

MSCI ACWI IMI Autonomous Technology & Industrial Innovation Index

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1 Introduction

The MSCI ACWI IMI Autonomous Technology & Industrial Innovation Index (the 'Index'), developed in collaboration with ARK Invest, aims to represent the performance of a set of companies associated with the development of new products and services as a result of technological innovation in industrial automation, manufacturing, transportation, energy usage, energy storage, energy production as well as in artificial intelligence and machine learning.

2 Constructing the Index

The Index is constructed by selecting stocks from a 'Parent Index'¹ based on rules explained in the following sections.

The Index selects companies which are assessed to have high exposure to business activities such as –

- Vehicle Automation
- Robotics
- Batteries
- 3D Printing
- Smart Infrastructure
- Alternate Energy Sources
- Innovative Materials
- Space Exploration
- Machine Learning & AI

MSCI may seek input from ARK Invest on the ongoing evolution of the themes underlying the Index. However, such input is advisory only in nature. MSCI alone decides whether to use such input at all or to what extent. Receipt of such input, like any other feedback on MSCI indexes, may or may not lead to a change to the index or index methodology.

2.1 The set of relevant words and phrases² used for constituent selection

MSCI uses a broad set of relevant words and phrases derived from the Index objective which are important to describing the products and services of companies focused on industrial innovation, manufacturing, transportation, energy usage, energy storage, energy production as well as in artificial intelligence and machine learning.

¹ Please refer to Appendix 1 for the methodology of the Parent Index. Use of some indexes as Parent Indexes may result in a low number of constituents, which may affect replicability

² For more details on the steps followed to generate the set of relevant words and phrases, please refer to <https://www.msci.com/www/research-paper/indexing-change-understanding/01647260939>

2.2 Company level data used for assessing company exposure

The following data is used at the company level:

- Business segment information from company annual reports and vendor data sources: business segment names, assigned SIC codes³ and related revenue.
- An English language summary description of the company's business activities from public sources is used.

2.3 Eligible universe

All stocks from the Parent Index which satisfy any of the following criteria are selected for the eligible universe.

2.3.1 Selection on business segments

Company identified business segment names are compared against the set of relevant words. Companies from the Parent Index which include at least one relevant word in their business segment names are included in the eligible universe.

2.3.2 Selection on company's summary description

The company's summary business description is compared against the set of relevant words. Companies from the Parent Index which include at least two distinct relevant words in their summary description are included in the eligible universe.

2.4 Selected business segments

'Selected business segments' are business segments which include at least one relevant word. These are the business segments based on which stocks are selected in section 2.3.1.

2.5 SIC code selection

Company business segments are mapped to an SIC code. The SIC code selection is a set of all the SIC codes which satisfy the following criteria

- The SIC code is mapped to at least one of the 'selected business segments' as described in section 2.4.

³ Company's business segments are assigned with a specific SIC (Standard Industry Classification) description for products and services, used by official agencies within the US government. These descriptions provide additional information on the nature of the segment.

- The SIC code is assigned to the business segments of at least two different stocks from the eligible universe. SIC code 9999 is not selected.

2.6 Calculating the stock relevance score

A relevance score for all stocks in the eligible universe is calculated. The relevance score for a company is calculated by taking into account the portion of company's revenue which is derived from the selected business segments (as described in section 2.4) filtered via the SIC code selection (as described in section 2.5).

The relevance score is not an explicit measurement or estimate of the proportion of revenue that the company derives from business activities exposed to the theme.

2.6.1 Relevance score discount factor

A stock level relevance score discount factor is calculated by normalizing the cumulative frequency of relevant words in the company's summary description relative to all companies selected on summary business descriptions as described in section 2.3.2.

At company's business segment level, the revenue discount factor is applied on revenue from a 'selected SIC code'. The revenue discount factor is 1 for revenue derived from 'selected business segment'.

2.6.2 Relevance score

Relevance score for stocks in the eligible universe is calculated as follows:

Relevance score = [revenue from the selected business segments (as described in section 2.4) + relevance score discount factor * revenue from the selected SIC code (as described in section 2.5)] / Total company revenue.

2.7 Selected universe

Stocks in the eligible universe that are mapped to the following GICS sub-industries and have a relevance score of 50% or more are included in the selected universe.

No.	GICS Sector	GICS Sub Industries
1	Information Technology	<ul style="list-style-type: none"> IT Consulting & Other Services
2	Industrials	<ul style="list-style-type: none"> Construction Machinery & Heavy Trucks Human Resource & Employment Services Air Freight & Logistics Heavy Electrical Equipment

All other stocks in the eligible universe that have a relevance score of 25% or more are included in the selected universe. Further filtering is applied to these stocks as shown below.

2.7.1 GICS®⁴ sector and sub industry filtering

Stocks which have a relevance score of 25% or more and are mapped to the following GICS sub industries are excluded from the selected universe.

No.	GICS Sector	GICS Sub Industries
1	Energy	<ul style="list-style-type: none"> Oil & Gas Equipment & Services Oil & Gas Refining & Marketing
2	Materials	<ul style="list-style-type: none"> Diversified Chemicals Fertilizers & Agricultural Chemicals Construction Materials Aluminum
3	Industrials	<ul style="list-style-type: none"> Commercial Printing Office Services & Supplies Marine Railroads Marine Ports & Services
4	Consumer Staples	<ul style="list-style-type: none"> Food Distributors Household Products
5	Financials	<ul style="list-style-type: none"> Consumer Finance
6	Information Technology	<ul style="list-style-type: none"> Data Processing & Outsourced Services Electronic Manufacturing Services
7	Utilities	<ul style="list-style-type: none"> Multi-Utilities Independent Power Producers & Energy Traders

⁴ GICS, the global industry classification standard jointly developed by MSCI and S&P Global.

2.8 Weighting scheme

Stocks included in the Index are weighted by the product of relevance score and their float adjusted market capitalization. The weights are then normalized to 100%. Additionally, constituent weights are capped at the issuer level to mitigate concentration risk in the Index. The issuer weight in the Index is capped at 5%.

3 Maintaining the Index

3.1 Semi-Annual Index Review

The index is reviewed on a Semi-Annual basis in May and November to coincide with the May and November Semi-Annual Index Reviews of the Parent Index, and the changes are implemented at the end of May and November. In general, the pro forma index is announced nine business days before the effective date.

During the Semi-Annual Index Review, the eligible universe and selected universe are updated.

In general, MSCI uses the company business segment names, business description and revenue data as of the rebalancing date for the Semi-Annual Index Review.

3.2 Annual Index Review

The set of relevant words (as described in section 2.1) are reviewed by MSCI during the May Semi-Annual Index Review.

3.3 Ongoing event-related maintenance

The general treatment of corporate events 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. 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 if the spin-off security is also added to the Parent Index. 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.

The MSCI Corporate Events methodology book is available at:

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

Appendix 1: Constructing the Parent Index

Eligible Universe

The index is constructed from an eligible universe which is a composite of:

- **ACWI IMI Universe:**
ACWI IMI universe is constructed by selecting all equity securities in MSCI ACWI Investable Market Index (IMI) constructed according to the MSCI Global Investable Market Indexes Methodology
- **Extended Universe:**
Extended universe is constructed by selecting all equity securities that are listed on eligible US exchanges⁵ according to the MSCI Global Investable Market Indexes Methodology and meet the following eligibility criteria:

Eligibility criteria

	New Constituents	Existing Constituents	Level
Full Market Capitalization	US IMI Market Size-Segment Cutoff ⁶	US IMI Market Size-Segment Cutoff	Company Level
Free Float Adjusted Market Capitalization	50% of IMI Market Size-Segment Cutoff	50% of IMI Market Size-Segment Cutoff	Security Level
3M or 1M ATVR	30%	10%	Security Level
3M or 1M FoT	100%	95%	Security Level
Foreign Inclusion Factor	>= 0.15, except if FIF adjusted market capitalization >= 2 times the FIF adjusted market capitalization cut-off		Security Level

Further all preferred share classes of US listed securities are deleted from the Extended universe.

⁵ New York Stock Exchange (NYSE), NASDAQ, NYSE American, NYSE Arca, BATS Exchange (BZX)

⁶ For a description of the US IMI Market Size-Segment Cutoff, please refer to the MSCI Global Investable Market Indexes Methodology.

Selected Universe

The selected universe is constructed by combining all securities in the ACWI IMI universe and the Extended universe. For every issuer in the selected universe, the local listed security (listed outside US) is deleted in favor of the US listed security of the same issuer.

Weighting Scheme

All securities included in the Parent Index are weighted in proportion of their free float-adjusted market capitalization.

Date of Data Used for Semi-Annual Index Review

The data cutoff dates for Semi-Annual Index Reviews are:

- Market capitalization, prices and FIF Cutoff Date: nine business days before the end of February, May, August and November.
- ATVRs and Frequency of Trading Cutoff Date: the last business day of March for the May SAIR and the last business day of September for the November SAIR.

Semi-Annual Index Reviews

The Parent Index is reviewed on a Semi-Annual basis in May and November to coincide with the May and November Semi-Annual Index Reviews of the Parent Index, and the changes are implemented at the end of May and November. In general, the pro forma index is announced nine business days before the effective date.

Ongoing Event Related Changes

The following section briefly describes the treatment of common corporate events for the constituents of the Parent Index which are also part of the Extended universe.

The constituents of the Parent Index which are also constituents of the MSCI ACWI IMI index will follow the same corporate event treatment as the standard MSCI Country and World IMI indexes as per the MSCI GIMI Methodology.

Constituents of the Parent Index that are under prolonged suspension are deleted from the Parent Index. If the suspended security is also a constituent of the MSCI ACWI IMI, the security will be deleted from the Parent Index two business days following 50 business days of continuous suspension. Otherwise, the deletion of the suspended security will be implemented two business days following 100 days of continuous suspension. Securities under prolonged suspension are deleted using the

lowest system unit (0.00001 of the security's price currency), also known as the lowest system price.

No new securities will be added (except the securities added to the MSCI ACWI IMI index) to the Parent Index between Index Reviews.

The following sections have been modified since April 2020:

- Ongoing Event Related Changes for the Parent Index in Appendix 1 has been updated to reflect the refinement of the suspension treatment in Corporate events maintenance rules

The following sections have been modified since January 2022:

- Introduction
- The role of experts in constructing the Index
- The set of relevant words and phrases
- Calculating the stock relevance score

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