

# **MSCI CHINA A ONSHORE TECH 100 INDEX**

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## 1 Introduction

The MSCI China A Onshore Tech 100 Index aims to represent the performance of a set of companies associated with the development of new products and services from technology innovations leading to breakthroughs in areas such as internet and digitization, mobility, autonomous technology, industrial automation and digital healthcare.

## 2 Constructing the Index

The MSCI China A Onshore Tech 100 Index is constructed by selecting stocks from MSCI China A Onshore Index (the 'Parent Index') based on rules explained in the following sections.

The Index selects companies which are assessed to have high exposure to the following technology related business activities:

Internet	Mobility	Industrials	Health
<ul style="list-style-type: none"> <li>• Blockchain &amp; P2P</li> <li>• Cloud Computing</li> <li>• Crowdsourcing</li> <li>• Cybersecurity</li> <li>• E-commerce</li> <li>• Fintech</li> <li>• Internet of Things</li> <li>• Mobile &amp; Digital Payments</li> <li>• Robotics and Artificial Intelligence</li> <li>• Social Media</li> </ul>	<ul style="list-style-type: none"> <li>• Batteries</li> <li>• High speed transportation</li> <li>• Sharing Economy</li> <li>• Smart Mobility</li> <li>• Vehicular Automation</li> </ul>	<ul style="list-style-type: none"> <li>• 3D Printing</li> <li>• Alternate Energy Sources</li> <li>• Innovative Materials</li> <li>• Smart Infrastructure</li> <li>• Space Exploration</li> </ul>	<ul style="list-style-type: none"> <li>• Automated Diagnostics</li> <li>• Bioinformatics</li> <li>• Clinical Lab Automation</li> <li>• Healthcare Infotech</li> <li>• Medical Robotics</li> <li>• Telemedicine</li> <li>• Medical Device/ Instruments/ Materials</li> </ul>

MSCI may seek input from outside market experts 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 phrases<sup>1</sup> used for constituent selection

MSCI uses a broad set of relevant words and phrases derived from the index objective which are important to describe the products and services of companies which are accelerating the transformation of economy and businesses through innovation in IT & communications, payments, transportation, energy, manufacturing and healthcare.

<sup>1</sup> 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 codes<sup>2</sup> and related revenue
- English language summary description of the company's business activities from public sources

## 2.3 Combined universe

All stocks from the MSCI China All Shares Investable Market Index (IMI) Index, MSCI China A Onshore Investable Market Index (IMI) Index and MSCI ACWI Investable Market Index (IMI)<sup>3</sup> which satisfy any of the following criteria are selected in the combined universe.

### 2.3.1 Selection on business segments

Company identified business segment names are compared against the set of relevant words. Companies which include at least one relevant word in their business segment names are included in the combined 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 which include at least two distinct relevant words in their summary description are included in the combined 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.

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<sup>2</sup> Companies' business segments are assigned with a specific Standard Industry Classification (SIC) description for products and services, used by official agencies within the US government. These descriptions provide additional information on the nature of the segment.

<sup>3</sup> This universe is used in order to expand the pool of business segment and business description information.

## 2.5 SIC code selection

Company business segments are mapped to a 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.
- The SIC code is assigned to the business segments of at least two different stocks from the combined universe. The SIC code 9999 is not selected.

## 2.6 Calculating the stock relevance score

A relevance score for all stocks in the combined 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) and business segments mapped to any SIC Code selected in the SIC Code selection step (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 a company’s business segment level, the revenue discount factor is applied on revenue from each selected SIC code as described in section 2.5. The revenue discount factor is 1 for revenue derived from ‘selected business segment’.

### 2.6.2 Relevance score

Relevance score for stocks in the combined 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 Eligible universe

All stocks in the Parent Index (as described in section 2) with relevance score of 25% or more are included in the eligible universe.

### 2.7.1 Liquidity Screening

Securities in the bottom quintile of the Parent Index by 12-month average daily trading value (12M ADTV) are excluded from the eligible universe. For the calculation of ADTV, please refer to Appendix 2.

## 2.8 Selected Universe

The top 100 securities ranked by their issuer market capitalization are selected for inclusion in the final Index.

If the number of securities in the eligible universe is below 100, all the securities in the universe are selected for inclusion in the Index

## 2.9 Weighting scheme

Stocks in the selected universe are weighted by the product of relevance score and their free float adjusted market capitalization, which is calculated based on the Domestic Inclusion Factor (DIF) and not subject to Foreign Ownership Limits (FOLs)<sup>4</sup>. The weights are then normalized to sum 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 10%.

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<sup>4</sup> For details please refer to the Global Investable Market Indexes Methodology (Available on <https://www.msci.com/index-methodology>)

## 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 combined universe, 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 annually by MSCI during the May Semi-Annual Index Review. In general, MSCI completes this review of relevant words nine business days before the effective date of 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: Methodology for China A Onshore IMI Tech Index

The MSCI China A Onshore IMI Tech Index is constructed by selecting stocks from the MSCI China A Onshore IMI Index<sup>5</sup>. This index follows the same methodology as described in sections 2.1 – 2.7.

### Selected Universe

Securities from the eligible universe which are in the bottom half by issuer market capitalization and have a relevance score lower than 50% are excluded from the selected universe.

The Index follows the weighting scheme as described in section 2.9.

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<sup>5</sup> For details on the MSCI China A Onshore IMI Index, please refer to the MSCI Global Investable Market Indexes Methodology (Available on <https://www.msci.com/index-methodology>)

## Appendix 2: Calculation of 12-Month Average Daily Traded Value (ADTV)

$$ADTV = ATV / 252$$

Where:

- ADTV = 12-month Average Daily Traded Value
- ATV = 12-month Annualized Traded Value

For details on the calculation of ATV, please refer to the MSCI Global Investable Market Indexes Methodology (<https://www.msci.com/index-methodology>).

**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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