

**METHODOLOGY BOOK FOR:
-MSCI ACWI INVESTABLE MARKET
INNOVATION QUALITY
SUSTAINABLE 100 SELECT INDEX
-MSCI ACWI INVESTABLE MARKET
INNOVATION QUALITY
SUSTAINABLE 100 SELECT 10%
RISK CONTROL 3% DECREMENT
INDEX**

December 2021

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1 Introduction

The MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index aims to represent the performance of a set of securities that have higher exposure to innovation and quality themes as well as improved ESG characteristics.

To avoid concentration, the Index is capped as per the MSCI 10/40 Indexes methodology.

The MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select 10% Risk Control 3% Decrement Index aims to represent the performance of the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index, while targeting a specific level of risk and applying a constant markdown ('synthetic dividend') expressed as a percentage of performance.

2 ESG Research Framework

The MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index uses company ratings and research provided by MSCI ESG Research. The index uses the following MSCI ESG Research products: MSCI ESG Ratings, MSCI ESG Controversies.

For details on MSCI ESG Research’s full suite of ESG products, please refer to: <https://www.msci.com/esg-investing>

2.1 MSCI ESG RATINGS

MSCI ESG Ratings provides research, analysis and ratings of how well companies manage environmental, social and governance risks and opportunities.

MSCI ESG Ratings provides an overall company ESG rating - a seven-point scale from ‘AAA’ to ‘CCC’. In addition, the product provides scores and percentiles indicating how well a company manages each key issue relative to industry peers.

For more details on MSCI ESG Ratings, please refer to: <https://www.msci.com/esg-ratings>

2.2 MSCI ESG CONTROVERSIES

MSCI ESG Controversies provides assessments of controversies concerning the 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.

For more details on MSCI ESG Controversies, please refer to : <https://www.msci.com/documents/10199/acbe7c8a-a4e4-49de-9cf8-5e957245b86b>

3 Constructing the Index

The MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index is constructed by combining the following two sub-indexes:

- Innovation Tilted Sub-index
- Fundamentals Tilted Sub-index

The Innovation Tilted Sub-index is constructed from MSCI ACWI IMI Innovation Index (the “Parent Index 1”).

The Fundamentals Tilted Sub-index is constructed from MSCI ACWI Index (the “Parent Index 2”).

In addition to the above steps, the following steps are applied to the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index to construct the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select 10% Risk Control 3% Decrement.

The MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select 10% Risk Control 3% Decrement Index is constructed from the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index, by applying the following steps sequentially:

- Applying the MSCI Risk Control Indexes methodology¹
- Applying the MSCI Decrement Indexes methodology²

3.1 INNOVATION TILTED SUB-INDEX

3.1.1 ELIGIBLE UNIVERSE FOR INNOVATION TILTED SUB-INDEX

3.1.1.1 ESG RATINGS ELIGIBILITY

The Innovation Tilted Sub-index uses MSCI ESG Ratings to identify companies that have demonstrated an ability to manage their ESG risks and opportunities. Companies having MSCI ESG Rating of ‘BB’ or above are eligible for inclusion in the Innovation Tilted Sub-index.

¹ Please refer to the MSCI Risk Control Indexes methodology at www.msci.com/index-methodology

² Please refer to the MSCI Decrement Indexes methodology at www.msci.com/index-methodology

3.1.1.2 ESG CONTROVERSIES SCORE ELIGIBILITY

The Innovation Tilted Sub-index uses MSCI ESG Controversies Scores to identify those companies that are involved in very serious controversies involving the environmental, social, or governance impact of their operations and/or products and services. Companies are required to have an MSCI ESG Controversies Score of 1 or higher to be eligible for inclusion in the Innovation Tilted Sub-index.

3.1.1.3 LIQUIDITY SCREEN

The securities from Parent Index 1 are screened for 12-month ADTV to be greater than USD 10 Million to be eligible for inclusion in Sub-index 1. ADTV is defined as Average Daily Traded Volume and is calculated as:

$$ADTV_{12M} = \frac{ATV_{12M}^3}{252}$$

3.1.2 CONSTITUENT SECURITIES SELECTION FOR INNOVATION TILTED SUB-INDEX

The securities from the eligible universe for Innovation Tilted Sub-index are subsequently filtered to include a single security per issuer. For issuers having multiple securities which are part of the eligible universe, the security with the highest 12-month ADTV is selected.

From the securities remaining post screenings, 50 securities⁴ with the highest composite quality score are selected while ensuring the following:

- the maximum number of securities from any country is capped at 35 securities
- the maximum number of securities from any GICS Sector is capped at 20 securities

If the number of securities remaining post above selection is less than 50, then all the remaining securities are selected for the index.

3.1.3 SECURITY WEIGHTING FOR INNOVATION TILTED SUB-INDEX

At each Index Review, the securities selected for inclusion in the Innovation Tilted Sub-index are weighted by the product of their market capitalization weight in the Parent Index 1 and their corresponding Quality Score⁵.

³ MSCI Index Calculation Methodology at <https://www.msci.com/index-methodology>

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

⁴ For the backtest period of 26-May-2010 – 29-November-2015, the securities selected as of 30-November-2015 are used

⁵ For a brief description on Quality Score please refer to Appendix I

Quality Tilt Weight = Quality Score * Market Capitalization Weight

These quality weights are then normalized to 100.

Additionally, constituent weights are capped to mitigate concentration risk in the Index. The individual security weights in the Index are capped at 5%.

3.2 FUNDAMENTALS TILTED SUB-INDEX

3.2.1 ELIGIBLE UNIVERSE FOR FUNDAMENTALS TILTED SUB-INDEX

3.2.1.1 DETERMINATION OF FUNDAMENTAL SCORE

The fundamental score for each security from Parent Index 2 is calculated by combining Z-Scores of three winsorized fundamental variables, namely Percentage of sales spent on R&D and Capex, Return on Invested Capital and 1-YR Sales growth. The details of the calculation of these fundamental variables are provided in Appendix 2.

3.2.1.2 WINSORIZING THE FUNDAMENTAL VARIABLES

As part of the standardization process, outlier fundamental variable values are winsorized to ensure that the average values used to standardize the variables are less affected by extreme values. To do this, for a given variable, the values for all securities are first ranked in ascending order within Parent Index 2. Missing values are excluded from the ranking. Then, for securities that lie below the 5th percentile rank or above the 95th percentile rank, their value is set equal to the value of the 5th percentile ranked or 95th percentile ranked security, as applicable. This process is repeated for each of the three fundamental variables.

3.2.1.3 CALCULATING THE Z-SCORES

After winsorizing all the three fundamental variables, the Z-Score for each of the three variables for each security can be calculated using the mean and standard deviation of the relevant variable. Computing a Z-Score is a widely used method of standardizing a variable in order to combine it with other variables that may have a different unit of measurement or a different scale. Because it has a mean value of zero and a standard deviation of 1, the value of a z-score shows how many standard deviations a given value lies from the mean.

The Z-Score is defined as follows:

$$z = \frac{(x - \mu)}{\sigma}$$

Where:

- x is the winsorized variable for a given security

- μ is the mean of the winsorized variable, excluding missing values
- σ is the standard deviation of the winsorized variable, excluding missing values

Additionally, the Z-score for all three fundamental variables are winsorized at +/- 3.

3.2.1.4 CALCULATING THE FUNDAMENTAL SCORE

After standardizing each of the three fundamental variable values for each security in the selected security universe, a composite fundamental Z-Score is calculated for each security. The composite fundamental Z-Scores are computed by averaging the Z scores of all the three fundamental variables as calculated in section 3.2.1.3.

The Fundamental Score is then computed from the composite fundamental Z-Score as follows:

$$\text{Fundamental Score} = \begin{cases} 1 + Z, & Z > 0 \\ (1 - Z)^{-1}, & Z < 0 \end{cases}$$

Where Z is the composite fundamental Z-Score.

3.2.1.5 FUNDAMENTAL SCORE SCREEN

Securities from the Parent Index 2 that are ranked in the top half within their respective GICS⁶ sector based on the Fundamental score are selected for the Fundamentals Tilted Sub-index. The top half of a GICS sector group includes securities with Fundamental Score equal to or greater than the median Fundamental Score of all the securities in the same GICS sector. The median Fundamental Score is calculated after excluding securities with Fundamental Score = 0 or unavailable Fundamental Score.

3.2.1.6 ESG RATINGS ELIGIBILITY

The Fundamentals Tilted Sub-index uses MSCI ESG Ratings to identify companies that have demonstrated an ability to manage their ESG risks and opportunities. Companies having MSCI ESG Rating of 'BB' or above are eligible for inclusion in Fundamentals Tilted Sub-index.

⁶ GICS, the global industry classification standard jointly developed by MSCI Inc. and S&P Global. For more details please refer to <https://www.msci.com/gics>

3.2.1.7 ESG CONTROVERSIES SCORE ELIGIBILITY

The Fundamentals Tilted Sub-index uses MSCI ESG Controversies Scores to identify those companies that are involved in very serious controversies involving the environmental, social, or governance impact of their operations and/or products and services. Companies are required to have an MSCI ESG Controversies Score of 1 or higher to be eligible for inclusion in the Fundamentals Tilted Sub-index.

3.2.2 CONSTITUENT SECURITIES SELECTION FOR FUNDAMENTALS TILTED SUB-INDEX

The securities from the eligible universe for Fundamentals Tilted Sub-index are subsequently filtered to include a single security per issuer. For issuers having multiple securities which are part of the eligible universe, the security with the highest 12-month ADTV is selected.

From the securities remaining post screenings, 50 securities with the highest composite quality score are selected while ensuring the following:

- the maximum number of securities from any country is capped at 35 securities
- the maximum number of securities from any GICS Sector is capped at 20 securities

If the number of securities remaining post above selection is less than 50, then all the remaining securities are selected for the index.

3.2.3 SECURITY WEIGHTING FOR FUNDAMENTALS TILTED SUB-INDEX

At each Index Review, the securities selected for inclusion in the Fundamentals Tilted Sub-index are weighted by the product of their market capitalization weight in the Parent Index 2 and their corresponding Quality Score.

Quality Tilt Weight = Quality Score⁷ * Market Capitalization Weight

These quality weights are then normalized to 100.

Additionally, constituent weights are capped to mitigate concentration risk in the Index. The individual security weights in the Index are capped at 5%.

3.3 COMBINING SUB-INDEXES

At each Quarterly Index Review, the two Sub-indexes are combined based on following weights to create MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index:

⁷ For a brief description on Quality Score please refer to Appendix I

Sub-index	Weight
Innovation Tilted Sub-index	60%
Fundamentals Tilted Sub-index	40%

Between successive rebalancings, the weights of the component indexes will evolve based on the performance of the component indexes.

3.4 APPLICATION OF THE MSCI 10/40 INDEXES METHODOLOGY

In the final step, the MSCI 10/40 Indexes methodology is applied to MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index so that no group entity has a weight above 10%, and the sum of weights of all group entities with weights above 5% does not exceed 40%. Please refer to the following link for further details on the MSCI 10/40 Indexes methodology:

<https://www.msci.com/index-methodology>

3.5 APPLICATION OF THE MSCI RISK CONTROL AND DECREMENT INDEXES METHODOLOGY

The MSCI Risk Control Indexes Methodology and the MSCI Decrement Indexes Methodology⁸ are applied sequentially on the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index to construct the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select 10% Risk Control 3% Decrement Index. The parameters for the application of the risk control methodology and the decrement methodology in the above index are noted in Appendix 3.

⁸Please refer to the MSCI Decrement Indexes methodology at www.msci.com/index-methodology

4 Maintaining the Index

4.1 QUARTERLY INDEX REVIEWS

The MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index is reviewed on a quarterly basis to coincide with the May and November Semi-Annual Index Reviews and the February and August Quarterly Index Reviews of the Parents Indexes.

In general, MSCI uses MSCI ESG Research data (including MSCI ESG Ratings, MSCI ESG Controversies Scores) as of the end of the month preceding the Index Reviews for the rebalancing of the Index. For some securities, such data may not be published by MSCI ESG Research by the end of the month preceding the Index Review. For such securities, MSCI will use ESG data published after the end of month, when available, for the rebalancing of the Index.

In general, MSCI uses the company business segment names, business description and revenue data as of the end of the month preceding the quarterly index review.

The pro forma index is in general announced nine business days before the effective date.

4.2 ONGOING EVENT RELATED CHANGES

The general treatment of corporate events in the non-market capitalization weighted indexes 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 MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select 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 not 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	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. 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.
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>

Appendix 1: Description of Quality Score

The Quality Score for each security is calculated by combining the z-scores of three winsorized fundamental descriptors, Return on Equity, Debt to Equity and Earnings Variability. A given variable z-score for a security is calculated using the mean and standard deviation of the corresponding winsorized variable computed within the Parent Index. After calculating component variable z-scores, a composite Quality z-score for each security is computed by taking an equal-weighted average of the component z-scores. The Quality Score is then computed from the composite Quality z-score as follows:

$$Quality\ Score = \begin{cases} 1 + Z, & Z > 0 \\ (1 - Z)^{-1}, & Z < 0 \end{cases}$$

Where Z is the composite Quality z-score described earlier.

Appendix 2: Calculation of Fundamental Variables

Fundamental Variable	Calculation Details
Percentage of Sales spent on R&D and Capex	$\% \text{ Sales spent on R\&D and Capex} = \text{Capital Expenditures to Sales Ratio}_t + \text{Research and Development Expenses to Sales Ratio}_t$
Return on Invested Capital	$ROIC = \frac{\text{Operating Income}_t}{\text{Invested Capital}_t}$ <p>Where:</p> <ul style="list-style-type: none"> • <i>Operating Income_t</i> = Operating income before unusual expense • <i>Invested Capital_t</i> = Shareholder's equity + Total Debt + Minority Interest
1-YR Sales Growth	$\text{Sales Growth} = \frac{\text{Sales in USD}_t}{\text{Sales in USD}_{t-1}} - 1$

For more details on the fundamental data, please refer to the MSCI Fundamental Data Methodology (<https://www.msci.com/index-methodology>).

Appendix 3: Parameters used for the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select 10% Risk Control 3% Decrement Index

The MSCI Risk Control Indexes Methodology⁹ is applied on the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select Index using the following parameters:

	MSCI Risk Control Indexes Methodology Parameters	Parameters
1	Calendar Rule	Daily
2	Return Variant of MSCI World ESG Quality Select Low Volatility Index	Net Total Return
3	Risk Free Rate	EURIBOR up to 31-AUG-2021 and ESTR effective 01-SEP-2021
4	Risk Free Maturity Rate	Overnight
5	Closed Market Threshold	10
6	Rebalancing Type	Volatility
	Volatility Rebalancing Parameters	
7	Risk Control Level	10%
8	Base Currency of MSCI World ESG Quality Select Low Volatility Index and the cash component	EUR
9	Maximum Leverage	100%
10	Buffer	10%
11	Volatility Calculation Type	Equal Weighted Volatility
	Estimator Parameters	
12	Lag Between Rebalancing Date and Effective Date	6 business days
13	Short Term number of days estimate	20
14	Long Term number of days estimate	60
15	Absolute Change in Leverage	20%

The MSCI Decrement Indexes methodology is then applied using the parameters below, to construct the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select 10% Risk Control 3% Decrement Index.

⁹Please refer to the MSCI Risk Control Indexes methodology at www.msci.com/index-methodology

	MSCI Decrement Indexes Methodology Parameters	Parameters
1	Currency of Calculation	EUR
2	Return Variant of the Risk Control Index	Combined Return
3	Decrement Type	Fixed Percentage
4	Decrement Application	Geometric
5	Decrement Value	3%
6	Day-count Convention	Actual / 365
7	Index Floor	0
8	Decrement Frequency	Daily

Methodology Book Tracked Changes

The following sections have been modified since August 2021:

August 2021 updates:

Section 3: Constructing the Index

- addition of MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select 10% Risk Control 3% Decrement construction steps

Section 3.1.2: Daily Constituent Securities Selection for Innovation Tilted Sub-index

- addition of Footnote 4

Section 3.5: Application of the MSCI Risk Control and Decrement Indexes

Methodology

- new Section

Appendix 3: Parameters used for the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select 10% Risk Control 3% Decrement Index

- new Section

December 2021 update:

Appendix 3: Parameters used for the MSCI ACWI Investable Market Innovation Quality Sustainable 100 Select 10% Risk Control 3% Decrement Index

- amended the lag between Rebalancing Date and Effective Date from 3 to 6 business days (the amendment is relevant for the index since inception)

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The process for submitting a formal index complaint can be found on the index regulation page of MSCI's website at: www.msci.com/index-regulation

To learn more, please visit www.msci.com

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