

# **Bloomberg Global Semiconductors Supply Chain Select Index Methodology**

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## Introduction

The Bloomberg Global Semiconductors Supply Chain Select Index is constructed to track the performance of companies in the semiconductors sector. In particular, the Index aims to classify companies into the Manufacturing segment as well as companies involved in High-Growth End-Markets and excludes companies based on certain environmental and social factors. The Index aims to provide increased exposure to the Manufacturing segment, which includes companies that manufacture equipment and components, supply raw materials, or provide foundry services for the semiconductor industry. The Index also retains some exposure to companies engaged in High-Growth End-Markets, which include companies that design chips for the automotive, industrial, and computing end-markets.

This document is intended to be read in conjunction with the [Bloomberg Global Equity Indices Methodology](#); these documents collectively constitute the index methodology for this Index.

## Section 1: Overview

Name	Bloomberg Global Semiconductors Supply Chain Select Index
Base date	2015-04-20
Inception Date	2024-06-13
Rebalance	Quarterly
Publication	Weekdays
Currency	USD
Tickers	BSEMISC (Price Return) BSEMISCT (Total Return) BSEMISCN (Net Return)

## Section 2: Index Eligibility Process

### Parent Universe

To be selected for the Bloomberg Global Semiconductors Supply Chain Select Index, a security must be a member of the Bloomberg World Aggregate universe. Please refer to the Bloomberg Global Equity Index methodology through the link below for additional details.

[Bloomberg Global Equity Indices Methodology](#)

### Theme Eligibility

A security must be classified as belonging to the Semiconductors ecosystem as determined by Bloomberg Intelligence (BI). In addition, a security must belong to the Gold tier of the Semiconductors ecosystem. Bloomberg Index Services Limited (BISL) places securities into a Gold or Silver tier in accordance with the Bloomberg Thematic Protocol.

Please refer to the Bloomberg Thematic Protocol through the link below for additional details on the construction of thematic baskets.

[Bloomberg Thematic Protocol](#)

### Market Capitalization Eligibility

A security must have a minimum issuer free float market capitalization of \$500 million.

### Liquidity Eligibility

A security must have a minimum 90-day average daily value traded of \$3 million.

### Exchange Eligibility

A security must not be listed on Shanghai or Shenzhen Stock Connect exchanges (exchange codes C1 and C2).

## Multiple Classes of Securities

One security per issuer is permitted. If an issuer has multiple securities, then the security currently in the Index will take precedence if it has met all other criteria for eligibility. Otherwise, the security with the highest 90-day average daily value traded is eligible for inclusion in the Index.

## ESG Eligibility

Securities are screened for involvement in certain environmental and/or social activities. Data for the relevant screens are sourced from ESG data provider, Sustainalytics. The table below outlines the various exclusions that are screened as a part of this Index as well as the thresholds that are used to exclude companies. For further details on the ESG factors, please see the ESG disclosures in Appendix A.

If a security/issuer is not included in Sustainalytics research coverage for either the Product Involvement, ESG Risk Ratings, or Controversies datasets from Sustainalytics, then the Index will deem such security/issuer as ineligible for inclusion.

Category	Description	Exclusion Criteria
Resource Use ESG Risk Rating	Measure of a company's usage of raw material inputs and the management of related risks.	Researched companies having high or severe risk associated with their usage or risk management of raw material inputs are excluded from the Index.
Controversial Weapons	Companies involved in the manufacturing of controversial weapons or components or services thereof.	Researched companies that have any involvement in the core weapon system or components and services of the core weapon system, including significant ownership, are excluded from the Index.
Controversial Event Indicator	An indication of isolated or related incidents that pertain to the same ESG issues.	Researched companies with any Category 5 Controversy Rating are excluded from the Index.  Researched companies involved in controversial events, including contractor and supply chain-related controversies, with a high impact (Category 4) pertaining to the following ESG issues are excluded from the Index:  <ul style="list-style-type: none"> <li>- Access to basic services</li> <li>- Accounting and taxation</li> <li>- Bribery and corruption (including contractor and supply chain incidents)</li> <li>- Occupational health and safety (including contractor and supply chain incidents)</li> <li>- Employees - human rights (including contractor and supply chain incidents)</li> <li>- Society - human rights (including contractor and supply chain incidents)</li> <li>- Land use and biodiversity (including contractor and supply chain incidents)</li> </ul>
Oil Sands	Companies that extract oil sands.	Researched companies that have 5% or more revenues from extracting oil sands are excluded from the Index.
Adult Entertainment	Companies involved in the production or distribution of adult entertainment.	Researched companies that have 5% or more revenues from the production or distribution of adult entertainment are excluded from the Index.

## Section 3: Index Construction Process

### Index Selection Process

All securities that satisfy the Index Eligibility Process in Section 2 are eligible for inclusion in the Index. Further, the top 50 securities by issuer free-float market cap are included in the index.

### Index Weighting

The Index is modified market cap weighted such that securities classified to the Manufacturing segment get 70% of the weight in the Index and securities classified to the High Growth End-Markets segment get 30% of the weight in the Index, using data from Bloomberg Intelligence (BI). Then, within each category, the issuers are free-float market cap weighted.

$$W_i = W_g * \frac{FMC_i}{\sum_1^M FMC_i}$$

Where:

$W_i$	Weight of security i
M	Number of Index Members in group g in {Manufacturing, High Growth End-Markets}
$W_g$	Weight assigned to group g in {Manufacturing, High Growth End-Markets}
$FMC_i$	Free float market capitalization of security i

Securities' weights are then capped such that:

- No security's weight shall exceed 10% for the top 3 issuers by issuer free-float market cap
- No security's weight shall exceed 4% for the securities outside of the top 3 by issuer free-float market cap
- No security's weight shall be below 0.25%

Any excess weight from capping is distributed proportionally to all the remaining uncapped securities until all the above conditions are satisfied.

### Index Rebalance and Reconstitution

The Index is reconstituted and rebalanced quarterly in January, April, July, and October.

#### Selection Date

The Index Eligibility Process and Index Selection Process are applied using data as of the 1<sup>st</sup> Friday in January, April, July, and October. ESG Eligibility is applied using data as of the 1<sup>st</sup> Wednesday in the previous month (December, March, June, and September, respectively).

#### Index Share Determination Date

Index Weighting is determined using prices as of the 1<sup>st</sup> Friday in January, April, July, and October.

#### Index Announcement Date

An Index reconstitution and rebalance announcement date shall be the 2<sup>nd</sup> Friday in January, April, July, and October.

#### Index Effective Date

The Index reconstitutions and rebalances go effective after the close of trading on the 3<sup>rd</sup> Friday in January, April, July, and October.

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Selection Date (Eligibility)	1 <sup>st</sup> Friday	X			X			X			X		
Selection Date (ESG Eligibility)	1 <sup>st</sup> Wednesday			X			X			X			X

Selection Date (Weighting)	1 <sup>st</sup> Friday	X			X			X			X		
Announcement Date	2 <sup>nd</sup> Friday	X			X			X			X		
Effective Date	3 <sup>rd</sup> Friday	X			X			X			X		

## Section 4: Index Maintenance

### Index Calculation

Refer to the [Bloomberg Global Equity Indices Methodology](#) for index calculation details.

### Deletion Policy

Index securities are not deleted outside of the Index Rebalance and Reconstitution window except in the case of a delisting.

### Addition Policy

Index securities are not added outside of the Index Reconstitution.

### Replacement Policy

Index securities are not replaced outside of the Index Reconstitution.

### Corporate Actions

Refer to [Bloomberg Global Equity Indices Non-Market Cap Corporate Action Methodology](#) for the treatment of corporate actions.

## Section 5: Risks and Limitations

### Risks

The following is a summary of certain risks associated with the Index but is not meant to be an exhaustive list of all risks associated with the Index. Although the Index is designed to be representative of the markets it is measuring, it may not be representative of every use case. There is also inherent, though transparent, judgment in its construction, as outlined in this Methodology. The Index is designed for general applicability and not to address the individual circumstances and needs of users. BISL does not advise about the usefulness of the Index to a particular circumstance; users are therefore encouraged to seek their own counsel for such matters. This Methodology is subject to change, which may impact its usefulness to users. Although efforts will be made to alert users of any change, every individual user may not be aware of them. Such changes may also significantly impact the usefulness of the Index. BISL may also decide to cease publication of this Index. BISL maintains internal policies regarding user transitions, but no guarantee is given that an adequate alternative is available generally or for a particular use case. Markets for stocks, as with all markets, can be volatile. As the Index is designed to measure this market, it could be materially impacted by market movements, thus significantly affecting the use or usefulness of the Index for some or all users. Also, certain equity markets are less liquid than others – even the most liquid markets may suffer periods of illiquidity. Illiquidity can have an impact on the quality or amount of data available to BISL for calculation and may cause the Index to produce unpredictable results.

### Limitations of the index

Though the Index is designed to be representative of the markets it measures or otherwise aligns with its stated objective, it may not be representative in every case or achieve its stated objective in all instances. It is designed and calculated strictly to follow the rules of this Methodology, and any Index level or other output is limited in its usefulness to such design and calculation.

Markets can be volatile, including those market interests that the Index measures or upon which the Index is dependent to achieve its stated objective. For example, illiquidity can have an impact on the quality or amount of data available to the administrator for calculation and may cause the Index to produce unpredictable or unanticipated results.

In addition, market trends and changes to market structure may render the objective of the Index unachievable or to become impractical to replicate by investors.

In particular, the Index measures global equity markets. As with all equity investing, the Index is exposed to market risk. The value of equities fluctuate with the changes in economic forecasts, interest rate policies established by central banks and perceived geo-

political risk. The Index does not take into account the cost of replication and as a result a tracking portfolio's returns will underperform the Index with all else equal. As the Index is designed to measure those markets, it could be materially impacted by market movements, thus significantly impacting the use or usefulness of the fixings for some or all users.

In addition, certain sub-indices may be designed to measure smaller subsets of the Index such as specific styles, size, and sector. Some of these sub-indices have very few qualifying constituents and may have none for a period of time. During such period, the sub-index will continue to be published at its last value, effectively reporting a 0% return, until new constituents qualify. If no constituents are expected to qualify (due to changes in market structure and other factors), the sub-index may be discontinued. In such an event, this discontinuation will be announced to index users.

BISL relies on external data providers for the provision of ESG data used in the selection, weighting and calculation of the benchmarks. This includes climate models, estimations and sourcing of underlying ESG data used to calculate such scores. BISL places reliance on such external data providers with respect to their ESG data, oversight over the quality of that data, and the maintenance of that data's underlying methodology to ensure its representativeness. BISL does not have control over, or detailed insight into, the reliability of the raw data sourced external providers and their respective calculation models. External providers may restate historical ESG data. External provider ESG data methodologies may furthermore be subject to change. ESG data may not cover the entire universe of eligible constituents for a particular Index - eligible constituents not covered by ESG data may be included in the Indices. The measurement of the benchmark may become unreliable should the ESG data become unavailable or inaccurate.

## Section 6: Benchmark Oversight and Governance

### Benchmark Governance Structure

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

### Index and data reviews

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

### Expert judgement

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

### Conflicts of interest

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

### Restatement policy

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

### Cessation policy

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

## Appendix A: ESG Disclosure

If a security/issuer is not included in Sustainalytics research coverage for either the Product Involvement, ESG Risk Ratings, or Controversies datasets from Sustainalytics, then the Index will deem such security/issuer as ineligible for inclusion.

<b>EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY</b>			
1. Name of the benchmark administrator.		Bloomberg Index Services Limited ("BISL")	
2. Type of benchmark		Equity	
3. Name of the benchmark or family benchmarks.		Bloomberg Global Semiconductors Supply Chain Select Index	
4. Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?		Yes	
<p>5. Where the response to Item 4 is positive, please list below, for each family of benchmarks, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816. Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets. The ESG factors shall be disclosed at an aggregated weighted average value at the level of the family of benchmarks.</p>			
a) List of environmental factors considered:		See below.	
b) List of social factors considered:		See below.	
c) List of governance factors considered:		See below.	
<p>6. Where the response to Item 4 is positive, please list below, for each benchmark, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816, depending on the relevant underlying asset concerned. Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets. The ESG factors shall not be disclosed for each constituent of the benchmark, but shall be disclosed at an aggregated weighted average value of the benchmark. Alternatively, all of this information may be provided in the form of a hyperlink to a website of the benchmark administrator included in this explanation. The information on the website shall be easily available and accessible. Benchmark administrators shall ensure that information published on their website remains available for five years.</p>			
List of social factors considered:	Resource Use ESG Risk Rating	Exclusion	<p>The ESG Risk Ratings measure the degree to which a company's economic value is at risk driven by ESG factors or, more technically speaking, the magnitude of a company's unmanaged ESG risks. For each company, unmanaged risk is measured by evaluating a set of material ESG issues based on both the company's exposure to and management of those issues. The resulting unmanaged risk for each issue is then summed to provide one score that represents the company's overall ESG risk.</p> <p>Based on their quantitative scores, companies are grouped into one of five risk categories (negligible, low, medium, high, severe). These risk categories are absolute, meaning that a 'high risk' assessment reflects a comparable degree of unmanaged ESG risk across all subindustries covered.</p> <p>Researched companies having high or severe risk associated with their usage risk management of raw material inputs are excluded from the Index.</p> <p>Please see the <a href="#">here</a> for further information on the ESG Risk Rating Methodology.</p>
	Controversial Weapons	Exclusion	<p>Researched companies that have any involvement in the core weapon system or components and services of the core weapon system, including significant ownership, are excluded from the Index.</p> <p>Please see <a href="#">here</a> for further information on the Controversial Weapons methodology.</p>
	Controversial Event Indicator	Exclusion	<p>The Controversy Rating reflects a company's level of involvement in issues and how it manages these issues. A controversy as an event or aggregation</p>



			<p>of events relating to an ESG topic. When incidents are found in the news, they are tagged and grouped together before being rated on a scale from 1 to 5. This provides investors with a simple and straightforward way of assessing the severity of a company's exposure to controversies. The highest Event rating under a controversy indicator automatically becomes the Controversy Rating. The methodology takes into account incidents and events, analyzing the severity by taking into account impact, risk and management of the issues.</p> <p>Researched companies involved in controversial events, including contractor and supply chain-related controversies, with a high impact (Category 4) pertaining to the following ESG issues are excluded from the Index:</p> <ul style="list-style-type: none"> <li>- Access to basic services</li> <li>- Accounting and taxation</li> <li>- Bribery and corruption (including contractor and supply chain incidents)</li> <li>- Occupational health and safety (including contractor and supply chain incidents)</li> <li>- Employees - human rights (including contractor and supply chain incidents)</li> <li>- Society - human rights (including contractor and supply chain incidents)</li> <li>- Land use and biodiversity (including contractor and supply chain incidents)</li> </ul> <p>Please see <a href="#">here</a> for further information on the Controversies Methodology.</p>
	Oil Sands	Exclusion	<p>Researched companies that have 5% or more revenues from extracting oil sands are excluded from the Index.</p> <p>Please see <a href="#">here</a> for further information.</p>
	Adult Entertainment	Exclusion	<p>Researched companies that have 5% or more revenues from the production or distribution of adult entertainment are excluded from the Index.</p> <p>Please see <a href="#">here</a> for further information.</p>
<b>7. Data and standards used.</b>			
<p>a) Data input.</p> <p><i>(i) Describe whether the data are reported, modelled or, sourced internally or externally.</i></p> <p><i>(ii) Where the data are reported, modelled or sourced externally, please name the third party data provider.</i></p>			<p>All ESG data for the benchmarks is sourced externally from Sustainalytics (reported and modelled from Product Involvement, Controversy, and Risk Ratings data libraries).</p> <ul style="list-style-type: none"> <li>- For Product Involvement Screens, please see <a href="#">here</a> for further information.</li> <li>- For ESG Ratings, please see the <a href="#">here</a> for further information.</li> <li>- For Controversial Weapons please see <a href="#">here</a> for further information.</li> <li>- For Controversies Rating, please see <a href="#">here</a> for further information.</li> </ul> <p>Please refer to <a href="#">this</a> link for additional details on Sustainalytics.</p>
<p>b) Verification of data and guaranteeing the quality of those data.</p> <p><i>Describe how data are verified and how the quality of those data is ensured.</i></p>			<p>Sustainalytics has processes in place to validate the quality and reliability of the data.</p> <ul style="list-style-type: none"> <li>• Universe Management             <ul style="list-style-type: none"> <li>o Centralized universe definitions and processes for rebalancing;</li> <li>o Quarterly rebalances of Sustainalytics' standard coverage and compliance universes;</li> <li>o Clear, transparent and consistent approach to the allocation of research versus coverage entities.</li> </ul> </li> <li>• Company Research             <ul style="list-style-type: none"> <li>o Continuous improvement and maintenance of quality and research standards;</li> <li>o Feedback that is received from Companies in Sustainalytics' Coverage Universe and that are a part of Sustainalytics ESG Risk Ratings and controversy research is taken into consideration, and whenever relevant included;</li> <li>o Quality reviews of ESG assessments before publication; ○ Reviewing controversy ratings by the Events Oversight Committee - focus on controversy level changes to and from level 4 and 5.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• Data and deliverable management                             <ul style="list-style-type: none"> <li>○ Quality and reliability of Sustainalytics Covered Company and identifier data through automated quality assurance;</li> <li>○ Quality and reliability of Sustainalytics proprietary (i.e. research) data through automated quality assurance, prior to publication;</li> <li>○ Quality and reliability of standard deliverables through end-of-gate quality assurance process.</li> <li>○ Quality and reliability of custom client deliverables through end-of-gate quality assurance processes (automated and manual);</li> <li>○ Monitoring and investigating ESG score fluctuations and their root causes using automated tools.</li> </ul> </li> <li>• Update cycle                             <ul style="list-style-type: none"> <li>○ Sustainalytics aims for annual updates of management indicators for the Covered Companies;</li> <li>○ Continuous updates are made as incidents occur and feed into updates of event indicators, which is not disclosure driven;</li> <li>○ Annual updates to the rating framework (selection of material ESG issues, weighting of indicators).</li> </ul> </li> </ul>
<p>c) Reference standards  <i>Describe the international standards used in the benchmark methodology.</i></p>	<p><b>Controversial Weapons</b>                      Controversial Weapons include Non-proliferation Treaty (1968), Biological and Toxin Weapons Convention (1972), Chemical Weapons Convention (1997), Anti-Personnel Mine Ban Convention (1999), Convention on Cluster Munitions (2008), United Nations Convention on Certain Conventional Weapons (1980), and Convention on the Physical Protection of Nuclear Material (1980).</p>
<p>Date on which information has been last updated and reason for the update:</p>	<p>September 2024, enhancing language to specify the consideration of contractor and supply chain events in the Controversial Event Indicator.</p>

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