



# Rothschild & Co

Risk Based Indices: Methodologies

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# 1. Introduction

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## 1.1 Index Objective and Highlights

The Rothschild & Co Risk-Based Indices (“indices” or “index”) are designed to provide a broad and liquid representation of large capitalization, low risk companies based on a proprietary score that combine volatility and correlation. Index constituents are weighted so that each contributes an equal risk contribution (“ERC”), whereby stocks receiving the lowest risk scores receive the highest index weights.

## 1.2 Family of Indices

The Rothschild & Co Risk-Based family of indices is composed of the following:

- **Rothschild & Co Risk-Based Canada Index** measures the performance of low risk, large capitalization companies in Canada
- **Rothschild & Co Risk-Based Europe Index** measures the performance of low risk, large capitalization companies in Europe
- **Rothschild & Co Risk-Based Global Developed Markets Index** measures the performance of low risk, large capitalization companies in Developed Markets
- **Rothschild & Co Risk Based International Index** measures the performance of low risk, large capitalization companies in Developed Markets excluding the United States and Canada
- **Rothschild & Co Risk-Based Japan Index** measures the performance of low risk, large capitalization companies in Japan
- **Rothschild & Co Risk-Based UK Index** measures the performance of low risk, large capitalization companies in the United Kingdom
- **Rothschild & Co Risk-Based US Index** measures the performance of low risk, large capitalization companies in the United States

## 2. Investment Equity Universe

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Constructing the Indices begins with selecting the equity universe for each index and is defined by:

- Identifying eligible equity securities
- Screening the eligible securities for inclusion in the Investable Equity Universe based on the appropriate country and stock exchange subject to investability screens

### 2.1 Eligible Securities

Eligible securities include all common stocks in the specific equity universe with comparable characteristics from financial markets that provide real-time and historical values.

Mutual funds, ETFs, equity derivatives, tracking stocks, limited partnerships, and investment trusts are not eligible for inclusion in the Investable Equity Universe.

### 2.2 Country Classification of Eligible Securities

The securities' country classification is based on the domicile of the primary exchange of the common stocks. For each country, the number of securities selected for the Investable Equity Universe is defined.

### 2.3 Investability Screens

In order to make the indices investable, screens are applied at the individual security level.

### 2.4 Liquidity

To be eligible for inclusion in the Investable Equity Universe, a security must have a minimum Average Daily Traded Value ("ADTV") of one (1) million USD measured over 3-months. The company's ADTV is based on the individual securities traded on the specific listing used for the index calculation.

In case of events in the market that negatively affect the aggregated liquidity and market capitalization of entire markets, the number of the stocks in the index is reduced to a number of components that meet the liquidity requirement.

### 2.5 Minimum Length of Trading Requirement

To be eligible for inclusion in the Investable Equity Universe a stock must have traded for at least twelve calendar months.

### 2.6 Market Capitalization

To determine the eligible company size to be included in the Indices, the free-float market capitalization of each security is calculated for all stocks in the Investable Equity Universe that passed the investability screens. The free float is estimated based on the publicly available shareholder information. For each security, the free float is defined as the proportion of shares outstanding that are deemed to be available for purchase in the public equity markets by international investors. In order to provide a more accurate reflection of market movements, each security is assigned a unique free-float factor which is reviewed on a quarterly basis. The free-float

factor reduces the number of shares to the actual amount available on the market and eliminates the locked-in shares that are not part of the available free float. The free-float market capitalization is calculated as follows:

Free-float market capitalization = free-float factor × full market capitalization.

## **2.7 Country Classification of Eligible Securities**

The securities country classification is based on the domicile of the primary exchange of the common stocks. For each country, the number of securities selected for the universe is defined.

Table 1 below provides a list of Countries, Stock Exchanges and the number of selected securities from the Investable Equity Universe for the indices.

**Table 1. Investable Equity Universe**

		Rothschild & Co Risk Based Indices						
		Number of Selected Securities						
Country	Exchange	Global Dev. Markets	Int'l	US	Canada	Europe	UK	Japan
Australia	Australian Securities Exchanges (ASE)	25	25	-	-	-	-	-
Austria	Vienna Stock Exchange	5	5	-	-	5	-	-
Belgium	NYSE Euronext Brussels	10	10	-	-	10	-	-
Canada	Toronto Stock Exchange	50	-	-	120	-	-	-
Denmark	NASDAQ OMX Copenhagen	15	15	-	-	15	-	-
Finland	NASDAQ OMX Helsinki	5	5	-	-	5	-	-
France	NYSE Euronext Paris	40	40	-	-	30	-	-
Germany	Frankfurt Stock Exchange, Xetra	45	45	-	-	35	-	-
Hong Kong	Stock Exchange of Hong Kong	10	10	-	-	-	-	-
Ireland	Irish Stock Exchange (Dublin)	5	5	-	-	5	-	-
Italy	Borsa Italiana	15	15	-	-	10	-	-
Japan	Tokyo Stock Exchange, Nagoya Stock Exchange	120	120	-	-	-	-	400
Netherlands	NYSE Euronext Amsterdam	15	15	-	-	10	-	-
Norway	Oslo Bors	5	5	-	-	5	-	-
Portugal	NYSE Euronext Lisbon	5	5	-	-	5	-	-
Singapore	Singapore Exchange	10	10	-	-	-	-	-
Spain	Bolsa De Madrid (Madrid), Sociedad de Bolsas (SIBE)	15	15	-	-	10	-	-
Sweden	NASDAQ OMX Stockholm	15	15	-	-	15	-	-
Switzerland	SIX Swiss Exchange (SIX-SW)	20	20	-	-	20	-	-
United Kingdom	London Stock Exchange	70	70	-	-	70	150	-
United States	New York Stock Exchange, Nasdaq, NYSE MKT LLC	500	-	500	-	-	-	-
<b>Total Number of Selected Securities</b>		<b>1,000</b>	<b>450</b>	<b>500</b>	<b>120</b>	<b>250</b>	<b>150</b>	<b>400</b>

## 3. Index Construction

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### 3.1 Approaches

Creating the indices involves a two-step process. The first step is the constituent selection of the securities that comprise the indices; the second step is the weighting of the index constituents, which is based on an equal risk contribution (“ERC”) weighting to produce a portfolio where each index constituent contributes the same level of risk.

Compared to market-capitalization strategies, the ERC construction process seeks to:

- Lower index volatility
- Enhance risk-adjusted returns [Replaced Sharpe ratio]
- Reduce maximum drawdown
- Without adversely impacting index diversification and its expected return

### 3.2 Constituent Selection

All selected securities from each index universe are ranked (from lowest to highest) using a proprietary risk score based on one year volatility and correlation. For each traded currency of the selected index universe, 50% of the least risky stocks for each traded currency are selected as index constituents subject to a buffer rule.

### 3.3 Buffer Rule

In an effort to reduce turnover, a buffer rule is applied to the index constituent selection process at each quarterly index rebalance. The buffer rule is applied to and a stock will remain in an index if its risk score ranks above 50%, but below 55% among selected securities from the Investable Equity Universe for the indices. The buffer rule does not increase the number of index constituents.

### 3.4 Index Constituents

The approximate number of selected index constituents for each index is shown in Table 2 below:

**Table 2. Rothschild & Co Risk Based Indices**

**Approximate Number of Index Constituents**

Global Developed Markets	International	Europe	Canada	Japan	UK	US
500	225	125	60	200	75	250

### 3.5 Constituent Weighting

After eliminating the securities with the highest risk scores, index constituents are weighted based on an Equal Risk Contribution (ERC) approach so that each index constituent contributes an equal level of risk to the overall portfolio with lower risk securities receiving higher weights and higher risk securities receiving lower weights.

In order to avoid a high level of individual security concentration, constituent weights are capped at 5% at time of rebalance.

### 3.6 Available Currencies

The Indices are available in multiple currencies as shown in Table 3 below:

**Table 3. Rothschild & Co Risk Based Indices**

Country	Global Developed Markets	International	US	Canada	Europe	UK	Japan
US Dollar (USD)	X*	X*	X*	X	X	X	X
Canadian Dollar (CAD)	X	-	-	X*	-	-	-
Euro (EUR)	X	X	X	-	X*	X	X
British Pound (GBP)	X	X	X	-	X	X*	X
Japanese Yen (JPY)	X	X	X	-	-	-	X*
Swiss Franc (CHF)	-	-	-	-	X	-	-

\* Base Currency

### 3.7 Available Return Calculations

Each index version is calculated in Price Return (PR), Net Total Return (NTR) and Gross Total Return (GTR).

As of the date of this Index Methodology, the Index Sponsor has appointed S&P Dow Jones Indices LLC (SPDJI) as Index Calculation Agent to calculate and publish the indices.

Net Total Return calculations follow the standard SPDJI Index Tax Treatment Methodology detailed in the Equity Indices Policies & Practices Methodology, or any updated version and is available from SPDJI. The methodology may also be found on SPDJI's web site at the below hyperlink.

<https://us.spindices.com/documents/methodologies/methodology-sp-equity-indices-policies-practices.pdf>

### 3.8 Index History

Index history is calculated for daily values and month end holdings. Index history started on 1/13/2006 (the 2nd Friday of the month) with a base value of 1,000 and was extended back to 1/14/2000 (the 2nd Friday of the month) in 2017, with base values adjusted to reflect the extended history.

## 4. Index Maintenance

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### 4.1 Index Review and Rebalance Frequency

The Rothschild & Co Risk-Based Indices are reviewed and rebalanced quarterly in January, April, July and October.

### 4.2 Equity Universe Review

On the 1st Friday of each quarter and seven days prior to the rebalance day, the Investable Equity Universe is determined. If the 1st Friday is not a business day, then the previous business day is used.

### 4.3 Index Constituent Selection and Weighting

On the following Tuesday after the 1st Friday of the quarter but before the index rebalance date, index constituents and weights are determined up to an including Monday's closing prices. If this day is not a business day, then the previous business day is used.

### 4.4 Index Rebalance Date

Each index is rebalanced on the 2nd Friday of the quarter. If the 2nd Friday is not a trading day for all index component stock exchanges then the respective index is rebalanced the next trading day where all the index component stock exchanges are open.

### 4.5 Corporate Events and Treatments

As of the date of this Index Methodology, the Index Sponsor has appointed S&P Dow Jones Indices LLC (SPDJI) as Index Calculation Agent to calculate and publish the indices.

The corporate events and treatments follow the standard SPDJI's Index Corporate Actions Methodology detailed in the Equity Indices Policies & Practices Methodology, or any updated version and is available from SPDJI. The methodology may also be found on S&PDJI's web site at the below hyperlink.

<https://us.spindices.com/documents/methodologies/methodology-sp-equity-indices-policies-practices.pdf>

### 4.6 Correction of Index Values

If the Index Sponsor determines that a material error has occurred in the calculation of the Indices, resulting in publication of a materially inaccurate index value, the Index Sponsor may instruct the index Calculation Agent to calculate and publish a corrected index value and shall determine, in its sole and absolute discretion, whether such corrected index value shall apply on a retrospective basis or only from the date such correction is published for the purposes of index calculations.

## 4.7 Index Adjustment and Index Suspension

If, in respect of any index valuation date, the Index Sponsor determines, in its sole and absolute discretion, that an index disruption event has occurred then, in its sole discretion, the Index Sponsor may determine:

- the value of any affected Underlying Component in respect of such index valuation date in a commercially reasonable manner which reflects the nature of the index disruption event (“index adjustment”), or
- that the calculation and publication of the index value be suspended, delayed or postponed (“index suspension”).
- The Index Sponsor shall communicate any such index adjustment and/or index suspension to the Index Calculation Agent.
- Notwithstanding the foregoing, if the Index Sponsor determines that an index disruption event has occurred, the Index Sponsor may, in its sole and absolute discretion, convene the Index Committee to determine what action, if any, is appropriate in accordance with this Index Methodology. “Index disruption event” means (in the opinion of the Index Sponsor):
- there has been a material delay or failure in the calculation or publication of values for any of the underlying components used in the calculation of the indices;
- there has been a suspension or disruption in the trading or settlement of any underlying component;
- an event resulting in the breakdown in any means of communication which is utilized in the determination of the index value where, as a consequence, in the sole and absolute discretion of the Index Sponsor, the last reported index value should not be relied upon
- any other event which materially disrupts or impairs the accuracy of any procedure normally used in determination of the index value including, but not limited to, Force Majeure Events;
- any other event which materially disrupts or impairs the ability of market participants in general to effect transactions in or obtain market values for an underlying component or observe the level of such underlying component;
- any other event which is prejudicial to the continuity in calculation and publication of the Index or the ability of the Index to achieve its stated objective;
- any other event which would otherwise require the Index Sponsor and/or Index Calculation Agent to depart from the terms of this Index Methodology in the management, maintenance, calculation or publication of the indices; or
- a determination by the Index Sponsor (acting through the Index Committee) that there should be a change to this index methodology, and it is impractical, prior to the implementation of such change, for the Index Calculation Agent to continue its calculation and/or for its publication, of the indices.

## 4.8 Index Modification

The Index Sponsor (acting always through the Index Committee) reserves the right to take any such actions that it believes are necessary and/or appropriate in order to preserve or enhance the ability

of an index to achieve its objectives; and/or to modify the principles underlying the index, as set forth in this index methodology, from time to time, if it believes such modifications to be necessary and/or appropriate.

Such actions include but are not limited to:

- replacement of an index with a successor index;
- removal, replacement or addition of any underlying component and any subsequent modification of this index methodology to reflect such removal, replacement or addition;
- an amendment of the formula for or method of determining an index value or an amendment to the current weightings of the underlying components of an index;

Upon taking any such action and/or making any such modification, the Index Sponsor will provide details thereof to the Index Calculation Agent.

The Index Sponsor will maintain a record of any amendment, modification or deletion to this index rulebook, which is available upon request from any investor in respect of a related financial product, subject to provision of such evidence of interest in such related financial product as the Index Sponsor in its sole and absolute discretion may require to the Index Sponsor.

#### **4.9 Historical Modifications**

Effective with July 2019 rebalance, all Indices were modified to the following:

- From a monthly rebalance to quarterly rebalance
- Began incorporating the Buffer Rule.

#### **4.10 Index Cancellation**

The Index Sponsor (acting through the Index Committee, but otherwise in its sole and absolute discretion) may at any time, for any reason and without notice permanently cancel (and instruct the Index Calculation Agent to cease its calculation of) an index.

Upon a decision to permanently cancel an Index, the Index Sponsor will communicate this to the Index Calculation Agent

#### **4.11 Events Leading to an Index Modification or Index Cancellation**

The following is a non-exhaustive list of events on the occurrence of which the Index Sponsor (acting through the Index Committee) may determine that it is appropriate to modify, adjust or permanently cancel an Index:

- The index notional has fallen below the level at which it is considered justifiable and economical to maintain the Index;
- a material increase in the costs incurred by the Index Sponsor and/or the Index Calculation Agent in the maintenance and publication and/or, as the case may be, calculation of the index;
- a change in Law;
- to improve the index investment properties.

## 5. Index Governance

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### 5.1 Index Sponsor

Rothschild & Co Risk Based Investments LLC (“R&CoRBI”) is the Index Sponsor of the Rothschild & Co Risk-Based Index series (the “indices”).

The Index Sponsor will retain all ownership rights, expressed or otherwise, with respect to the Index, including the ability to license, sell or transfer any or all of its ownership rights with respect to the index.

The Index Sponsor has appointed an Index Calculation Agent to calculate and maintain the indices on its behalf. The Index Sponsor may in the future terminate its relationship with the Index Calculation Agent named herein and appoint a replacement index calculation agent.

To the extent that the Index Sponsor makes any determinations in accordance with this index methodology, such determinations will be made by it in its sole and absolute discretion by reference to such factors as it deems appropriate and, in the absence of manifest error, will be final, conclusive and binding.

While the Index Sponsor currently employs the rules, procedures and methodology described in this index rulebook, no assurance can be given that market, regulatory, judicial, fiscal, financial or other circumstances will not arise that would, in the view of the Index Sponsor, necessitate or make desirable a modification to, adjustment to and/or deletion of this Index Rulebook or any provision herein. The Index Sponsor may also make modifications to the terms of the indices in any manner that it may deem necessary or desirable, including (without limitation) to correct any manifest or proven error or to cure, correct or supplement any defective provision contained in this index rulebook. Upon making any such modification, adjustment and/or deletion, the Index Sponsor will provide details thereof to the Index Calculation Agent.

The Index Sponsor will make available upon request any such modification, adjustment and/or deletion.

### 5.2 Index Calculation Agent

As of the date of this Index Methodology, the Index Sponsor has appointed S&P Dow Jones Indices LLC (SPDJI) as Index Calculation Agent to calculate and publish the indices in accordance with the index conditions.

The Index Calculation Agent will employ the methodology described in this index rulebook, as may be modified and/or adjusted and/or subject to deletions from time to time, in its calculation of an index value on each index valuation date (subject always to the terms of Investment Equity Universe Section) and will be responsible for the publication of the index value. Subject to the terms of this index methodology, any determination by the Index Calculation Agent will be made in its sole and absolute discretion by reference to such factors as it deems appropriate at such time. Any such determination by the Index Calculation Agent will, in the absence of manifest error, be final, conclusive and binding. For the avoidance of doubt, the Index Calculation Agent has no authority to require a modification, adjustment or deletion of any provision in this index rulebook.

The Index Sponsor may, in its sole discretion and without notice, appoint an alternative Index Calculation Agent at any time which may be the Index Sponsor or one of its Affiliates.

The index calculation follows the standard SPDJI's Index Mathematics Methodology for Modified Market Capitalization Weighted Indices, or any updated version and is available from SPDJI. The methodology may also be found on SPDJI's web site at the below hyperlink.

<https://us.spindices.com/documents/methodologies/methodology-index-math.pdf>

### **5.3 Index Committee**

The Index Committee will, and its primary role is to determine whether a modification, adjustment and/or deletion of this index methodology and/or any provision herein (including, without limitation, the methodology) is necessary, in order to:

- Ensure continuity in calculation and publication of the indices;
- Preserve or enhance performance of the indices; and/or
- Maintain the integrity of the indices, to the extent possible, given its stated objective.

Modifications or adjustments which, pursuant to the terms of this index methodology, the Index Committee may make include, without limitation, amendments to the methodology, determination of the value of any Underlying Component and substitution or removal of any Underlying Component from the Indices which, in either case, may have a negative impact on the performance of the indices.

Upon making any such modification, adjustment and/or deletion, the Index Sponsor will provide details thereof to the Index Calculation Agent.

## 6. Defined Terms

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**Adjusted closing price** means the closing price which includes any distributions and corporate actions that occurred at any time prior;

**Business Day** means a trading day for at least one stock exchange of an index's components;

**Change in Law** means (a) the adoption of, or any change in, applicable law or regulation (including, without limitation, any tax law) or (b) the promulgation of, or any change in the interpretation by any court, tribunal or regulatory authority with competent jurisdiction of, any applicable law or regulation (including action taken by a taxing authority) which, in the determination of the Index Sponsor (in its sole discretion) would (i) make it illegal for the Index Sponsor to perform its duties or (ii) cause the Index Sponsor to incur a materially increased cost of performing its obligations under this Index Rulebook (including, without limitation, due to any increase in tax liability, decrease in tax benefit or other adverse effect on its tax position);

**Force Majeure Event** means an event or circumstance (including, without limitation, a systems failure, fire, building evacuation, natural or man-made disaster, act of God, act of state, armed conflict, act of terrorism, riot or labor disruption or any similar intervening circumstance) that is beyond the reasonable control of the Index Sponsor;

**Index Calculation Agent** means S&P Dow Jones Indices LLC or any replacement Index Calculation Agent determined by the Index Sponsor from time to time;

**Index Committee** means the committee consisting of representatives from certain businesses and control functions as determined by the Index Sponsor;

**Index Component Stock Exchanges** include all stock exchanges as defined in the list of the part "Country Classification of Eligible Securities" of this document;

**Index Rulebook** means this document, as updated and amended from time to time;

**Index Sponsor** means Rothschild & Co Risk Based Investments LLC, a wholly-owned subsidiary of Rothschild & Co;

**R&CoRBI**: means Rothschild & Co Risk Based Investments LLC, a wholly-owned subsidiary of Rothschild & Co.