
Bursa Malays	MALAYSIA
Bursa Malaysia	MALAYSIA
Kuala Lumpur	MALAYSIA
Malaysia ACE Mkt	MALAYSIA
Mexico	MEXICO
Mexico City	MEXICO
EN Amsterdam	NETHERLANDS
Euron. Amsterdam	NETHERLANDS
New Zealand	NEW ZEALAND
NZX	NEW ZEALAND
Oslo	NORWAY
Philippine SE	PHILIPPINES
Philippines	PHILIPPINES
Warsaw	POLAND
Warsaw Continuou	POLAND
EN Lisbon	PORTUGAL
Euronext Lisbon	PORTUGAL
Catalist	SINGAPORE
Johannesburg	SOUTH AFRICA
Lagos	SOUTH AFRICA
Korea	SOUTH KOREA
Korea SE	SOUTH KOREA
KOSDAQ	SOUTH KOREA
Continuous	SPAIN
Madrid	SPAIN
Madrid-SIBE	SPAIN
Nordic GM	SWEDEN
Stockholm	SWEDEN
SIX Swiss	SWITZERLAND
SIX Swiss Ex	SWITZERLAND
Taiwan	TAIWAN
Istanbul	TURKEY
London	UNITED KINGDOM
LONDON INTL	UNITED KINGDOM
London Plus Mkt	UNITED KINGDOM
Nasdaq	UNITED STATES
NASDAQ GM	UNITED STATES
NASDAQ GS	UNITED STATES
New York	UNITED STATES
NYSE Amex	UNITED STATES
NYSE ARCA	UNITED STATES