

# REFINITIV GLOBAL EQUITY INDICES

## Index Methodology

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# 1. INTRODUCTION

## 1.1 Refinitiv Indices

Serving more than 40,000 institutions in over 190 countries, Refinitiv provides information, insights and technology that drive innovation and performance in global financial markets. Our heritage of integrity enables our customers to make critical decisions with confidence while our best-in-class data and cutting-edge technologies enable greater opportunity.

We enable the financial community to trade smarter and faster, overcome regulatory challenges, and scale intelligently.

Refinitiv provides trusted and innovative indices and index-related services to the investment community. Whether one requires indices for benchmarking, or for the development of investment vehicles, Refinitiv offers a range of index solutions to satisfy the requirements.

## 1.2 Index Family

The Refinitiv Global Equity Indices cover 51 countries and 30 regions. The indices are free float adjusted; market capitalization weighted and are designed to serve as broad market benchmarks to track the performance of liquid equities worldwide. Each index is available in Price Return and Total Return variants. Daily history is available from April 1999.

The indices are designed to serve as liquid, broad-based and comprehensive tools for investment professionals and analysts to benchmark and invest in common stock on a local, regional or global basis. The vast majority of indices in the series are designed to be as broad as possible and are not capped at a maximum number of constituents. They instead comprise 99.50 of the market capitalization of the liquid securities in a market.

There are however some indices in the series which either involve a set number of constituents such as the Refinitiv Top 50 series, the Refinitiv Europe 500 index and Refinitiv United States 500 or represent a variety of sectors in one index such as Refinitiv Infrastructure Indices. Refinitiv will continue to add such indices to the Global Equity Index Series from time to time, with any significant additions detailed in this document in Appendix 1.

## 1.3 Index Types

The Refinitiv Country, Regional and Sector Equity Indices are float adjusted and market capitalization weighted where each stock's weight in the index is proportional to its float-adjusted market value. The indices have price return and total return variants available.

#### **1.4 Constituent Universe**

- Liquid equities from 51 countries
- Indices are free float adjusted market cap weighted
- List of countries and exchanges available in the Appendix II.
- The details of the list for Equity Indices for Country and Regions is available [here](#)

In the sections below, we will detail the country level market capitalization methodology and sector indices methodology. Regional indices are rollups of the country indices.

#### **1.5 Intended Readership**

This document supports data use by Refinitiv Indices clients. Clients receive the data as part of their desktop license or may be licensed to use Refinitiv Indices in a separate licensing agreement.

#### **1.6 Document Publication**

This document is available on the Refinitiv website and on request.

## 2. CONSTRUCTION METHODOLOGY

Refinitiv market capitalization weighted (market cap) equity indices are free float. They are calculated using standard industry compilation and pricing methods in combination with a volume-based liquidity filter. Eligible securities are those common stocks for which the data requirements are met and that have passed the liquidity test:

This section describes the underlying Refinitiv data and methodology used to construct Refinitiv Indices.

### 2.1 Data

The process of constructing the indices begins with identifying all eligible securities. All listed common stocks except equity closed funds, equity derivatives, exchange traded funds, some units, investment trusts and Limited Partnerships/Master Limited Partnerships<sup>1</sup> are eligible for inclusion in the Equity Universe. Real Estate Investment Trusts (REITs), Preference shares<sup>2</sup>, Depository Receipts<sup>3</sup> and Units of operating companies<sup>4</sup> are also eligible for inclusion.

For individual securities, the following data points are collected on a daily basis: A variety of security IDs (RIC primarily and other IDs secondarily); both the adjusted and total return prices for the securities; shares outstanding for the primary share classes (if not available or known; the largest share class is used) and each security's float factor. All of these data points are collected at the security level of its primary market.

Other security level data that is collected includes three months of daily volume and price<sup>5</sup>, total and free float adjusted market cap<sup>6</sup> and the primary and subsidiary exchanges on which the security trades. Additional data is collected on an as-needed basis and is referenced in the sections below.

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<sup>1</sup> Limited Partnerships/Master Limited Partnerships have been removed from Refinitiv Equity Indices effective April 2016 rebalance.

<sup>2</sup> Preference shares that exhibit the characteristics of equity shares are eligible. As definition of preference shares varies from country to country, we analyze these securities on case to case basis.

<sup>3</sup> Depository Receipts trading locally are considered for inclusion if there is no common stock variant is available in the same market or if common stock variant is failing our liquidity criteria. No ADRs and GDRs are included.

<sup>4</sup> An operating company is defined as company that makes a good or provides a service that it then sells to customers or clients. An operating company contrasts with a holding company whose main function is to own other companies.

<sup>5</sup> To compute the Average Traded Value, Volume Weighted Average Price (VWAP) is considered and if VWAP is not available, then close price is considered.

<sup>6</sup> The data like daily volume, close price, total and free float and total market cap is collected from the market/exchange where the security has the primary listing. To know more about how a primary listing of a security is selected, please refer Appendix IV.

For each country, data is collected for securities headquartered in that country as well as securities headquartered elsewhere but traded on the local exchange(s).

The data is then reviewed by the Refinitiv Indices team to ensure the quality of the data used in the index construction. In addition, content user acceptance tests (UATs) are performed during the index construction process to further verify the quality of the data.

## **2.2 Liquidity**

Once the securities for an individual country are identified, (i.e. sufficient price history is available as well as shares outstanding, IDs, etc), the liquidity test is performed on each security. The purpose of this test is to make sure that the necessary liquidity is present for any security included in any Refinitiv index.

Refinitiv Indices' liquidity methodology is a four-tier approach that includes an Average Traded Value Approach along with minimum size, cumulative market capitalization and trading frequency. The comprehensive four tier approach ensures that all of the liquid securities in a market are covered, leaving only illiquid, infrequently traded and micro cap securities.

The Liquidity filter is objective in nature, rule based, and transparent. It can be replicated easily and is closely aligned with market conventions. It is simple, easy to understand and fully compliant with recent regulatory guidelines.

The liquidity methodology encompasses four types of filters, based on the following data sets:

- Free Float Adjusted Market Cap Filter: The objective is to remove micro caps.
- Average Daily Traded Value based on Volume and Value Weighted Average Price (VWAP) for the most recent period of 60 trading days: The objective of this filter is to remove companies that trade significantly less value than their peers, and are therefore less liquid.
- Daily trading frequency based on most recent period of 60 trading days: The objective is to remove the securities that trade large volumes or block trades only occasionally, while not-trading during a large portion of the review window.
- Minimum thresholds for both full market capitalization and free float adjusted market capitalization: It aims to improve index liquidity by removing companies that are below the minimum size.

In order to qualify for index constituency, candidate securities will need to pass ALL of the filters independently. This ensures that only active, liquid and established securities are included as index constituents.

The below section describes each filter in detail:

## Filter 1

### Free float adjusted market cap – Select Top 99.5%

All candidates need to pass a filter based on free float adjusted market capitalization. The first step is to rank all candidate securities by free float adjusted market capitalization, then calculate the cumulative market capitalization and then select all securities up to the cut-off percentage. The cut off percentage is 99.5% for all countries.

## Filter 2

### Average Daily Traded Value – Select Top 99.5%

Like in filter 1, candidates are ranked according to daily average traded value, in order to later calculate cumulative amounts. As a final step, all securities up to the cut-off percentage are selected. The cut off percentage is 99.5% for all countries.

In order to calculate the simple average daily traded value for a period of 60 trading days, the following inputs will be required:

- Daily Value Weighted Average Price (VWAP) or Close Price if VWAP is not available
- Daily Volume

And then Daily Traded Value and its average is computed:

Daily Traded Value = No of shares traded during the day \* VWAP of security

Average Daily Traded Value =  $\sum$  Daily Traded Value/60

## Filter 3

### Trading Frequency

All candidates need to pass minimum trading frequency in order to become index constituents. Trading frequency represents the percentage of days that the security traded when compared with number of trading days in an exchange:

Trading Frequency = Number of days that the security traded in the last 60 trading days/60

Following are the trade frequency thresholds for different markets:

Country membership*	Thresholds
Developed Markets	90%
Emerging Markets	80%
Frontier Markets	50%

\* For countries and their market classification, please refer Appendix III. Please note that as of now stated country classification is used in determining the trade frequency threshold for countries of Refinitiv Equity Indices only.

#### **Filter 4**

##### **Minimum size**

Candidates need to fulfill two conditions in order to pass this filter:

- Constituents need to have at least \$150mn total market cap
- Constituents need to have at least \$75mn free float adjusted market cap

Companies are reviewed only when the rebalance takes place. After the rebalance companies are allowed to oscillate below the minimum size threshold (due to price movements).



### 3. CALCULATION METHODOLOGY

The Refinitiv Global Equity Indices use divisor driven methodology. The value of the Index equals the aggregate market value of all index securities<sup>7</sup> divided by the divisor of the Index. The divisor is an arbitrary number chosen at the inception of the index to fix the starting value of index (say, at 100). The divisor serves the purpose of scaling such aggregate value to a lower magnitude which is more desirable for reporting purposes. In the event of any corporate action affecting the market value of the index, the divisor is adjusted to offset the change in the market value of the index so that the index value do not jump up or down drastically. All Refinitiv Global Equity Indices have a base value of 100 at the inception.

#### 3.1 Calculation Process

- Refinitiv uses a divisor driven calculation to reach the levels of each Refinitiv Index
- The Price Return calculation is based on the overall free float market capitalization of the constituents (price \* free float adjusted shares). In this construction, the sum of the market capitalizations of all the stocks on day t is divided by the index divisor of day t-1 to arrive to the index level for day t. The pricing calculations for regional indices are essentially the same; the only difference is that, when multiple currencies are involved, prices are converted to a single currency such as USD.
- The Total Return calculation accounts for any gross dividend payment that takes place. When a company issues a dividend, the price of the equity drops in the exact amount of the per share dividend amount. Leaving aside subsequent market movements of the equity price, the impact of a constituent equity dividend upon an index is a drop in the price of the index. Refinitiv adjusts to this event by adding back the dividend that was paid, resulting in an index calculation where the numerator includes the sum of dividend amount and the market cap.
- Country indices are calculated in Local currency. Regional indices are always calculated in USD and other currencies as well when required.
- The Pricing used in the index calculations is sourced from the exchanges directly (via IDN) and currency conversions are made using WM Rates.
- The frequency of the calculation is 15 seconds for the Price Return indices and 60 seconds for the Total Return indices.

The indices have two versions i.e. Price Return and Total Return. The calculation methodology for both is as follows:

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<sup>7</sup>Aggregated market value = total of number of shares of each of the index securities multiplied by each such security's close price.

### 3.2 Price Return

A price return index is calculated without considering the cash dividends on Index Securities. With respect to the mathematical manipulations, the computation is:

$$\mathbf{Index\ Price}_t = \frac{\sum_{i=1}^n p_{i,t} \times q_{i,t} \times r_{i,t}}{\mathbf{Divisor}_t}$$

where:

$p_{i,t}$  = price of equity  $i = 1, 2, \dots, n$ , at time  $t = 0, 1, 2, \dots, T$

$n$  = the number of equities in the index

$q_{i,t}$  = float adjusted shares outstanding for equity  $i$  at time  $t$

$$r_{i,t} = \begin{cases} 1, & \text{if a country index or} \\ \text{exchange rate from local currency to index currency at time } (t), & \text{if a regional index} \end{cases}$$

The pricing calculations for regional indices are essentially the same; the only difference is that, when multiple currencies are involved, prices are converted to a single currency i.e. index currency. In such cases, when currency conversions have been applied, the daily index price change will also reflect the daily change(s) in the exchange rates(s). Consequently, index values may change based on the common currency in which they are calculated, i.e., calculating an index value for Hungary in U.S. Dollars will likely not produce the same value as calculating the same index value in Hungarian Forints, since the index would also reflect the change in HUF->USD exchange rates.

### 3.3 Total Return

The total return is a quantity which adjusts the price for issuance of dividends. When a company issues a dividend, the price of the equity drops in the exact amount of the per share dividend amount. Leaving aside subsequent market movements of the equity price, the impact of a constituent equity dividend upon an index is a drop in the price of the index. A companion index which is based on the total return adjusts the price-only index for the issuance of dividends by its constituents. The total return index is computed as follows:

$$\mathbf{Index\ Price}_t = \frac{\sum_{i=1}^n (p_{i,t} \times q_{i,t} \times r_{i,t}) + (\mathbf{Div}_{i,t} \times q_{i,t} \times r_{i,t})}{\mathbf{Divisor}_t}$$

Where:

$p_{i,t}$  = price of equity  $i = 1, 2, \dots, n$ , at time  $t = 0, 1, 2, \dots, T$

$n$  = the number of equities in the index

$q_{i,t}$  = float adjusted shares outstanding for equity  $i$  at time  $t$

$$r_{i,t} = \begin{cases} 1, & \text{if a country index or} \\ \text{exchange rate from local currency to index currency at time } (t), & \text{if a regional index} \end{cases}$$

$Div_{i,t}$  = per share dividend on ex-date

All quantities in the equation above are end-of-day quantities. The numerator is computed as per the ex-date for any dividends. The divisor is also adjusted for total return indices on the day following the dividend ex-date. This is done to ensure that the index doesn't fall back down to previous levels (prior to dividend ex-date). This adjustment is done by calculating an adjusted market cap for the total return index immediately after dividend ex-date. The adjusted market cap is the price only market cap as on the dividend ex-date (i.e. excluding index dividend). Once this is divided by the total return index value as on dividend ex-date, we get an adjusted divisor which is used for calculations from the next day onwards.

The set-up of the total return index, including initial value, constituents and weights, is identical to the price return indices.

## 4. SECTOR INDICES

Refinitiv Sector Indices are subsets of the global, regional, and country indices. Every stock included in the Refinitiv Broad Market Index Universe is considered for inclusion in a sector index. Each constituent will have a sector code, as per the Refinitiv Business Classification (TRBC) methodology, TRBC codes are then used to group securities into sectors and sector indices will be produced if enough constituents are available for the index to be created (“minimum constituent rule”). The constituents’ weights of each sector index will be recalculated according to the sector market capitalizations...

The TRBC schema includes 5 layers of groups: 10 economic sectors, 28 business sectors, 54 industry groups 136 industries and 837 activities. For Refinitiv Business Classification Methodology, please refer [here](#)

The Refinitiv sector suite includes 4 layers of indices with different levels of granularity, starting from broad economic sectors to narrower 4<sup>th</sup> level industries. Refinitiv has over 5,000 global/regional/country sector indices each of which is available in a price and total return variant.

### 4.1 Sector Indices for Countries

The minimum threshold number of constituents required at the point of index creation is as follows:

- Economic sector: 10
- Business sector: 7
- Industry group: 5
- Industry: 5

Sector indices will continue to be published if they have at least 3 constituents. When a sector index drops to 2 or fewer constituents, the sector index is no longer published.

If a sector index meets the minimum number of constituents’ requirement, then drops below the minimum and then meets the requirement again, the index will show a flat period without updates from the point the minimum number of constituent rule was broken until calculation of the index is reactivated.

In some cases, indices are duplicated because there is only a single child sector of a given parent sector. In these cases, the child sector is published, the parent sector is not. The exception to this rule is if the duplication occurs at the first and second level. Level 1 sector indices are always published.

### 4.2 Sector Indices for Regions

The approach for regional sector indices is similar to the one used for country sector indices, but in this case the starting point will be the parent Refinitiv Regional Index. This approach is used to ensure that even if a certain security is not included in the country sector index (or if the country sector index doesn’t exist), it will still be considered for the regional inclusion.

Example: There may not be enough telecom companies in France to create a country telecom sector; however we will include the French telecom companies in the European telecom regional sector.

## 5. MAINTENANCE

### 5.1 Daily Index Maintenance

Refinitiv Global Equity Indices are maintained on a daily basis by a dedicated support team. This team is in direct collaboration with the Refinitiv Data Operations Global Corporate Actions teams, and is responsible for identifying all corporate action events that affect the capital structure of a constituent in the index including stock splits, delistings, and symbol changes and ensure these changes are implemented into the applicable index. The team also monitors divisor movements and performs constituent pricing comparisons between independent constituent price sources to ensure the accuracy of the index return values. The corporate actions methodology used by Refinitiv Global Equity Indices is available on our website and can be accessed [here](#).

### 5.2 Index Rebalance

The indices are rebalanced on a semi-annual basis, and new constituent lists are effective on the first Monday of April and October. The rebalance is the major source of additions and deletions to Refinitiv Indices.

The rebalancing process starts with all eligible common stock with the necessary data. The liquidity test along with the following business rules is applied to this set of stocks and those stocks that pass this test are now eligible for inclusion in the index. More details on business rules are available in Appendix IV.

- Minimum Free Float Requirement: The minimum free float requirement for constituents is 10%, whereas new entrants to the indices must have a minimum of 15% free float.
- The 20% cap rule: When one or more stock(s) is (are) a significant part of the market cap and is (are) pushing out stocks that belong to the index, Refinitiv screens all indices for stocks that comprise/make up more than 20% of the total local market capitalization (market cap). Refinitiv follows the iterative process of capping and caps those stocks at 20% and re-computes market cap coverage.
- All the domestic stocks trading on licensed exchanges are considered even if they are trading in foreign currency.
- Each security/share class will be classified in only one country. Any exceptions to this rule will be mentioned in the document. At present, there are two exception to this rule; CRH PLC and HSBC Holding PLC. CRH PLC is a constituent in Ireland as well as in UK. At regional level, CRH trading in Ireland is a constituent in all European regional and sector indices. HSBC is a constituent in UK and in Hong Kong and flows down to respective regional and sector indices.
- Historically low constituent numbers - This is related to indices that "consistently" (to be defined by country) have less than the requisite number of constituents. In this situation, the Index Action Committee reviews each potential index that is deficient and determines whether it should continue as an index.
- Regional indices are built by rolling up the country indices and the number of shares of each

constituent will be the same in both the country and regional index.

- The TRBC of constituents forming a part of Refinitiv Global Equity Indices will be reviewed on a quarterly basis. During the quarterly review process, the securities that need a change in TRBC driven by a corporate action or based on client request will be reviewed by the Index Action Committee supervising. Refinitiv Indices and the TRBC of such securities will be changed if there is a need to change the 1st level TRBC code causing a change to the subsequent 3 levels of TRBC. Any corporate action or client request requiring a change to the 2nd, 3rd and 4th level TRBC codes will however be reviewed during the bi-annual Refinitiv Global Equity Indices Rebalance in April and October<sup>8</sup>.
- Sector indices are built using the Refinitiv Business Classification (TRBC) methodology and sector indices will be produced if enough constituents are available for the index to be created, as described in the previous section. The creation of sector indices is subject to the “minimum constituent rule” which means that Refinitiv will only produce a sector index if the minimum constituents rule is complied with.
- At each rebalance the internal Index Action Committee (IAC) reviews the preliminary list of constituents to ensure that the indices have the attributes they claim to possess. The IAC will review the results of the liquidity filter and may propose overrides to the list to prevent any eventual coverage miss of critical companies. The IAC will also review recent IPO’s and Spin-off to decide if the securities in question are relevant enough to qualify for a fast track inclusion in the index.
- The rebalance results are shared with clients two weeks in advance of the rebalance effective date. The data notification includes companies that are being added and dropped to the universe of constituents, as well as indices that are being created, resumed or discontinued.

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<sup>8</sup> The rule about TRBC review has been modified from January 2016. Earlier TRBC codes of Indices’ constituents were updated only at the time of rebalance and were not allowed to change between rebalances.

## **6. Quality Control**

### **6.1 Quality Control**

Refinitiv has quality control procedures in place to monitor any prices, whether they are obtained from a regulated exchange or other market, prior to calculation of indices as well as prior to publication.

### **6.2 Re-Statement Policy**

A retrospective recalculation will only be made when a manifest and material error has been identified. Any retrospective recalculation will be notified to users via the alert system on Refinitiv Eikon.

### **6.3 Insufficient Data and Market Disruptions**

Refinitiv endeavors to develop and publish indices only where Refinitiv has a high level of confidence of long-term availability and access to the necessary data to administer the indices.

A “Market Emergency” is herein defined as any unscheduled and extraordinary condition in which liquidity in the markets used to source input data is interrupted (such as an event resulting in the unscheduled closing of futures exchanges). Should a Market Emergency occur, Refinitiv reserves the right to take such action with respect to the Refinitiv Global Equity Indices as it deems appropriate given the circumstances and after consulting with the Index Action Committee as appropriate.

Refinitiv will attempt to notify interested parties of any such actions as well in advance as is practicable. There is no assurance, however, that following a Market Emergency, the actions taken in response to such Market Emergency, or any other force majeure event, will not have an adverse effect on the value of the Refinitiv Equity Indices or the way they are calculated.



## 7. GOVERNANCE

### 7.1 Index Action Committee

There is an internal index action committee (IAC) at Refinitiv Indices. The IAC reviews country and region indices and rebalances. It is composed of the Refinitiv Equity Indices Benchmarks Manager, Refinitiv Commodity Indices Benchmarks Manager, Head of FX Benchmarks Research & Design, Development Manager and Head of Data Operations.

The main activity of this Index Action Committee is to insure that the attributes the index claims to possess – the necessary liquidity, capitalization assignment (large, mid or small-cap) or style considerations – are indeed present. These reviews take place at each rebalance and at each quarterly review. The Index Action Committee also deals with unusual corporate actions which are not handled by the pricing methodology or by the internal data management team that makes hand- adjustments to the index for items such as mergers and delistings. These reviews take place on a monthly or more frequent basis. Finally, as each index needs a minimum number of constituents in order for its price to be computed, the Index Committee decides if an index should be discontinued or possibly resurrected. This decision will normally be made during the rebalance period but could happen more often.

### 7.2 Benchmark Manager

The Benchmark Manager is a subject matter expert and is responsible for the integrity and quality of the Index which includes the following specific responsibilities:

- Interpreting the Index Methodology and implement the change procedure (if any)
- Reviewing feedback received from the Index stakeholders.
- Developing and implementing changes to the Index Methodology pursuant to feedback from Index stakeholders or in response to market events, subject to Section 8.2, Cessation of an Index.
- Managing interaction with Index stakeholders

### 7.3 Index Stakeholder Feedback

The Benchmark Manager may seek the views of market participants and other Index stakeholders on a bilateral basis from time to time or through one or more Index Advisory Groups. Issues on which the Benchmark Manager may consult Index stakeholders include conditions in the underlying markets that the Index represents, the representativeness of the input data used in the determination of the Index, the performance of the index with respect to the underlying markets that it represents, potential changes to the index calculation methodology, the weight calculation algorithm and exceptional market events.

#### **7.4 Feedback**

Your questions about the document, suggestions, and contributions are welcome. Please address enquiries to: [IndexManagers@refinitiv.com](mailto:IndexManagers@refinitiv.com).

## **8. METHODOLOGY REVIEWS AND CHANGE PROCEDURES**

### **8.1 Review of the Methodology**

The Refinitiv Global Equity Indices Methodology is reviewed once per year and, if required by market events, more frequently. Any potential changes to the Methodology are reviewed by the Index Action Committee.

### **8.2 Cessation of An Index**

Refinitiv aims not to stop the publication of any index that is used as a benchmark.

For those cases where Refinitiv does decide to stop the publication of an index, Refinitiv will look to find a suitable successor to its role as Administrator of the index. Should no successor be found, Refinitiv will conduct a consultation with any relevant stakeholders, the Index Action Committee and the Refinitiv Independent Oversight Committee. Refinitiv will publish a notice on its website about the possibility of stopping the publication of the Index and inviting anyone to provide feedback.

Such notice will be posted at least 6 months, where possible, prior to cessation of publication of the index, or on a best efforts basis for circumstances beyond the control of Refinitiv. After the consultation period, Refinitiv will publish externally the timeline for cessation. Internally, detailed operating procedures will be drafted to ensure a managed cessation.

## APPENDIX

### Appendix I:

#### Refinitiv Top 50 Indices

The Refinitiv Top 50 indices are market capitalization weighted indices and serve as a group of comprehensive large cap, standalone indices. The indices currently cover the largest 50 stocks in 16 of the global G-20 economies. The Refinitiv 50 index suite also includes Refinitiv Euro Zone 50 index, which has the largest 50 stocks from Euro Zone countries. The list of Refinitiv Top 50 Equity Indices is available here along with the list of Refinitiv Global Equity Indices.

The Top 50 indices are derived from respective Refinitiv Country indices. Once the constituents selection is completed for a Refinitiv Global Equity broad market index, all the constituents are arranged in descending order of market capitalization. The 50 largest stocks by market capitalization are then selected to create a Top 50 index.

Refinitiv Top 50 Indices are rebalanced bi-annually. In the case of constituent companies being reduced between rebalances due to corporate actions such as mergers, delisting or liquidation, no new constituents are added. Additions to the indices happen only during rebalance

Top 50 indices must have at least 50 constituents at the time of inception and after rebalance. If the constituent count drops to 40 during two consecutive rebalances, the Top 50 index is still published, after which Top 50 index is no longer published<sup>9</sup>. If a Top 50 index meets the threshold constituent requirement, then drops below the minimum required to continue calculation and subsequently meets the requirement again at a later date, it will not be published immediately. If the index continues to meet threshold constituents requirements for two consecutive rebalances, it will be published from the second rebalance onwards.

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<sup>9</sup> Refinitiv Russia Top 50 Index is an exception to this rule, Index Action Committee has decided to continue publishing the index even when the index has less than 40 constituents.

## **Refinitiv Standalone Indices**

### **Refinitiv Europe 500 Index**

The Refinitiv Europe 500 index is a market capitalization weighted standalone index, derived from Refinitiv Europe index and has both price and total return variants. The countries included are Euro Zone countries i.e. - Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal and Spain and few other European countries i.e. UK, Switzerland, Norway, Sweden and Denmark. Once the constituents selection is completed for stated countries, all the constituents are combined and are arranged in descending order of market capitalization. The 500 largest stocks by market capitalization are then selected to create a Europe 500 index. The index is rebalanced bi-annually with our Refinitiv Global Equity Indices. In the case of constituent companies being reduced between rebalances due to corporate actions such as mergers, delisting or liquidation, no new constituents are added. Additions to the indices happen only during rebalance.

### **Refinitiv United States 500 Index**

The Refinitiv United States 500 index is a market capitalization weighted standalone index, derived from Refinitiv United States index and has both price and total return variants. Once the constituents selection is completed for United States country index, all the constituents are arranged in descending order of market capitalization. The 500 largest stocks by market capitalization are then selected to create a United States 500 index. The index is rebalanced bi-annually with our Refinitiv Global Equity Indices. In the case of constituent companies being reduced between rebalances due to corporate actions such as mergers, delisting or liquidation, no new constituents are added. Additions to the indices happen only during rebalance.

### **Refinitiv Australia 200 Index**

The Refinitiv Australia 200 index is a market capitalization weighted standalone index, derived from Refinitiv Australia index and has both price and total return variants. Once the constituents selection is completed for Australia country index, all the constituents are arranged in descending order of market capitalization. The 200 largest stocks by market capitalization are then selected to create an Australia 200 index. The index is rebalanced bi-annually with our Refinitiv Global Equity Indices. In the case of constituent companies being reduced between rebalances due to corporate actions such as mergers, delisting or liquidation, no new constituents are added. Additions to the indices happen only during rebalance.

### **Refinitiv US Large and Mid-Cap Index**

The Refinitiv US Large and Mid-Cap Index is a market capitalization weighted index, derived from Refinitiv Global Equity index and has both price and total return variants. Once the constituents selection is completed for US country index, all the constituents are arranged in descending order of market capitalization and their market cap weight is computed. The top 85% by market cap weight are then selected to create a US Large and Mid Cap

index. The index is rebalanced bi-annually with Refinitiv Global Equity Indices.

### **Refinitiv Global Ex Frontier Large and Mid Cap Index**

The Refinitiv Global Ex Frontier Large and Mid Cap Index is a market capitalization weighted standalone index, derived from Refinitiv Global Equity index and has both price and total return variants. All the countries of Refinitiv Global Equity Index except Frontier market<sup>10</sup> are included in the index. Once the constituents selection is completed for stated countries, all the constituents are combined and are arranged in descending order of market capitalization and their market cap weight is computed. The top 85% by market cap weight are then selected to create a Global Ex Frontier Large and Mid Cap index. The index is rebalanced bi-annually with our Refinitiv Global Equity Indices.

### **Refinitiv Asia Ex Japan, Pakistan and Vietnam Large and Mid Cap Index**

The Refinitiv Asia Ex Japan, Pakistan and Vietnam Large and Mid Cap Index is a market capitalization weighted standalone index, derived from Refinitiv Asia Ex Japan index and has both price and total return variants. All the countries of Refinitiv Asia Ex Japan Index except Pakistan and Vietnam are included in the index. Once the constituents selection is completed for stated countries, all the constituents are combined and are arranged in descending order of market capitalization and their market cap weight is computed. The top 85% by market cap weight are then selected to create an Asia Ex Japan, Pakistan and Vietnam Large and Mid Cap index. The index is rebalanced bi-annually with our Refinitiv Global Equity Indices.

### **Refinitiv Global Infrastructure Indices**

Refinitiv Infrastructure Indices are an independent, transparent and rules-based suite of benchmarks for measuring the performance of listed global and regional infrastructure investments. The suite includes transport infrastructure, energy infrastructure, communications infrastructure and utility companies from developed and emerging markets.

The approach taken to equity identification relies on the five-level Refinitiv Business Classification (TRBC) categorization hierarchy<sup>11</sup> to classify candidates and using that classification as the sole basis for inclusion or exclusion.

The specific TRBC filters used in the identification of infrastructure equities are:

- Utilities:

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<sup>10</sup> Countries that are classified as frontier markets in Appendix III.

<sup>11</sup> <http://refinitiv.com/business-classification/>

- Utilities (TRBC Code - 59), but
- *Removing* any equities classified as Independent Power Producers (TRBC Code - 59 10 10 20).
- Infrastructure (Communications)
  - Satellite Systems & Accessories (TRBC Code - 57 10 20 10 16)
  - Telecommunications Network Infrastructure (TRBC Code - 58 10 10 10 14)
  - Satellite Service Operators (TRBC Code - 58 10 10 20 12)
- Infrastructure (Energy)
  - Oil & Gas Transportation Services (TRBC Code - 50 10 30 30)
- Infrastructure (Transport)
  - Airport Services – NEC (TRBC Code - 52 40 70 10 10)
  - Airport Operators (TRBC Code - 52 40 70 10 11)
  - Marine Port Services – NEC (TRBC Code - 52 40 70 20 10)
  - Port Operators (TRBC Code - 52 40 70 20 12)
  - Marine Cargo Handling Services (TRBC Code - 52 40 70 20 13)
  - Highway & Rail Tracks – NEC (TRBC Code - 52 40 70 30 10)
  - Highway Operators (TRBC Code - 52 40 70 30 11)
  - Railway Operators (TRBC Code - 52 40 70 30 12)

There are four indices in the Refinitiv Global Infrastructure index family, available in Price and Total Return variants:

- Refinitiv Global Balanced Infrastructure Index
- Refinitiv Global Developed Infrastructure Index
- Refinitiv Global Emerging Infrastructure Index
- Refinitiv Global Infrastructure Index

All four indices and their return variants are available in AUD, CHF, EUR, GBP, JPY and USD currencies.

Constituents for the family of Global Infrastructure indices are selected from a parent universe defined by the corresponding Refinitiv Indices. All of the indices, with the exception of Global Balanced Infrastructure Index, are free-float market capitalization weighted, with a weight cap on individual constituents applied at 10% during rebalance. Constituents with a free-float market capitalization below US\$500M are excluded.

The Global Balanced Infrastructure Index is intended to de-emphasize the Utilities portion of the portfolio, which typically makes up 70% or more of the market cap weight. The individual sectors are weighted by the following strategy:

- Utilities: 50%
- Infrastructure: 50%

Constituents within the sectors are free-float market capitalization weighted.

As described above, the Global Infrastructure indices are built using the constituent universe of the parent index, on the same rebalance schedule. Below are the steps to select the constituents:

- The constituents of the appropriate parent index (Global, Global Developed, or Global Emerging) for the current rebalance are retrieved.
- The TRBC-based Utilities and Infrastructure filter is applied.
- The free float market capitalization minimum threshold (US\$500M) is applied, and any equity below that threshold is discarded.
- Weighting is applied as follows:
  - For Global, Global Developed, and Global Emerging, the indices are free float market capitalization weighted. A 10% individual weight cap is applied.
  - For Global Balanced Infrastructure Index, the top 50 utilities and the top 50 infrastructure constituents, by market cap, are selected.
    - A 5% individual weight cap is applied.
    - Each of the sub-groups (utilities and infrastructure) is allocated 50% of the total weight. Equities are free-float market capitalization weighted within those sub-groups.
    - If there are fewer than 50 infrastructure equities available, all available infrastructure equities are selected, and additional utilities are included to bring the constituent count to 100.

### **Refinitiv Local Currency Indices**

Refinitiv Local Currency Indices are free float adjusted, market capitalization weighted indices. They are similar to any other Refinitiv Regional Index except in using the exchange rate i.e. the same exchange rate (previous day's FX) is used in the numerator and denominator for local currency, which means that there is no impact of currency change in the performance. The formula to calculate the daily change is:

$$\frac{\sum Price(t) * Shares(t) * FX(t-1)}{\sum Price(t-1) * Shares(t-1) * FX(t-1)}$$

By using the previous date (t-1) FX, the effect of currency fluctuations is removed.

There are four indices in the Refinitiv Local Currency index family, available in Total Return variants:

- Refinitiv Global Total Return Local Currency Index
- Refinitiv Asia Pacific Total Return Local Currency Index
- Refinitiv Europe Total Return Local Currency Index
- Refinitiv Americas Total Return Local Currency Index

All four indices are available in USD.



### **Refinitiv iX Western Euro Zone Small and Mid Cap Index**

Refinitiv iX Western Euro Zone Small and Mid Cap Index is the first index in the Refinitiv iX Index Series that has been introduced recently. The indices in the series have a different selection and weighting criteria to Refinitiv Global Equity Indices to suite to local requirement of a country/region included. However, the calculation methodology, treatment of corporate actions and rebalance schedule remains the same as Refinitiv Global Equity Indices.

Refinitiv iX Western Eurozone Mid and & Small Cap Index is a market capitalization weighted index and has been built using following criteria:

Securities from Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain are selected. Securities from East European countries and non-Euro zone countries are not included. Only Common stocks are included, other shares classes and preference shares are not included. Following filters are applied:

- Securities between Euro 500 million to 5 billion of unadjusted mkt cap and selected, and then
- Securities having more than Euro 500 million of Free Float adjusted mkt cap are selected.
- Average Traded Values of candidate securities is computed<sup>12</sup>. Then securities are sorted in descending order on the basis of average traded value and average trade value weights are computed and cumulated. Securities falling in top 99.5% of Average traded Value are selected.

Securities that pass all of above criteria become constituents. The selection methodology limits the number of components to around 300, so as to make the index tradable.

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<sup>12</sup> Methodology to compute Average Traded Value remains same as the one used in Refinitiv Equity Indices.

## Appendix II: Exchanges Used in Refinitiv Global Equity Indices

TR INDEX COUNTRY	EXCHANGE	TR INDEX COUNTRY	EXCHANGE
Argentina*	Buenos Aires SE (MERVAL)	Malaysia	Bursa Malaysia/Kuala Lumpur SE
Australia	Australian SE	Mexico	Bolsa Mexicana de Valores
Austria	Vienna SE	Morocco	Casablanca SE
Bahrain	Bahrain SE	Netherlands	Euronext Amsterdam
Belgium	Euronext Brussels	New Zealand	New Zealand SE
Brazil	Sao Paulo SE (BOVESPA)	Norway	Oslo SE
Canada	Toronto SE	Oman	Muscat Securities Market (OMAN)
Chile	Santiago SE	Pakistan	Karachi SE
China International (HK traded)	Hong Kong SE	Philippines	Philippines SE
Czech Republic	Prague SE	Poland	Warsaw SE
Denmark	Copenhagen SE	Portugal	Euronext Lisbon
Egypt	Cairo SE	Qatar	Doha/Qatar Exchange
Finland	Helsinki SE	Russia	MICEX
France	Euronext Paris	Singapore	Singapore SE
Germany	XETRA & Frankfurt	South Africa	Johannesburg SE
Greece	Athens SE	Saudi Arabia	Tadawul SE
Hong Kong Domestic	Hong Kong SE	Spain	Madrid SE/SIBE
Hungary	Budapest SE	Sweden	Stockholm SE
India	Bombay SE & National SE	Switzerland	Six Swiss SE
Indonesia	Indonesia SE/Jakarta SE	Taiwan	Taiwan SE
Ireland	Irish SE	Thailand	SE of Thailand
Israel	Tel Aviv SE	Turkey*	Istanbul SE
Italy	Milan SE	UAE	Abu Dhabi SE & Dubai Financial Market
Japan	JASDAQ SE & Tokyo SE	United Kingdom	London SE
Korea	Korea SE & KOSDAQ SE	United States	NASDAQ (L1&L2) & NYSE
Kuwait	Kuwait SE	Viet Nam	Ho Chi Minh City SE

\*Represents End of Day (EOD) Data

## Appendix III: Countries and their Market Classification

Market Classification		
Developed	Emerging	Frontier
Australia	Brazil	Argentina
Austria	Chile	Bahrain
Belgium	China Foreign Investors (Chinese shares traded in HK)	Kuwait
Canada	Czech Republic	Morocco
Denmark	Egypt	Oman
Finland	Hungary	Pakistan
France	India	Qatar
Germany	Indonesia	Vietnam
Greece	Malaysia	
Hong Kong domestic and HK All Shares)	Mexico	
Ireland	Philippines	
Israel	Poland	
Italy	Russian Federation	
Japan	South Africa	
Korea	Saudi Arabia	
Netherlands	Taiwan	
New Zealand	Thailand	
Norway	Turkey	
Portugal	UAE	
Singapore		
Spain		
Sweden		
Switzerland		
United Kingdom		
United States		

## Appendix IV: Business Rules

### Selecting candidates for a country level index

Refinitiv uses the country of incorporation, security's primary listing<sup>13</sup> and volume to determine the membership in a country index. In most cases, the country of incorporation is same as primary listing. There are instances where the country of incorporation is not where the security has the primary listing. In those cases Refinitiv uses the security's primary listing to determine membership in a particular country's domestic index.

As an example, Allot Communications is incorporated in the Israel, trades in Israel as well as in United States but Israel listing is a primary one where it trades most. Hence it is in Refinitiv Israel country index. Another example is International Consolidated Airlines Group, which is incorporated in Spain, trades in Spain and London but London listing is a primary listing where it has most of volume coming from. Hence we have it in Refinitiv United Kingdom index.

Here are the other rules to select candidates for a country level index:

- For rebalance purposes, start and end dates are determined when selecting equities.
- Prices reflected in the rebalance are based on trading days determined according to the prior year calendar
- Stocks considered suspended or dead are considered 'dead' as of the "last traded date.
- Only equities with a current status of "active" are included
- Equity end date status is determined as follows:
  - If the stock is currently suspended or dead and the "last traded date" is less than or equal to the end date for this rebalance, then the status on the end date is "dead".
  - If the stock is currently active then the status is "active".

### Selecting candidates for a regional or global index

- Candidates for regional and global indices include all constituents within the countries that comprise the index. All rules for country level indices apply to regional and global indices.
- A constituent may exist in more than one country index. Equities are considered equal if they possess the same ISIN:
  - If only one of the set of duplicates is the primary equity, we use that equity and exclude secondaries
  - If all duplicates are secondaries, one of the equities is randomly selected and the others are excluded

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<sup>13</sup> Primary listing is country of security's listing where it trades most.

### **Determining prices, shares, and FX rates for rebalancing for each equity in the list of candidates**

- Refinitiv supplies price, USD price, share count, free float percentage and free float adjusted share count for each trading date that falls within the range of the dates covered by the rebalance
- If USD price, or share count is not available, the value is considered zero
- If free float percentage is not available, the value is considered 50%. Free float adjusted share count is considered equal to share count

### **Finding prices, shares and FX rates for pricing**

- For daily pricing, data is supplied for each of the equities that are constituents on that day
- If an FX rate, price or share count is not available on a requested date, Refinitiv selects the next best date with available data
- The next best date for pricing is the first date, working backward from the requested date, for which there is non-zero pricing
- The next best date for share count is the first date, working backward from the requested date, for which there is non-zero share count
- The next best date for an FX rate is the first date, working backward from the requested date, for which there is a non-zero FX rate – the rate is used to convert equity price to USD
- If a dividend was paid on the requested date, it is included. The FX rate used for the dividend is the first date, going backward from the requested date, for which there is a non-zero FX rate. This FX rate is used to convert the dividend to USD

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