

FR Global Equity Indices – Index Methodology

v1.1

The FR Global Equity Indices are not, and are not intended to be, used by supervised entities in the European Union or the United Kingdom and accordingly, the European benchmark regulation* and the UK Benchmark Regulation# do not apply to the index. Consequently, supervised entities within the European Union and the United Kingdom are not permitted to use the index as a benchmark as set out in article 3(1)(7) of the European benchmark regulation.

For the avoidance of doubt, neither FTSE International Limited nor Refinitiv Benchmark Services (UK) Limited nor any other member of the London Stock Exchange Group plc group of companies, is the benchmark administrator (as defined in article 3(1)(6) of the European benchmark regulation) of the indices.

**Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds*

#The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019 (which amends the European benchmark regulation in the United Kingdom)



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1. Introduction

- 1.1 This document sets out the Ground Rules for the construction and maintenance of the FR Global Equity Indices.
- 1.2 The FR Global Equity Indices cover 53 countries and 31 regions. The indices are free float adjusted, market capitalisation 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.
- 1.3 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 99.5% of the market capitalisation of the liquid securities in a market.
- 1.4 There are, however, some indices in the series which either involve a set number of constituents, such as the FR Top 50 series, the FR Europe 500 index and FR United States 500, or represent a variety of sectors in one index, such as FR Infrastructure Indices.

2. FTSE Russell

- 2.1 As part of the ongoing work to simplify its brand, London Stock Exchange Group (LSEG) announced that Refinitiv Benchmarks and Indices were moving to FTSE Russell branding with effect from November 2023. As part of the rebranding, the Refinitiv Global Equity Indices were renamed as the FR Global Equity Indices.
- 2.2 FTSE Russell is a trading name of FTSE International Limited, Frank Russell Company, FTSE Global Debt Capital Markets Limited (and its subsidiaries FTSE Global Debt Capital Markets Inc. and FTSE Fixed Income Europe Limited), FTSE Fixed Income LLC, Refinitiv Benchmark Services (UK) Limited, Refinitiv Limited and Beyond Ratings S.A.S.
- 2.3 LSEG holds a unique position within the global financial market, operating connected businesses to serve customers across the financial markets value chain.
- 2.4 The FR Global Equity Indices are calculated by FTSE Russell and will be made available to customers as part of their desktop licence through the LSEG Data & Analytics Platforms or subject to a separate licence agreement.
- 2.5 Neither FTSE International Limited nor Refinitiv Benchmark Services (UK) Limited nor any other member of the London Stock Exchange Group plc group of companies, is the benchmark administrator¹ of the FR Global Equity Indices.

3. Constituent universe

- Liquid equities from 53 countries
- Indices are free float adjusted market cap weighted
- List of countries and exchanges available in the Appendix.

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

¹ As the term administrator is defined in the [IOSCO Principles for Financial Benchmarks](#) and [Regulation \(EU\) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds \(the European Benchmark Regulation\) and The Benchmarks \(Amendment and Transitional Provision\) \(EU Exit\) Regulations 2019](#) (the UK Benchmark Regulation).

4. Construction methodology

FR Global Equity Indices are market capitalisation weighted (market cap) and free float adjusted indices. 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 filter:

This section describes the underlying data and methodology used to construct FR Global Equity Indices.

4.1 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, certain type of units, investment trusts, and Limited Partnerships/Master Limited Partnerships², are eligible for inclusion in the Equity Universe. Real Estate Investment Trusts (REITs), Preference shares³, Depository Receipts⁴, and Units of operating companies⁵ 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 price⁶, total and free float adjusted market cap⁷, 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.

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 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.

4.2 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 filter is applied to ensure that the necessary liquidity is present for any security included in any FR index.

FR Global Equity Indices' liquidity methodology is a four-tier approach that includes an Average Traded Value Approach along with minimum size, cumulative market capitalisation, 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, rule based, and transparent.

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.

² Limited Partnerships/Master Limited Partnerships have been removed from FR Global Equity Indices, effective from April 2016 rebalance.

³ Preference shares that exhibit the characteristics of equity shares are eligible. As definition of preference shares varies from country to country, we analyse these securities on case by case basis.

⁴ Depository Receipts trading locally are considered for inclusion if there 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.

⁵ 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.

⁶ To compute the Average Traded Value, Volume Weighted Average Price (VWAP) is considered. If VWAP is not available, then close price is considered.

⁷ 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 to Appendix IV.

- 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 capitalisation and free float adjusted market capitalisation: It aims to improve index liquidity by removing companies that are below the minimum size.

In order to qualify for index membership, candidate securities will need to pass ALL 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 capitalisation. The first step is to rank all candidate securities by free float adjusted market capitalisation, then calculate the cumulative market capitalisation 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 of 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 Fr Global Equity Indices only.

Filter 4- Minimum size

Candidates need to fulfil 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).

5. Calculation methodology

The FR Global Equity Indices use divisor driven methodology. The value of the Index equals the aggregate market value of all index securities⁸ 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 does not jump up or down drastically. All FR Global Equity Indices have a base value of 100 at the inception.

5.1 Calculation process

- Indices use a divisor driven calculation to reach the levels of each Index.
- The Price Return calculation is based on the overall free float market capitalisation of the constituents (price * free float adjusted shares). In this construction, the sum of the market capitalisations 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. This is adjusted 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 calculation methodology for price return and total return indices is as follows:

5.2 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:

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

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

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

⁸ Aggregated market value = total of number of shares of each of the index securities multiplied by each such security's close price.

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.

5.3 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:

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

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.

6. Sector Indices

FR Sector Indices are subsets of the global, regional, and country indices. Every stock included in the FR Global Equity Index universe is considered for inclusion in a sector index. Each constituent will have a sector code, as per The Reference Data 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 capitalisations...

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

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

6.1 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 three constituents. When a sector index drops to two 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.

6.2 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 FR 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.

7. Index Maintenance and Rebalance

7.1 The securities which form the Index are re-weighted due to changes in the price of the underlying securities change.

The index is maintained on a daily basis by a dedicated support team. This team is in direct collaboration with the LSEG 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, delisting, and symbol changes and ensure these changes are implemented into the 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. Where a security in the Index is subject to a merger or acquisition activity or delisting, the security will be deleted from the Index as set out in the Corporate Action Methodology.

7.2 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 FR Indices. There are no additions to the Index outside of the rebalance process

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, all indices are screened for stocks that comprise/make up more than 20% of the total local market capitalisation (market cap). An iterative process of capping is

followed and the stocks with initial weight of more than 20% are capped at 20% and market cap is recomputed.

- 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 is only one exception to this rule; HSBC Holding PLC. 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 code of constituents forming a part of FR 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. FR Global Equity 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 FR Global Equity Indices Rebalance in April and October⁹.
- Sector indices are built using The Reference Data 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 a sector index is constructed only 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 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.

8. Quality control

8.1 Quality control procedures are in place to monitor any prices – whether they are obtained from a regulated exchange or another market – prior to calculation of indices, as well as prior to publication.

8.2 Error reporting

8.2.1 The Index Action Committee (see section “Governance” below) may determine if a retrospective recalculation is required.

8.2.2 A retrospective recalculation will only be made when there has been a material error. The feedback from the stakeholders may also be sought.

8.2.3 Any retrospective recalculation will be notified to users via the alert system on LSEG Eikon.

8.3 Insufficient data and market disruption

⁹ 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.

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- 8.3.1 The FR Global Equity Indices is based on equity prices published by the exchange (in the country of domicile) for each equity. The exchange is a regulated marketplace and a well-established supplier of equity price discovery.
- 8.3.2 In the event that certain data is not available in time to publish the FR Global Equity Indices as indicated in the methodology, or if the index cannot be published at all over one or more planned publication times, a new publication time will be communicated to subscribers and licensors of the index.
- 8.3.3 Should a period of market stress or a disruption affect the calculation of the index, FTSE Russell reserves the right to take any action with respect to the index it deems appropriate given the circumstances, subject to the index governance procedures (see section “Governance” below). FTSE Russell will first consider the effectiveness of the actions taken by each primary exchange in producing the equity prices used in the index calculation.
- 8.3.4 If additional action is required by FTSE Russell it will attempt to notify interested parties of any such action with as much notice as is practical. There is no assurance, however, that the actions taken by FTSE Russell in response to such a period of market stress or disruption will not have an adverse effect on the value of the index or the manner in which it is calculated.
- 8.4 Cessation of an index**
- 8.4.1 In the event that FTSE Russell determines that the calculation of the index should be ceased, a notice will be published via LSEG Eikon, an LSEG desktop product.

9. Governance

- 9.1 The FR Global Equity Indices is calculated and managed by FTSE Russell which makes all decisions regarding index calculations and changes to the index methodology.
- 9.2 Index team**
- 9.2.1 The Index team is responsible for the maintenance, calculation and distribution of the FR Global Equity Indices as set out in this methodology.
- 9.3 Index Action Committee**
- 9.3.1 The IAC is an internal group of subject matter experts (indices as well as asset classes) that provide advice related to methodology interpretation or changes.
- 9.4 Methodology review**
- 9.4.1 The FR Global Equity Indices methodology is reviewed once a year and, if required by market events, more frequently.
- 9.4.2 Any changes to the methodology are approved by the IAC and will be announced prior to implementation. All reasonable efforts will be made to provide at least one month’s notice of any such changes prior to their implementation.

Appendix I

FR Top 50 Indices

FR Top 50 indices are market capitalisation weighted indices and serve as a group of comprehensive large cap, standalone indices. The indices currently cover the largest 50 stocks in 15 of the global G-20 economies. The FR 50 index suite also includes FR Euro Zone 50 index, which has the largest 50 stocks from Euro Zone countries. The list of FR Top 50 Equity Indices is available [here](#), along with the list of FR Global Equity Indices.

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

FR 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. 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.

FR Standalone Indices

FR Europe 500 Index

The FR Europe 500 index is a market capitalisation weighted standalone index, derived from FR 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 capitalisation. The 500 largest stocks by market capitalisation are then selected to create a Europe 500 index. The index is rebalanced bi-annually with our FR 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.

FR United States 500 Index

The FR United States 500 index is a market capitalisation weighted standalone index, derived from FR 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 capitalisation. The 500 largest stocks by market capitalisation are then selected to create a United States 500 index. The index is rebalanced bi-annually with our FR 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.

FR Australia 200 Index

The FR Australia 200 index is a market capitalisation weighted standalone index, derived from FR 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 capitalisation. The 200 largest stocks by market capitalisation are then selected to create an Australia 200 index. The index is rebalanced bi-annually with our FR 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.

FR US Large and Mid-Cap Index

The FR US Large and Mid-Cap Index is a market capitalisation weighted index, derived from FR 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 capitalisation 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 FR Global Equity Indices.

FR Global Ex Frontier Large and Mid Cap Index

The FR Global Ex Frontier Large and Mid Cap Index is a market capitalisation weighted standalone index, derived from FR Global Equity index, and has both price and total return variants. All the countries of FR Global Equity Index, except Frontier market¹⁰, 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 capitalisation 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 FR Global Equity Indices.

FR Asia Ex Japan, Pakistan and Vietnam Large and Mid Cap Index

The FR Asia Ex Japan, Pakistan and Vietnam Large and Mid Cap Index is a market capitalisation weighted standalone index, derived from FR Asia Ex Japan index, and has both price and total return variants. All the countries of FR 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 capitalisation 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 FR Global Equity Indices.

FR Global Infrastructure Indices

FR 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 The Reference Data Business Classification (TRBC) categorisation hierarchy to classify candidates, and uses that classification as the sole basis for inclusion or exclusion.

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

- Utilities:
 - 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)

¹⁰ Countries that are classified as frontier markets in Appendix III.

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- 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 FR Global Infrastructure index family, available in Price and Total Return variants:

- FR Global Balanced Infrastructure Index
- FR Global Developed Infrastructure Index
- FR Global Emerging Infrastructure Index
- FR 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 FR Global Equity Indices. All the indices, with the exception of Global Balanced Infrastructure Index, are free-float market capitalisation weighted, with a weight cap on individual constituents applied at 10% during rebalance. Constituents with a free-float market capitalisation 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 capitalisation 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 capitalisation 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 capitalisation 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 capitalisation 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.

FR Local Currency Indices

FR Local Currency Indices are free float adjusted, market capitalisation weighted indices. They are similar to any other FR Regional Equity 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:

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

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

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

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

All four indices are available in USD.

FR iX Western Euro Zone Small and Mid Cap Index

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

FR iX Western Eurozone Mid and & Small Cap Index is a market capitalisation 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 computed¹¹. 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.

¹¹ Methodology to compute Average Traded Value remains same as the one used in FR Global Equity Indices.

Appendix II

Exchanges in FR Global Equity Indices

FR Global Equity Indices country	Exchange	FR Global Equity Indices 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	Singapore	Singapore SE
France	Euronext Paris	South Africa	Johannesburg SE
Germany	XETRA & Frankfurt	Saudi Arabia	Tadawul SE
Greece	Athens SE	Spain	Madrid SE/SIBE
Hong Kong Domestic	Hong Kong SE	Sweden	Stockholm SE
Hungary	Budapest SE	Switzerland	Six Swiss SE
India	Bombay SE & National SE	Taiwan	Taiwan SE
Indonesia	Indonesia SE/Jakarta SE	Thailand	SE of Thailand
Ireland	Irish SE	Turkey*	Istanbul SE
Israel	Tel Aviv SE	UAE	Abu Dhabi SE & Dubai Financial Market
Italy	Milan SE	United Kingdom	London SE
Japan	JASDAQ SE & Tokyo SE	United States	NASDAQ (L1&L2) & NYSE
Korea	Korea SE & KOSDAQ SE	Viet Nam	Ho Chi Minh City SE
Kuwait	Kuwait SE		

Appendix III

Countries in FR Global Equity Indices 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	South Africa	
Japan	Saudi Arabia	
Korea	Taiwan	
Netherlands	Thailand	
New Zealand	Turkey	
Norway	UAE	
Portugal		
Singapore		
Spain		
Sweden		
Switzerland		
United Kingdom		
United States		

Appendix IV

Business Rules applicable to FR Global Equity Indices

Selecting candidates for a country level index

FR Global Equity Indices use the country of incorporation, security's primary listing¹², 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, the indices use 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 FR 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 FR 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.

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

- LSEG product DataStream is used to retrieve 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, the team selects the next best date with available data.

¹² Primary listing is country of security's listing where it trades most.

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- 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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