

Consultation on Proposed Changes to MSCI Thematic Index Methodologies

PROPOSAL FOR CONSULTATION

This consultation may or may not lead to the implementation of any or all of the proposed changes in the highlighted or any other MSCI indexes. Consultation feedback will remain confidential. MSCI may publicly disclose feedback if specifically requested by specific market participants. In that case, the relevant feedback would be published together with the final result of the consultation.

April 2022

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Summary

MSCI presents a consultation with proposals for three changes to MSCI Thematic Index methodologies* following the [upcoming enhancement](#)** of the MSCI Thematic Exposure Standard (TES).

MSCI invites feedback from market participants on or before April 18, 2022; and will announce the results of the consultation on or before April 22, 2022. Changes, if any, would be implemented effective June 1, 2022.

*Please refer to Appendix II for the full list of thematic indexes in scope of this consultation

**Please refer to Appendix I for the impact of this enhancement on MSCI Thematic Indexes

Summary of proposed changes

Proposed Changes to MSCI Thematic Index Methodologies

S. No	Current	Proposed Change	Expected Benefit(s)
1.	A pertinent SIC Code may be deleted from the list of selected SIC Codes ¹ if a company whose business segment is in the 'selected list of business segments' ¹ is deleted from the parent universe. This may lead to the deletion of other "relevant" companies from the index.	Implement SIC code buffering as a mechanism to retain a SIC Code in the selected list for 2 years.	Reduce risk of deletion of pertinent SIC codes and hence of relevant companies from the thematic index. Reduces index turnover and improves robustness of index rebalance.
2.	For companies which do not declare any revenue (e.g., they only have costs) or declare negative revenue (e.g., via certain accounting treatments), relevance scores (RS) would be calculated as 0, except for the Genomic Innovation ² theme.	Use segment assets for such companies as a fallback scaling factor to facilitate a non-zero relevance score. That is, extend the fallback logic of the Genomic Innovation theme to all themes.	Mitigate risk of constituent deletion if a particular company does not report revenues in one fiscal year (and so avoid reverse turnover). Facilitate inclusion of companies with relevant business activities which may be pre-revenue.
3.	Relevance score of 25% is used to select companies for the MSCI ACWI IMI Blockchain Economy ³ Index at rebalance.	Reduce the threshold to 15% for the MSCI ACWI IMI Blockchain Economy Index <u>only</u> .	Improve the theme representation and NOC stability of the index.

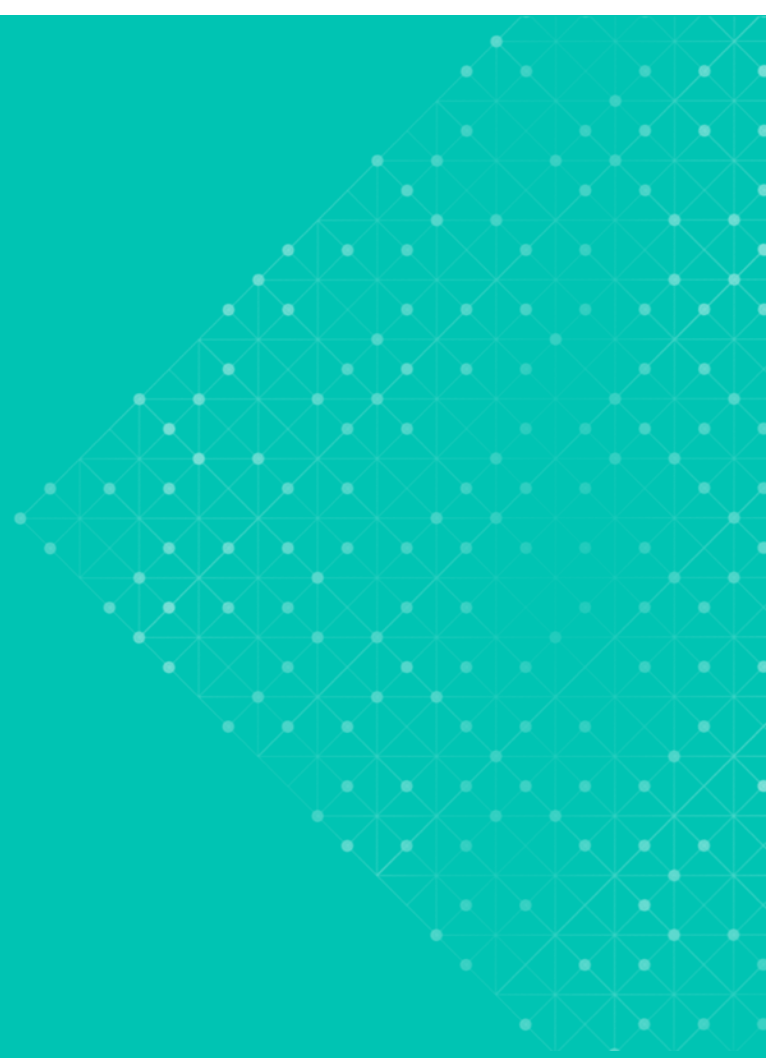
¹Please refer to section 3.3.3 and 3.3.4 of the MSCI Thematic Relevance Score Methodology

²: Please refer to section 2.6.2 of the methodology document of the ACWI IMI Genomic Innovation Index here –<https://www.msci.com/index-methodology>

³: Please refer to section 2.6.3 of the methodology document of the ACWI IMI Blockchain Economy Index here –<https://www.msci.com/index-methodology>

Proposed Change 1

SIC CODE BUFFERING



Rationale for Proposed Change 1

- A pertinent SIC Code may be deleted from the list of selected SIC Codes if a company whose business segment is in the 'selected list of business segments'* is deleted from the parent universe. However, the deletion of such a company from the universe need not invalidate the SIC Code's linkage to the theme.
- Pertinent SIC Codes dropped from the list of selected SIC Codes* can lead to a decrease in the relevance score of other companies leading to those stocks being deleted from a thematic index.
- **SIC Code buffering** prevents the immediate deletion of the SIC Codes: using this approach, we propose that a SIC code is retained in the selected list for a period of 2 years** from the date of first entry in the selected SIC Code list.
- The next slide shows the reduction in index turnover after applying SIC Code buffering, *ceteris paribus*.

Question: Should SIC Code buffering be applied to MSCI Thematic Indexes ?

*Please refer to section 3.3.4 of the MSCI thematic relevance score calculation methodology

**MSCI proposes a 2-year window to be consistent with the lookback period for which segment data is used in relevance score calculation.

Simulated SIC Code buffering: November 2019 SAIR

- In May 2019 SAIR, SIC code 3812 was mapped to the business segment 'Sensors' of Chemring Group
- In Nov 2019 SAIR, Chemring Group was deleted from ACWI IMI.
- This deleted SIC Code 3812 from the list for the Nov 2019 SAIR rebalance.
- Five stocks were deleted from the MSCI ACWI IMI Robotics Index as a result. The relevance score of Lockheed Martin was also reduced.
- If **SIC Code buffering** had been active :
 - The index would have had 5 fewer deletions
 - The weight of Lockheed Martin would have been stable.
 - One-way index turnover would have reduced from 6.6% to 4.3%

Name	RS (May 2019)	RS (Nov 2019 w/o SIC Code Buffering)	RS (Nov 2019 with SIC Code Buffering)	Comment
CHEMRING GROUP	29%	NA	NA	Parent Deletion in Nov 2019 SAIR
FLIR SYSTEMS	28%	14%	28%	5 securities no longer deleted as the RS is above 25%. RS level is also similar to that in May 2019. Hence little contribution to index turnover
KRATOS DEFENSE	77%	22%	55%	
ULTRA ELECTRONIC HLDGS	27%	12%	27%	
TOMTOM	77%	0%	76%	
CHINA AVIONICS A (HK-C)	65%	0%	83%	
LOCKHEED MARTIN CORP	55%	33%	54%	Reduced contribution to turnover as RS level is stable.
JENOPTIK	47%	34%	46%	

Proposed Change 2

RELEVANCE SCORE FALLBACK CALCULATION WHEN NO OR NEGATIVE REVENUE IS REPORTED

Rationale for Proposed Change 2

- Relevance score is calculated by using attributable segment revenue as a proportion of total revenue.
- Some potentially relevant companies may not be selected as they do not report any revenue. The company could be pre-revenue or arise from a specific accounting treatment of corporate transactions. E.g.
 - Biotech companies may be in a clinical trials phase and do not yet report any revenues.
 - **Plug Power Inc:** RS in the Efficient Energy and Future Mobility themes decreased to 0% when its FY 2020 revenue was negative due to the treatment of the vesting of warrants** issued to Amazon. This led to the stock's deletion from thematic indexes.
 - **Rivian Automotive Inc:** RS for the Future Mobility theme is zero as it reports zero revenue.
- To better reflect the thematic linkage of such companies, an alternative approach* is already applied for the Genomic Innovation theme, by using segment assets to scale exposure.
- MSCI proposes to use this fallback for all themes in the scope of this consultation.

Question: Should the segment asset fallback for relevance score calculation be applied to all themes for those companies whose revenue for all segments is zero or null or negative ?



* See section 2.6.2 of the methodology document of the ACWI IMI Genomic Innovation Index here –<https://www.msci.com/index-methodology>

** See page 38 of this document <https://www.sec.gov/ix?doc=/Archives/edgar/data/1093691/000155837021007147/plug-20201231x10k.htm>

RS fallback calculation and selected potential index inclusions

Name	Theme	Current Relevance Score (Nov 2021 SAIR w/o applying segment asset fallback)	Simulated Relevance Score (Nov 2021 SAIR) after applying segment asset fallback
PLUG POWER INC	Efficient Energy	0	72%
WALLBRIDGE MINING COMPANY LTD	Future Mobility	0	34%
AUSTRALIAN STRATEGIC MATERIALS LTD	Future Mobility	0	42%
FISKER INC	Future Mobility	0	49%
LORDSTOWN MOTORS CORP	Future Mobility	0	33%
PIEDMONT LITHIUM INC	Future Mobility	0	100%
VOLTA INC	Future Mobility	0	100%
ENOVIX CORP	Future Mobility	0	100%
ELECTREON WIRELESS LTD	Future Mobility	0	72%
HYLIION HLDGS CORP	Future Mobility	0	100%
PLUG POWER INC	Future Mobility	0	57%
LITHIUM AMERICAS CORP	Future Mobility	0	43%
RIVIAN AUTOMOTIVE INC	Future Mobility	0	68%

Proposed Change 3

RELAXATION OF SELECTION THRESHOLD FOR BLOCKCHAIN ECONOMY TO
15% FROM 25%

Rationale for Proposed Change 3

- In the Nov 2021 SAIR, the ACWI IMI Blockchain Economy Index had 39 constituents using a relevance score threshold of 25%*.
- If relevance scores from TES were used to rebalance the index in Nov 2021, there would be net deletions from the index due to discount factor changes**.
- To mitigate this impact and improve the NOC stability of index, MSCI proposes to relax the relevance score threshold to 15% from 25%, effective May 2022 SAIR.
- As detailed in the table on the next slide, using relevance scores from TES but relaxing the relevance score threshold from 25% to 15%, would have led to 5 fewer deletions from the index in the Nov 2021 SAIR.

Question: Do you agree that the relevance score threshold for selection in the MSCI ACWI IMI Blockchain Economy Index should be relaxed to 15% from 25%?



*Please refer to section 3.4.5 of the MSCI Relevance Score Calculation methodology document

**Please refer to slide 18 of this document which shows the impact on the Blockchain Economy thematic index using index turnover

Information Classification: GENERAL

ACWI IMI Blockchain Economy Index– Impact of using relevance scores from TES to rebalance the Index in Nov 2021 vs. without using relevance scores from TES

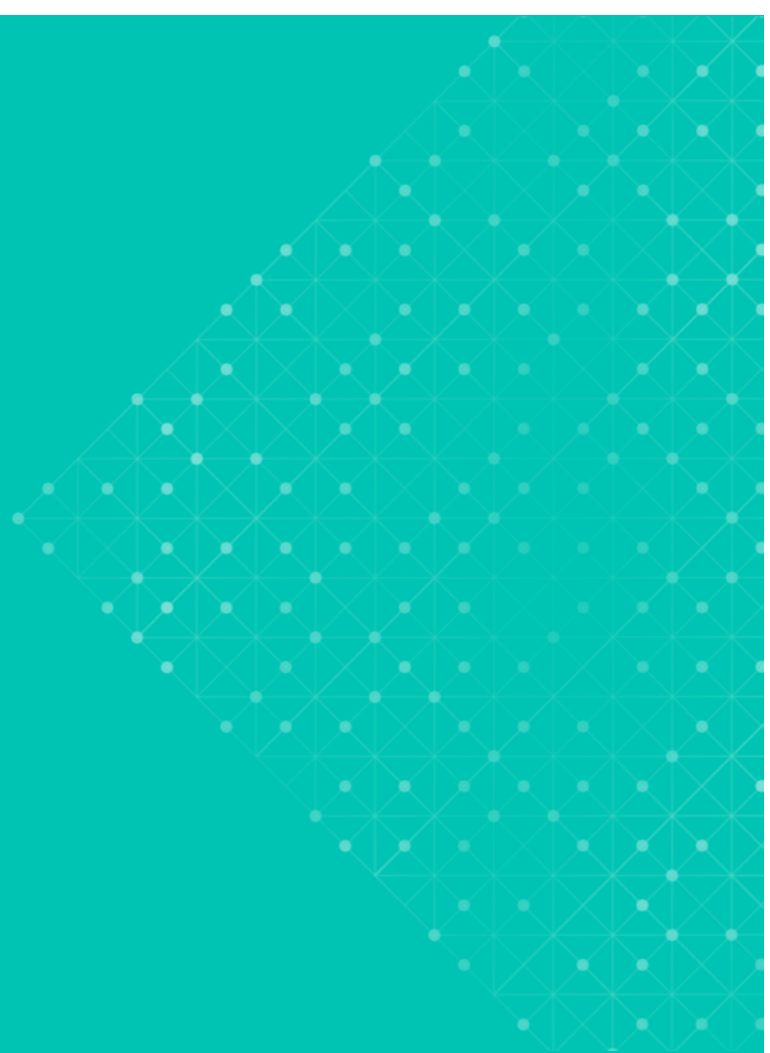
Row headers represent relevance score ranges (both ends included) calculated without using relevance scores from TES; Column headers represent those calculated by using relevance scores from TES.

	0-10%	10%-15%	15%-25%	25%-50%	50%-75%	75%-100%
0-10%	54	0	2	0	0	1
10%-15%	6	0	0	0	0	0
15%-25%	1	2	0	0	0	0
25%-50%	0	2	4	4	0	0
50%-75%	0	0	1	1	2	0
75%-100%	1	0	0	5	3	16

The red highlighted box shows the number of deletions from the MSCI ACWI IMI Blockchain Economy Index if relevance scores from TES are used and the relevance score threshold of 25% is used.

The green highlighted box shows the number of securities which will not be deleted from the index if relevance scores from TES are used but the relevance score threshold is relaxed to 15%.

Appendix I



MSCI Thematic Exposure Standard (TES) enhancement and MSCI Thematic Indexes

MORE DIVERSIFIED INDEXES, GREATER RS CONSISTENCY

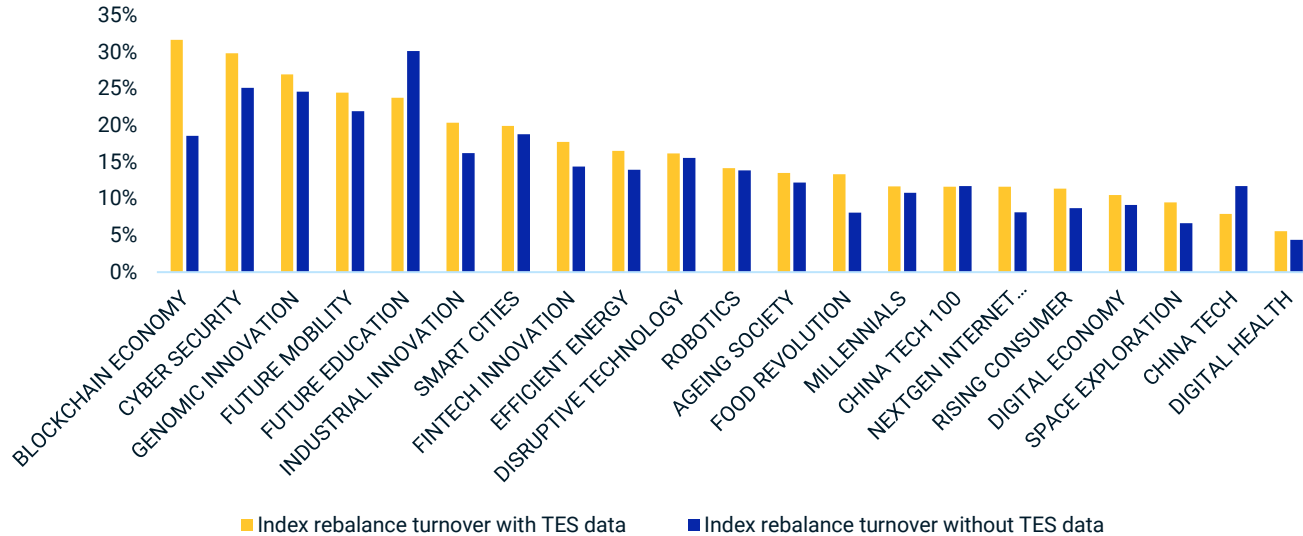
MSCI Thematic Exposure Standard (TES) enhancement likely to lead to more diversified Thematic Indexes in May 2022 SAIR

- The [upcoming enhancement](#) for the MSCI Thematic Exposure Standard will see relevance scores will be generated for a global universe of 90,000+ equity securities*, a common universe and source for all relevance score calculation.
- The use of this common universe for relevance score calculation (instead of individual thematic index parent universes) will likely lead to **changes in RS values and hence changes in index constituents**.
- Recall the RS calculation is dependent on the calculation universe via the (1) SIC Code selection (2) Discount Factor calculation.
- In general, there will likely be a net increase in constituents for thematic indexes. Some companies will have higher scores and others will now have non-zero RS scores.
- However, the MSCI ACWI IMI Blockchain Economy Index has net deletions in transition simulations due to Discount Factor changes. To mitigate this impact, MSCI proposes to relax the relevance score selection threshold to 15% from 25%, effective May 2022 SAIR, as discussed previously in this document.
- The next slide shows the impact on MSCI Thematic Indexes of using the MSCI Thematic Exposure Standard as the source for all relevance core calculation.

*as of March 2022

Use of TES as data source for thematic indexes leads to index turnover comparable to that without the use of TES data in the Nov 2021 SAIR

This chart compares the turnover (t/o) of thematic indexes with and without the use of TES data for the Nov 2021 SAIR



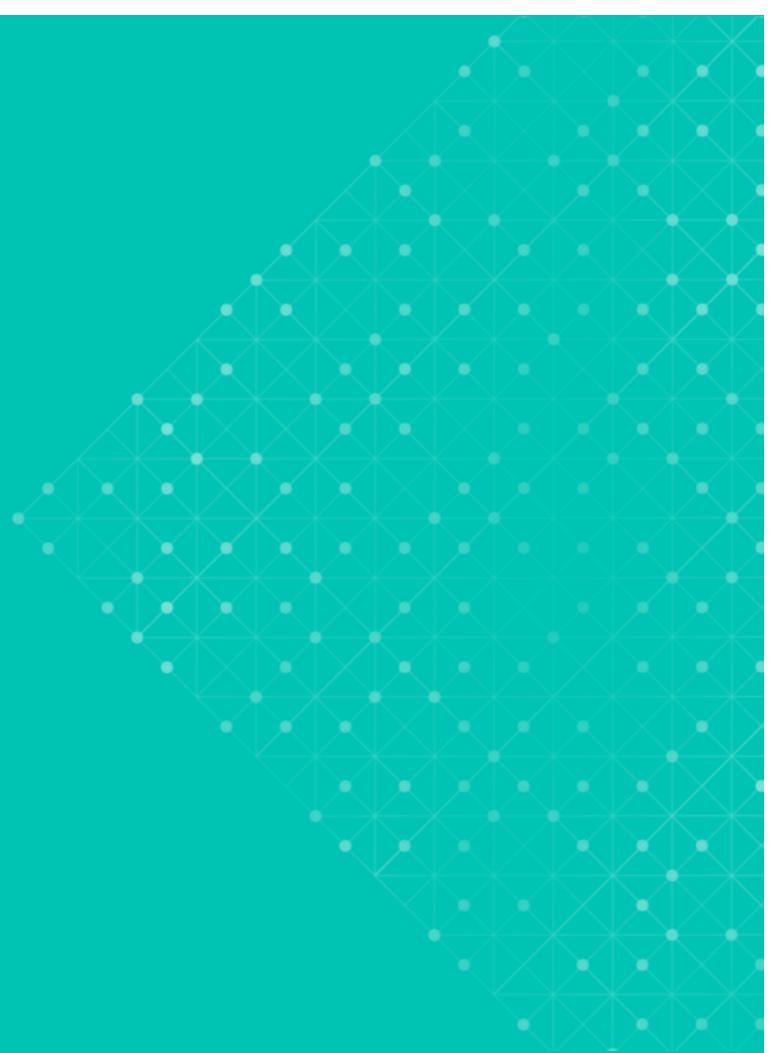
*Index rebalance t/o with TES data is calculated as the one-way turnover between a thematic index rebalanced using TES relevance scores in the Nov 2021 SAIR and the thematic index rebalanced in May 2021 without the use of TES relevance scores.

Index rebalance t/o without TES data is calculated as the one-way turnover between thematic indexes rebalanced in Nov 2021 and May 28, 2021; both without the use of TES relevance scores



Appendix II

IN-SCOPE INDEXES



Indexes in scope of this consultation

MSCI Thematic Indexes	
MSCI ACWI IMI Ageing Society Opportunities	MSCI ACWI IMI Food Revolution
MSCI ACWI IMI Autonomous Technology & Industrial Innovation	MSCI ACWI IMI Future Education
MSCI ACWI IMI Blockchain Economy	MSCI ACWI IMI Future Mobility
MSCI China Tech 100	MSCI ACWI IMI Genomic Innovation
MSCI ACWI IMI Cybersecurity	MSCI ACWI IMI Millennials
MSCI ACWI IMI Digital Economy	MSCI ACWI IMI Next Generation Internet Innovation
MSCI ACWI IMI Digital Health	MSCI ACWI Rising Consumer Select
MSCI ACWI IMI Disruptive Technology	MSCI ACWI IMI Robotics
MSCI ACWI IMI Efficient Energy	MSCI ACWI IMI Smart Cities
MSCI ACWI IMI Fintech Innovation	MSCI ACWI IMI Space Exploration

Indexes in scope of this consultation (2)

MSCI Thematic Indexes		
MSCI China All Shares IMI Ageing Society Opportunities	MSCI China A Onshore IMI Ageing Society Opportunities	MSCI China A Onshore Tech 100
MSCI China All Shares IMI Digital Economy	MSCI China A Onshore IMI Digital Economy	MSCI China A Onshore IMI Tech
MSCI China All Shares IMI Disruptive Technology	MSCI China A Onshore IMI Disruptive Technology	MSCI China A International Tech 100
MSCI China All Shares IMI Efficient Energy	MSCI China A Onshore IMI Efficient Energy	MSCI China All Shares IMI Tech
MSCI China All Shares IMI Future Mobility	MSCI China A Onshore IMI Future Mobility	
MSCI China All Shares IMI Autonomous Technology & Industrial Innovation	MSCI China A Onshore IMI Autonomous Technology & Industrial Innovation	
MSCI China All Shares IMI Millennials	MSCI China A Onshore IMI Millennials	
MSCI China All Shares IMI Next Generation Internet Innovation	MSCI China A Onshore IMI Next Generation Internet Innovation	
MSCI China All Shares IMI Robotics	MSCI China A Onshore IMI Robotics	
MSCI China All Shares IMI Smart Cities	MSCI China A Onshore IMI Smart Cities	

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