

MSCI Global Thematic Select Sentiment Rotation Index Methodology

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1. Introduction

The MSCI Global Thematic Select Sentiment Rotation Index¹ (the 'Index') aims to represent the performance of the securities from the MSCI ACWI IMI Index (the 'Parent Index') which belong, each month, to the four highest-ranked MSCI Thematic Indexes, as selected from a set of MSCI Thematic Indexes², based on a theme-specific media sentiment score (MediaStats Megatrend Scores) calculated for each of the respective themes by MKT MediaStats³.

1 The Index is governed by a set of methodology and policy documents ("Methodology Set"), including the present index methodology document. Please refer to Appendix 1 for more details.

2 Please refer to <https://www.msci.com/our-solutions/indexes/thematic-investing> for more information about MSCI Thematic Indexes.

3 MKT MediaStats is a big-data information technology company specializing in financial markets which generates theme level Megatrend Scores on a monthly basis <https://www.mktmediastats.com/>. Please refer to Appendix 2 for details.

2. Index Construction

The Index is constructed from the Parent Index. The following steps are applied at initial construction and at each Index Review of the Index:

- Applicable Universe
- Eligible Universe
- Investability Screening
- ESG Eligibility Criteria
- Security Weighting

2.1. Applicable Universe

The Applicable Universe for the Index is constructed by combining the securities from a set of MSCI Thematic Indexes⁴ (the 'Eligible Indexes').

At each Index Review, the Eligible Indexes are subsequently ranked in descending order of the MediaStats Megatrend Scores of each Eligible Index. The four Eligible Indexes with the highest MediaStats Megatrend Scores are selected and combined with following weights based on their rankings⁵:

Ranking j	Weight a_j
1	50%
2	25%
3	15%
4	10%

The weight of each security after combining the four Eligible Indexes can be calculated as follows:

$$W_i = \sum_{j=1}^4 a_j \Omega_{ij},$$

where:

- W_i is the weight of security i in the Applicable Universe index.
- a_j is the target weight of the Eligible Index j .
- Ω_{ij} is the weight of security i in the Eligible Index j .

⁴ Please refer to Appendix 3 for details.

⁵ A security can be part of multiple Eligible Indexes. In such a case, the security weights of each selected Eligible Index will be multiplied by their corresponding target weight and then added up.

2.2. Eligible Universe

2.2.1. Securities Exclusion

Securities which are also included in at least one Eligible Index outside of the top 4 ranked Eligible Indexes are excluded from the Applicable Universe.

2.2.2. Country selection

The Eligible Universe for the Index includes the constituents of the Applicable Universe which are also part of a set of country indexes⁶.

2.3. Eligible Universe Investability Screening

2.3.1. Size Criteria

Securities with full market capitalization greater than USD 500 Million are eligible for inclusion in the Index.

2.3.2. Liquidity Criteria

Securities with 3-month ADTV (Average Daily Traded Value) greater than USD 5 Million are eligible for inclusion in the Index.

ADTV is calculated as:

$$ADTV_{3M} = \frac{ATV_{3M}^7}{252},$$

where ATV_{3M} is annualized 3-month Average Traded Value of the security.

To avoid multiple securities of the same company in the final Index, only the most liquid security for each issuer per its 3-month ADTV, is eligible for inclusion. Should there be two securities with the same 3-month ADTV, the one with higher free-float adjusted market capitalization is ranked higher for selection.

2.4. ESG Eligibility Criteria

The Index uses company ratings and research provided by MSCI ESG Research⁸ to determine eligibility for index construction.

⁶ Please refer to Appendix 4 for details.

⁷ MSCI Index Calculation Methodology at www.msci.com/index/methodology/latest/IndexCalc and

MSCI Global Investable Market Indexes Methodology at <https://www.msci.com/index-methodology>

⁸ See section 5 for further information regarding ESG and climate data used in the Index that MSCI Limited and MSCI Deutschland GmbH source from MSCI ESG Research LLC, a separate subsidiary of MSCI Inc. MSCI ESG Research is solely responsible for the creation, determination and management of such data as a provider to MSCI Limited and MSCI Deutschland GmbH. MSCI Limited and MSCI Deutschland GmbH are the benchmark administrators for the MSCI indexes.

2.4.1. ESG Controversies Score Eligibility

All companies assessed as having involvement in ESG controversies that are classified as Red Flags (MSCI ESG Controversy Score of 0) are not eligible for inclusion in the Index. A Red Flag indicates an ongoing, Very Severe ESG controversy implicating a company directly through its actions, products, or operations.

2.4.2. Controversial Business Involvement Criteria

The Index uses MSCI ESG Business Involvement Screening to identify companies that are involved in the following business activities. Companies that meet the following business involvement criteria are excluded from the Index. Please refer to Appendix 5 for details on these criteria:

- Compliance with all the UN Global Compact Principles
- Controversial Weapons
- Tobacco
- Oil & Gas
- Thermal Coal

2.5. Security Weighting

At each Index Review and at initial construction, the securities selected for inclusion in the Index are assigned the weights W_i from the Section 2.1 and are then normalized to sum to 100%.

Additionally, the constituent weights are capped to mitigate concentration risk in the Index. The individual security weights in the final Index are capped at 5%. In case it is not feasible to cap the security weights at 5%, the capping will be relaxed in steps of 1%.

3. Input Data Fallback Mechanism

If, at an Index Review, the MediaStats Megatrend Scores required for the Index rebalance are not available from MKT MediaStats, dated as of the month-end prior to the Index Review, then the latest available MediaStats Megatrend Scores prior to the Index Review date will be used.

If, at an Index Review, MSCI determines that the primary source data from MKT MediaStats is stale for the last 4 months or is not reflective of current market conditions, the Eligible Indexes then will be ranked in descending order of their 3-month price momentum score and the four highest ranked Eligible Indexes would be selected. In the case that two Eligible Indexes have same 3-month price momentum score, the Eligible Index with higher 6-month price momentum score will be selected.

The 3-month price momentum score and 6-month price momentum score will be calculated as follows:

At each Index Review date, the 3-month price momentum score will be calculated by dividing the last 3-month price return of the individual Eligible Index as of Index Review date by standard deviation of the daily price returns of the Eligible Index over the same period. The 6-month price momentum score will be calculated by dividing the last 6-month price return of the individual Eligible Index as of Index Review date by standard deviation of the daily price returns of the index over the same period.

Subsequently, a review of alternative data for the MediaStats Megatrend Scores would be conducted. The adoption of an alternative data source and any amendments to the methodology to reflect this will be announced to all clients simultaneously. MSCI may consult with clients to gather their feedback on the choice of alternative sources in line with MSCI Index Consultation Policy⁹.

⁹ Please refer to MSCI Index Policies document at: <https://www.msci.com/index-methodology>

4. Maintenance of the Index

4.1. Monthly Index Reviews

The Index is reviewed on a monthly basis and staggered rebalanced over five days $T - 4$, $T - 3$, $T - 2$, $T - 1$ and T , where T is the 12th business day of each month¹⁰. The pro forma Index is announced seven business days before the effective date.

In general, MSCI uses MSCI ESG Research data (including MSCI Climate Change Metrics, MSCI ESG Controversies and MSCI Business Involvement Screening Research) as of the end of the month preceding the Index Reviews for the rebalancing of the Index.

4.1.1. Staggered Rebalance

The rebalance changes of the Pro forma Index are then staggered for implementation by spreading the change in Index Number of Shares (NOS) for each security over five days leading into the rebalancing effective date (T). For each $t \in \{T - 4, T - 3, T - 2, T - 1, T\}$, number of shares for each security included in the Index *Staggered Index NOS* (t) are calculated as below:

$$\begin{aligned} \text{Staggered Index NOS } (t) &= \text{Pro forma Index NOS } (t) \\ &+ [\text{Adjusted Pro forma Index NOS } (T) - \text{Pro forma Index NOS}(t)] \frac{N}{5}, \end{aligned}$$

where,

- t is the effective date of the staggering.
- T is the rebalancing effective date of the Pro forma Index.
- *Pro forma Index NOS* (t) is the number of shares of a security in the Pro forma Index effective on t (as of close $t - 1$). It is calculated as a product of the end of day security number of shares on $t - 1$ and Full Market Cap Adjustment Factor¹¹ in the Pro forma Index on t .
- *Adjusted Pro forma Index NOS* (T) is the *Pro forma Index NOS* (T) adjusted for change in number of shares due to events like Right Issues, Consolidation, Stock Dividend, effective between t and T .
- N is the n^{th} day of staggering, e.g., $t - 4$ is the 1st day of staggering.

4.2. Ongoing Event Related Changes

Corporate event treatment for the Index depends on whether the effective date of the event falls within the staggering period ($T - 4$, $T - 3$, $T - 2$, $T - 1$, T), or outside the staggering period.

¹⁰ The rebalance over five days is applied as of August 2024 Index Review and onwards. The staggered rebalance is not implemented before this date.

¹¹ Full Market Cap Adjustment Factor (FMCAF): A factor that is used in index constituent weighting calculation defined as (Inclusion Factor (i.e. FIF)) * (Constraint Factor) * (Variable Weighting Factor). For more details, please refer to section 2.7 of the MSCI corporate Events Methodology book at <http://www.msci.com/index-methodology>.

4.2.1. Events Effective Outside the Staggering Period

The general treatment of corporate events effective outside the staggering period in the Index aims to minimize turnover outside of Index Reviews. The methodology aims to appropriately represent an investor's participation in an event based on relevant deal terms and pre-event weighting of the index constituents that are involved. Further, changes in index market capitalization that occur as a result of corporate event implementation will be offset by a corresponding change in the Variable Weighting Factor (VWF) of the constituent.

The following section briefly describes the treatment of common corporate events within the Index.

No new securities will be added (except where noted below) to the Index between Index Reviews. For cases where additions are noted below, securities will be added to the Index only if added to the Parent Index. Parent Index deletions will be reflected simultaneously.

EVENT TYPE	EVENT DETAILS
New additions to the Parent Index	A new security added to the Parent Index (such as IPO and other early inclusions) will not be added to the Index.
Spin-Offs	All securities created as a result of the spin-off of an existing Index constituent will be added to the Index at the time of event implementation. Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.
Merger/Acquisition	<p>For Mergers and Acquisitions, the acquirer's post event weight will account for the proportionate amount of shares involved in deal consideration, while cash proceeds will be invested across the Index.</p> <p>If an existing Index constituent is acquired by a non-Index constituent, the existing constituent will be deleted from the Index and the acquiring non-constituent will not be added to the Index.</p>
Changes in Security Characteristics	A security will continue to be an Index constituent if there are changes in characteristics (country, sector, size segment, etc.) Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

Further detail and illustration regarding specific treatment of corporate events relevant to this Index can be found in the MSCI Corporate Events Methodology book under the sections detailing the treatment of events in Capped Weighted and Non-Market Capitalization Weighted indexes.

The MSCI Corporate Events methodology book is available at:
<https://www.msci.com/index-methodology>.

4.2.2. Events Effective During the Staggering Period

The impact of event on the Index depends on the type of event and calculation date of the Index as elaborated below.

4.2.2.1. Calculation on T-7

a) Before effective date

The Pro forma Index in general are announced seven business days before T ($T - 7$). If there is an event already confirmed on $T - 7$ with an effective date in the staggering period, the change in numbers of shares for the security due to the rebalancing will not be staggered for such security until the event effective date. In case of multiple events, the staggering will be postponed till the effective date of the earliest event.

b) On and after effective date

In case of Rights Issues and market neutral events (like Split, Consolidation, Stock Dividend etc.) which involve change in security number of shares but does not involve change in the full market cap adjustment factor¹², staggering will start from the next day of the event effective date.

For all other events, staggering will start from the effective date of the event.

4.2.2.2. Calculation after T-7

a) Before effective date

In case of an event effective in the staggering period, the numbers of shares for the security involved in the event as announced on $T - 7$ will hold until a day before the effective date. In case of multiple events, the effective date of the earliest event will be taken into account.

b) On and after effective date

In case of Rights Issues and market neutral events (like Split, Consolidation, Stock Dividend etc.) which involve change in security number of shares but does not involve a change in inclusion factor, staggering will be applied again from the next day of the event effective date, taking into account the new post event number of shares in the Index.

For all other events, staggering will be applied from the effective date of the event incorporating the post event number of shares.

4.2.2.3. Treatment of Suspended Securities

A suspension treatment will be applied to any security suspended on any day starting from $T - 6$ until $T - 2$. On the day of suspension (t), the pro-forma Full Market Cap Adjustment Factor in the Index announced for the security for the next day ($t + 1$) will be held constant until T . However, in case, on $T - 2$, if a new addition to the Parent Index is reverted due to suspension and the security is

¹² Full Market Cap Adjustment Factor (FMCAF): A factor that is used in index constituent weighting calculation defined as (Inclusion Factor (i.e. FIF)) * (Constraint Factor) * (Variable Weighting Factor). For more details, please refer to section 2.7 of the MSCI Corporate Events Methodology book at <http://www.msci.com/index-methodology>.



no longer a part of the Parent Index on T , the security will also be deleted from the Index effective on T .

5. MSCI ESG Research

The Index is a product of MSCI Inc. that utilize information such as company ratings and research produced and provided by MSCI ESG Research LLC (MSCI ESG Research), a subsidiary of MSCI Inc. In particular, the Index uses the following MSCI ESG Research products: MSCI ESG Controversies, MSCI ESG Business Involvement Screening Research, and MSCI Climate Change Metrics. MSCI Indexes are administered by MSCI Limited and MSCI Deutschland GmbH.

5.1. MSCI ESG Controversies

MSCI ESG Controversies provide assessments of controversies concerning the potential negative environmental, social, and/or governance impact of company operations, products and services. The evaluation framework used in MSCI ESG Controversies is designed to be consistent with international norms represented by the UN Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, and the UN Global Compact. MSCI ESG Controversies Score falls on a 0-10 scale, with “0” being the most severe controversy.

The MSCI ESG Controversies methodology can be found at:
<https://www.msci.com/legal/disclosures/esg-disclosures>.

5.2. MSCI ESG Business Involvement Screening Research

MSCI ESG Business Involvement Screening Research (BISR) aims to enable institutional investors to manage environmental, social and governance (ESG) standards and restrictions reliably and efficiently.

The MSCI Business Involvement Screening Research methodology can be found at:
<https://www.msci.com/legal/disclosures/esg-disclosures>.

5.3. MSCI Climate Change Metrics

MSCI Climate Change Metrics provides climate data & tools to support institutional investors seeking to integrate climate risk & opportunities into their investment strategy and processes. This includes investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, alignment with temperature pathways and factoring climate change research into their risk management processes, in particular through climate scenario analysis for both transition and physical risks.

The dataset spans across the four dimensions of a climate strategy: transition risks, green opportunities, physical risks and 1.5° alignment.

For more details on MSCI Climate Change Metrics, please refer to <https://www.msci.com/climate-change-solutions>.

Appendix 1: Methodology Set

The Index is governed by a set of methodology and policy documents (“Methodology Set”), including the present index methodology document as mentioned below:

- Description of methodology set – www.msci.com/index/methodology/latest/ReadMe
- MSCI Corporate Events Methodology – www.msci.com/index/methodology/latest/CE
- MSCI Index Calculation Methodology – www.msci.com/index/methodology/latest/IndexCalc
- MSCI Index Glossary of Terms – www.msci.com/index/methodology/latest/IndexGlossary
- MSCI Index Policies – www.msci.com/index/methodology/latest/IndexPolicy
- MSCI Global Investable Market Indexes Methodology – www.msci.com/index/methodology/latest/GIMI
- MSCI ESG Universal Indexes Methodology – <https://www.msci.com/index/methodology/latest/ESGUniversal>
- ESG Factors In Methodology*

The Methodology Set for the Index can also be accessed from MSCI’s webpage <https://www.msci.com/index-methodology> in the section ‘Search Methodology by Index Name or Index Code’.

* ‘ESG Factors in Methodology’ contains the list of environmental, social, and governance factors considered, and how they are applied in the methodology (e.g., selection, weighting or exclusion). It can be accessed in the Methodology Set as described above.

Appendix 2: MediaStats Megatrend Scores

The MediaStats Megatrend Score is calculated by MKT MediaStats for each MSCI Thematic index at the end of every calendar month.

For each MSCI Thematic index, MKT MediaStats uses the business descriptions¹³ from each of the indexes methodology document to capture time series¹⁴ and cross-sectional shifts of investor attention and sentiment towards megatrends by analyzing media articles sourced from approximately 100 thousand individual sources. The MediaStats Megatrend Score¹⁵ is calculated based on an average positive sentiment intensity change over the most recent three months period compared to the preceding three months.

To remove outliers, the MediaStats Megatrend Score is winsorized at +/- 3 i.e., the scores above 3 are capped at 3 and scores below -3 are capped at -3. This score is then rounded to the first decimal. For the Eligible Indexes ranking in Section 2.1 in case two or more scores have the same rounded value, the ranks from the previous rebalancing are applied.

For further details on the calculation methodology, please refer to:

<https://www.mktmediastats.com/post/dynamic-megatrend-rotation>.

13 Any update in MSCI Thematic Index business descriptions will be communicated to MKT MediaStats such that they can implement the changes at their end as soon as it is practicable. The updated MediaStats Megatrend Scores shall take effect at the end of the respective month following the acknowledgement of the receipt of the updated descriptions from MKT MediaStats.

14 The business descriptions of some of the MSCI Thematic Indexes may overlap. For example, the descriptive terms of the MSCI ACWI IMI Robotics Index are also part of the descriptive terms for the MSCI ACWI IMI Autonomous Technology & Industrial Innovation Index. Consequently, a fraction of the articles covering these two themes are also shared. The overlap in articles can potentially lead to correlated MediaStats Megatrend Scores.

15 MediaStats Megatrend Scores may behave differently for broader themes that include narrower themes in comparison to separate narrow themes. The relative change in positive intensity for a broader theme that may cover more articles in general could be lower than for a narrow theme that may cover fewer articles. For instance, an absolute change of 1 article would be a 100% change for a theme that had 1 article in the previous period but only a 1% change for the theme that had 100 articles in the previous period.

Appendix 3: Eligible Indexes

The Eligible Indexes list¹⁶ comprises the following twenty-two MSCI Thematic Indexes¹⁷:

Index Code		Index Name
1	723013	MSCI ACWI IMI Ageing Society Opportunities Index
2	732037	MSCI ACWI IMI Autonomous Technology & Industrial Innovation
3	747093	MSCI ACWI IMI Blockchain Economy
4	746832	MSCI ACWI IMI Clean Energy Infrastructure
5	723027	MSCI ACWI IMI Cybersecurity
6	737057	MSCI ACWI IMI Digital Health
7	723025	MSCI ACWI IMI Efficient Energy Index
8	731771	MSCI ACWI IMI Fintech Innovation
9	737018	MSCI ACWI IMI Food Revolution Index
10	734559	MSCI ACWI IMI Future Education
11	727806	MSCI ACWI IMI Future Mobility
12	731769	MSCI ACWI IMI Genomic Innovation
13	727804	MSCI ACWI IMI Millennials
14	747286	MSCI ACWI IMI Natural Resources Stewardship
15	732041	MSCI ACWI IMI Next Generation Internet Innovation
16	747122	MSCI ACWI IMI Plastics Transition
17	746884	MSCI ACWI IMI Renewables and Energy Efficiency
18	723011	MSCI ACWI IMI Robotics
19	746885	MSCI ACWI IMI Sharing Economy
20	727807	MSCI ACWI IMI Smart Cities
21	746738	MSCI ACWI IMI Space Exploration
22	747270	MSCI ACWI IMI Sustainable Water Transition

¹⁶ The Eligible Indexes list may change should any of the MSCI Thematic Indexes cease to be calculated temporarily or are terminated in the future.

¹⁷ Please refer to <https://www.msci.com/index-methodology> for the methodology of the MSCI Thematic Indexes.

Appendix 4: Country Indexes

The country indexes list comprises the following twenty-two indexes:

	Region	Index Name
1	North America	MSCI Canada IMI
2		MSCI USA IMI
3	Europe	MSCI Austria IMI
4		MSCI Belgium IMI
5		MSCI Denmark IMI
6		MSCI Finland IMI
7		MSCI France IMI
8		MSCI Germany IMI
9		MSCI Ireland IMI
10		MSCI Italy IMI
11		MSCI Netherlands IMI
12		MSCI Norway IMI
13		MSCI Portugal IMI
14		MSCI Spain IMI
15		MSCI Sweden IMI
16		MSCI Switzerland IMI
17		MSCI United Kingdom IMI
18	Pacific	MSCI Australia IMI
19		MSCI Hong Kong IMI
20		MSCI Japan IMI
21		MSCI New Zealand IMI
22		MSCI Singapore IMI

Appendix 5: Values-Based and Climate Change-Based Exclusion Criteria

The Index is constructed with an aim to reflect the performance of companies that are consistent with specific values-based and climate change-based criteria.

Compliance with all the UN Global Compact Principles

- All companies that fail to comply the United Nations Global Compact principles (companies with value 'Fail') are excluded.

Values-based Exclusions Criteria

Controversial Weapons

- All companies that produce biological or chemical weapons systems are excluded.
- All companies that produce critical components for biological and chemical weapons systems are excluded.
- All companies that are 50 percent or more owned by a company with biological and chemical weapons involvement are excluded.
- All companies that own 20 to 49.99 percent of a company with biological and chemical weapons involvement are excluded. When a company owns 50 percent or more of a subsidiary with involvement, MSCI treats it as a consolidated subsidiary.
- All companies involved in the production of depleted uranium weapons, ammunition and armor are excluded.
- All companies that are 50 percent or more owned by a company with depleted uranium weapons involvement are excluded.
- All companies that own 20 to 49.99 percent of a company with depleted uranium weapons involvement are excluded. When a company owns 50 percent or more of a subsidiary with involvement, MSCI treats it as a consolidated subsidiary.
- All companies involved in the production of cluster munitions, components for such products, or involved indirectly through ownership ties to companies involved in production of such goods, are excluded.
- All companies involved in the production of anti-personnel or anti-vehicle landmines, essential intended or dual-use components of such products or involved indirectly through ownership ties to companies involved in such products, are excluded.
- All companies that produce blinding laser weapons that cause permanent blindness to the target are excluded.
- All companies owned by a blinding laser manufacturer are excluded.
- All companies that own a blinding laser manufacturer are excluded.
- All companies that produce weapons that use non-detectable fragments are excluded.
- All companies owned by a non-detectable weapons manufacturer are excluded.
- All companies that own a non-detectable weapons manufacturer.
- All companies owned by an incendiary weapons manufacturer are excluded.
- All companies that own an incendiary weapons manufacturer are excluded.

- All companies that produce incendiary weapons using white phosphorus are excluded.

Tobacco

- All companies involved in the production of tobacco products are excluded. Tobacco products include nicotine-containing products, including traditional and alternative tobacco smoking product.
- All companies involved in the production, distribution or retail of tobacco products, as a licensor of brand names for tobacco products, as a supplier for tobacco products or involved indirectly through ownership ties to companies involved in such products or services, are excluded.

Climate Change-based Exclusions Criteria

Oil & Gas

- All companies deriving more than 10% revenue (either reported or estimated) from conventional oil and gas are excluded. This factor includes all types of conventional oil and gas production including Arctic onshore/offshore, deepwater, shallow water and other onshore/offshore. It excludes revenues from unconventional oil & gas (oil sands, shale oil, shale gas).
- All companies deriving any revenue (either reported or estimated) from unconventional oil and gas production are excluded. This factor includes revenues from oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane. It excludes all types of conventional oil and gas production including Arctic onshore/offshore, deepwater, shallow water and other onshore/offshore.

Thermal Coal-based Power Generation

- All companies deriving more than 5% revenue (either reported or estimated) from the thermal coal-based power generation are excluded.

Thermal Coal Mining

- All companies deriving more than 5% revenue (either reported or estimated) from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties are excluded. This factor excludes: revenue from metallurgical coal; coal mined for internal power generation (e.g. in the case of vertically integrated power producers); intra-company sales of mined thermal coal; and revenue from coal trading.

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