

# **Bloomberg Artificial Intelligence Index Methodology**

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## Introduction

The Bloomberg Artificial Intelligence Index is constructed to track the performance of companies that develop, facilitate, or utilize artificial intelligence (AI) solutions, such as deep learning, machine learning, natural language processing, and image and speech recognition using data from Bloomberg Intelligence (BI). Exposures include to areas such as software, services, hardware, semiconductors, and media.

## Section 1: Overview

Name	Bloomberg Artificial Intelligence Index
Base Date	2015-04-20
Inception Date	2023-09-20
Base Value	1000.00
Rebalance	Quarterly
Publication	Weekdays
Indices	See Appendix II: Index tickers and names

## Section 2: Index Eligibility Process

### Parent Universe

To be selected for the Bloomberg Artificial Intelligence 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](#)

### Thematic Eligibility

A security must be classified as belonging to the Artificial Intelligence ecosystem as determined by Bloomberg Intelligence (BI). In addition, 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 free float market capitalization of \$100 million.

### Liquidity Eligibility

A security must have a minimum 90-day average daily value traded of \$1 million.

### 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.

## 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.

Eligible securities are sorted by Gold, then Silver (with Gold ranking higher). The securities are then ranked by their 'Revenue Assessment' (in ascending order), and then finally by company free float market capitalization (in descending order).

All Gold securities from the sorted list are selected for inclusion.

However, if the number of securities selected is less than 20, then the following securities in the sorted list are selected for inclusion until the Index has a minimum of 20 securities.

## Index Weighting

The Index is modified market cap weighted. The initial weights,  $W_i$ , are set, as shown below, according to the issuer free float market capitalization.

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

Where:

$W_i$	Weight of security i
M	Number of Index Members
$FMC_i$	Issuer Free Float Market Capitalization of security i

Securities' weights are then capped such that:

- No security's weight shall exceed 8%
- The top 5 securities by issuer free float market capitalization may have a weight exceeding 4%
- Securities outside of the top 5 by issuer free float market capitalization with weight greater than 4% have their weight capped at 4%

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 is applied using data as of the 1<sup>st</sup> Friday in January, April, July, and October.

### Index Share Determination Date

Float Shares are determined using Shares Outstanding and Free Float as of 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 (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 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 geopolitical 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.

## Section 6: Benchmark Oversight and Governance

### Benchmark governance, audit and review structure

BISL uses three primary committees to provide overall governance and oversight of its benchmark administration activities:

- The Product, Risk & Operations Committee (“**PROC**”) is responsible for the first line of control over the creation, design, production and dissemination of benchmarks administered by BISL.
- The oversight function is provided by Bloomberg’s Benchmark Oversight Committee (“**BOC**”). The BOC is independent of the PROC and is responsible for the review and challenge of the BISL Board of Directors and the PROC regarding relevant aspects of the provision of Benchmarks by BISL, as set out in the UK BMR.
- The Risk Committee (“**RiskCo**”) advises the Board, the PROC and the BOC on the Company’s overall risk appetite, tolerance and strategy and oversees the Company’s risk exposure and risk strategy

BISL also organises Index Advisory Council (“IAC”) meetings for certain families of indices. The IAC meetings afford a cross-section of various market participants the opportunity to offer feedback regarding Bloomberg’s indices and related services which, in turn, will enable Bloomberg to improve the indices and related services. Each IAC meeting is for advisory purposes only and has no decision-making power or function. Bloomberg will decide unilaterally whether, and how, to respond to any feedback, comment, or recommendation that results from an IAC meeting.

### Index and data reviews

BISL reviews the Methodology on a periodic basis, and at least annually, to determine whether it continues to:

- (i) be robust and reliable;
- (ii) have clear rules, including regarding discretion;
- (iii) be rigorous, continuous and capable of validation;
- (iv) be resilient and ensures the Index can be calculated in the widest range of possible circumstances, without compromising its integrity; and
- (v) be traceable and verifiable.

In doing so, BISL will assess whether the Index continues to represent the market that it is intended to measure. More frequent reviews may result from extreme market events and/or material changes to the underlying market. Non-exhaustive examples of extreme market events include trading events such as trading interruptions or unexpected market closures, resulting in unusual market illiquidity or market volatility; exchange closures, government interventions, a pandemic or a natural catastrophe resulting in exceptional periods of stress.

Criteria for data inputs include reliable delivery and active underlying markets. Whether an applicable market is active depends on whether there are sufficient numbers of transactions (or other indications of price, such as indicative quotes) in the applicable constituents (or similar underlying constituent elements) that a price (or other value, as applicable) may be supplied for such constituent(s).

Other than as set forth in this Methodology (read in conjunction with the [Bloomberg Global Equity Index Methodology](#)), there are no minimum liquidity requirement for Index constituents and/or minimum requirements or standards for the quantity or quality of the input data. The review will be conducted by product managers of the Index in connection with the periodic rebalancing of the Index or as otherwise appropriate. Please see the [Bloomberg Global Equity Index Methodology](#) for further information on calculation of the Index in the event of market disruption.

Any resulting change to this Methodology will be subject to the review of the PROC under the oversight of the BOC, each of which committees shall be provided all relevant information and materials it requests relating to the change. Details regarding the PROC and BOC are described above. Any relevant changes will be reflected and tracked in updated versions of this Methodology.

BISL will consult with users of the Index on changes to the Methodology and seek user input. The stakeholder engagement will set forth the rationale for any proposed changes (including whether the representativeness of the Index or its appropriateness as a reference for financial instruments or contracts would be at risk if the proposed changes are not made), the key elements of the Methodology that would, in BISL’s view, be affected by the proposed change, as well as the timeframe and process for responses. BISL will provide at least two weeks’ notice prior to any change going into effect. In the event of exigent market

circumstances or if required by law or regulation, this period may be shorter. Subject to requests for confidentiality, stakeholder feedback and BISL's responses will be made accessible upon request.

## Cessation

BISL may from time to time terminate benchmarks ("Discontinued Benchmarks") for a number of reasons including:

- Changes in market structure,
- Lack of requisite data
- Poor quality of data
- Insufficient number of constituents eligible for inclusion for a given methodology
- Insufficient usage
- Superseded by another BISL index
- Other regulatory or practical concerns.

The process for terminating such Discontinued Benchmarks is as follows:

- For benchmarks that have any known usage, the PROC will review proposed terminations, taking into account the reasons for termination, the impact on users (if any), the availability of alternative products and other such factors.
- The PROC at its discretion may decide to consult with stakeholders regarding a proposed consultation, taking into account the usage identified and potential impact to stakeholders and/or market.
- If termination is approved, users will be provided as much prior notice as is reasonable under the circumstances, typically 90 days.
- In the event there is little or no known usage identified or scenarios beyond the control of BISL including material changes to the underlying market, lack of access to required data, regulatory change or political events the Discontinued Benchmarks may be terminated with less (or no) notice, as deemed appropriate by the PROC.
- In the event a Discontinued Benchmark is widely-used or is otherwise determined by BISL to be an important benchmark without reasonable substitutes, the notice period may be extended, as warranted.

For benchmarks that do not have any known usage, PROC approval is not required.

Any advance notice period is subject to BISL being reasonably able to continue administering and calculating such benchmark during such period (for example, BISL has access to requisite data on commercially reasonable terms, is not subject to any litigation or other claims, has adequate internal resources and capabilities, etc.).

## Expert judgement

The benchmarks methodologies are rules-based, and their construction is designed to consistently produce values without the exercise of expert judgment or discretion under the standard methodology, in day-to-day index calculation. Nevertheless, BISL product owners may use expert judgment or discretion in certain limited circumstances, with regards to the following:

- Extraordinary circumstances (such as a fundamental shift in the economic or regulatory structure of the underlying market) during a market emergency;
- A market disruption event; or
- Interruptions, issues and non-availability of data including input or non-input (e.g. ESG) data.

Discretion refers to the right of BISL to make a determination in calculating a Benchmark with respect to its methodology. Expert judgement refers to the exercise of discretion with respect to the use of Input Data. Instances of discretion or expert judgement may include BISL making a decision to modify, derive or substitute input or non-input (e.g. ESG) data points according to what it considers suitable in a particular situation, in order to maintain benchmark constituents as set out in the methodology and ensure the benchmark continues to accurately represent the objective of the benchmark as best as possible.

Discretion may be applied to (but not limited to) areas of benchmark construction or calculation and may include actions such as:

- Delaying or estimating the value of input or non-input data
- Adjusting the benchmark methodology
- Excluding or amending a constituent, input or non-input data
- Maintaining logical Benchmark membership by reviewing constituent characteristics such as country assignment, float factors, foreign ownership limits, or corporate action applications

**When expert judgment or discretion is required, BISL aims to be consistent in its application, with instances of discretion subject to review by members of BISL. In certain circumstances, exercises of expert judgment or discretion are reviewed by senior members of BISL management and Bloomberg Compliance teams, and are reported to the PROC. BISL maintains and enforces policies and procedures to prevent conflicts of interest from inappropriately influencing index construction, production, and distribution, including the use of expert judgment or discretion. Data providers and data extrapolation**

The Index is rules-based, and its construction is designed to consistently produce Index levels without the exercise of discretion. The Index is produced without the interpolation or extrapolation of input data.

In addition, BISL seeks to avoid contributions of input data that may be subject to the discretion of the source of such data and instead seeks to use input data that is readily available and/or distributed for a number of non-index or benchmark creation purposes. Accordingly, the index requires no 'contributors' to produce and no codes of conduct with any such sources are required.

### Conflicts of interest

The Index confers on BISL discretion in making certain determinations, calculations and corrections from time to time. In making those determinations, calculations and corrections, BISL has no obligation to take the needs of any product investor or any other party into consideration. BISL is committed to avoiding and, where necessary, managing actual or potential conflicts of interest in the BISL decision-making process and has established a Conflicts of Interest Policy to minimize or resolve actual or potential conflicts of interest. BISL does not create, trade or market products.

### Restatement policy

BISL strives to provide accurate calculation of its indices. However, to the extent a material error in index levels is uncovered following publication and dissemination, a public notification will be made alerting of such error and the expected date of a revised publication, if warranted.

An error to an equity Index in excess of 3 basis point over one day will automatically be reviewed for restatement. If the Index in error is a Primary Index (listed below) and has occurred in the last 2 business days, a restatement will be made for all impacted indices. Errors occurring beyond the last 2 business days will be evaluated on a case-by-case basis.

Real-time indices are not considered for restatement, all real-time dissemination is considered indicative.

Primary Indices:

- Bloomberg US Large Cap Equity Index (B500T)
- Bloomberg Developed Markets Large & Mid Cap Index (DMTR)
- Bloomberg Emerging Markets Large & Mid Cap Index (EMTR)

If the error affects a non-Primary Index the following factors will be reviewed to determine whether to restate. Not all conditions need to be present to warrant a restatement, and certain factors may be more determinative than others depending on the circumstances of the given error.

- The relative importance of the data field impacted by the error;
- When the error occurred and when it was discovered;
- The number of indices and sub-indices affected;
- Whether the impacted indices are linked to tradable products;
- The magnitude of the error;
- The burden of restatement on client re-processing relative to the impact of the error;
- The impact of the restatement on analytical tools.



Best efforts will be made to address errors in non-Primary indices as outlined in the table below:

Event	Action (If discovered within 2 business days)
<b>Missed corporate action</b>	
Spin-off	Restate indices and reissue file
Regular cash dividend	
Special cash dividend	
Stock split	
Stock dividend, bonus	
Mergers & acquisition	Update made the next business day; no restatement and no reissuance of files
Delisting	
Reclassification	
Change in listing	
IPO incorrectly added	Update made at next rebalance
<b>Rebalance</b>	
Incorrect add	Unless the error is discovered during pro-forma period, update will be made at next rebalance
Incorrect removal	
Share changes	

## Appendix I: Index Tickers and Names

<b>Ticker</b>	<b>Name</b>	<b>Currency</b>	<b>Region</b>	<b>Index Type</b>
<b>BDMAI</b>	Bloomberg Developed Markets Artificial Intelligence Price Return Index (EUR)	EUR	Developed Markets	Price Return
<b>BDMAIT</b>	Bloomberg Developed Markets Artificial Intelligence Total Return Index (EUR)	EUR	Developed Markets	Total Return
<b>BDMAIN</b>	Bloomberg Developed Markets Artificial Intelligence Net Return Index (EUR)	EUR	Developed Markets	Net Total Return

## Appendix II: ESG Disclosure

<b>EXPLANATION OF HOW ESG FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY</b>	
<b>Item 1.</b> Name of the benchmark administrator.	Bloomberg Index Services Limited ("BISL")
<b>Item 2.</b> Type of benchmark or family of benchmarks. <i>Choose the relevant underlying asset from the list provided in Annex II to Commission Delegated Regulation (EU)2020/1816.</i>	Equity
<b>Item 3.</b> Name of the benchmark or family of benchmarks.	Bloomberg Artificial Intelligence Index
<b>Item 4.</b> Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?	No
<p><b>Item 5.</b> 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.</p> <p>Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets.</p> <p>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:	Not applicable
(b) List of social factors considered:	Not applicable
(c) List of governance factors considered	Not applicable
<p><b>Item 6.</b> 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.</p> <p>Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets.</p> <p>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.</p> <p>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>	
(a) List of environmental factors considered:	As above
(b) List of social factors considered:	As above
(c) List of governance factors considered:	As above
<b>Item 7.</b> Data and standards used	
(a) Data input. <i>(i) Describe whether the data are reported, modelled or sourced internally or externally.</i> <i>(ii) Where the data are reported, modelled or sourced externally, please name the third party data provider.</i>	Not Applicable
(b) Verification and quality of data. <i>Describe how data are verified and how the quality of those data is ensured.</i>	Not Applicable
(c) Reference standards <i>Describe the international standards used in the benchmark methodology.</i>	N/A
<b>Date on which information has been last updated and reason for the update:</b>	September 2023

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