

Bloomberg Transatlantic Tech Titans 2023 Index Methodology

April 2023

Table of Contents

Introduction.....	3
Section 1: Overview	3
Section 2: Eligibility	3
Equity Universe	3
Sectors	4
Section 3: Selection.....	4
Section 3: Index Calculation.....	4
Section 4: Weighting.....	4
Section 5: Maintenance	4
Index Review	5
Quarterly Index Rebalancing.....	5
Corporate Actions	5
Spin-off.....	5
IPO.....	5
Replacement Policy	5
Section 7: Governance, risks and limitations	6
Risks	6
Limitations of the index.....	6
Section 8: Benchmark oversight and governance	6
Benchmark governance, audit and review structure	6
Index and data reviews	7
Expert judgement.....	8
Data providers and data extrapolation	8
Conflicts of interest.....	8
Restatement policy.....	9
Methodology Book Changes	10
Accessing the Data.....	11
Disclaimer.....	12

Introduction

The Bloomberg Transatlantic Tech Titans 2023 indices are designed to represent a fixed selection of five large US and five large European companies exhibiting strong exposure to the technology sector as of April 2023.

The Bloomberg Transatlantic Tech Titans 2023 Decrement 50 Point Index and the Bloomberg Transatlantic Tech Titans 2023 Decrement 5% Index are designed to represent the performance of the Bloomberg Transatlantic Tech Titans 2023 Index from which a predetermined fee is withdrawn on daily basis. The predetermined fee is in the form of index points or index percentage deducted from the underlying Total Return Index and Net Return Index respectively.

Section 1: Overview

Name	Bloomberg Transatlantic Tech Titans 2023 Index			Bloomberg Transatlantic Tech Titans 2023 Decrement Index	
Ticker	BTTECHP Index	BTTECHT Index	BTTECHN Index	BTTEKPE Index	BTTEKPT Index
Return Type	Price Return	Total Return	Net Return	Decrement 5%	Decrement 50 Points
Currency	EURO				
Inception Date	April 2023				
Base Date	March 30, 2015				
Publication	Weekdays				

The below table shows the parameters applied to calculate the Bloomberg Transatlantic Tech Titans 2023 Decrement 50 Point Index:

Decrement Index Ticker	Decrement Index Name	Decrement Type	Decrement Point	Index Base Date	Index Base Value	Underlying Index Ticker	Underlying Index	Underlying Index Currency	Day Count Convention
BTTEKPT Index	Bloomberg Transatlantic Tech Titans 2023 Decrement 50 Points Index	Fixed Point	50	30-Mar15		BTTECHT Index	Bloomberg Transatlantic Tech Titans 2023 Total Return Index (EUR)	EURO	365
BTTEKPE Index	Bloomberg Transatlantic Tech Titans 2023 Decrement 5% Index	Percentage	5%	30-Mar15	1000	BTTECHN Index	Bloomberg Transatlantic Tech Titans 2023 Net Return Index (EUR)	EURO	365

Section 2: Eligibility

Equity Universe

In order to be eligible for the Bloomberg Transatlantic Tech Titans 2023 Indices, a security must be either in the Bloomberg United States Large Cap Index or the Bloomberg Eurozone Developed Markets Large Cap¹ Index as of April 2023.

¹ As per the Bloomberg Global Equity Index methodology, the large cap segment is designed to reflect the top 70 percentile of the cumulative float market capitalization of the eligible country equity universe.

Sectors

The Bloomberg Transatlantic Tech Titans 2023 Indices is composed of companies with strong technology exposure. To be part of the Index, companies must be classified in any of the following sub-Industries as per the Bloomberg Industry Classification System (BICS):

- Semiconductors
- Software
- Technology Hardware
- **Internet Media & Services**
- E-commerce

Section 3: Selection

To be eligible to be an Index member, a company must be exposed to the sub-industries described above and be among the most recognizable in the world based on their size (measured as market capitalization) as of August 2022. The Index selects five companies classified in the United States and five classified in a country part of the Eurozone Developed Markets region as per the [Bloomberg Global Equity Index methodology](#).

Based on the eligible universes and the selection criterias above, the selected companies are as follows:

Company Name	Ticker	Region	Sector
PROSUS NV	PRX NA Equity	Eurozone	Internet Media & Services
INFINEON TECHNOLOGIES AG	IFX GY Equity	Eurozone	Semiconductors
STMICROELECTRONICS NV	STMPA FP Equity	Eurozone	Semiconductors
ASML HOLDING NV	ASML NA Equity	Eurozone	Semiconductors
SAP SE	SAP GY Equity	Eurozone	Software
MICROSOFT CORP	MSFT UW Equity	United States	Software
APPLE INC	AAPL UW Equity	United States	Technology Hardware
AMAZON.COM INC	AMZN UW Equity	United States	E-Commerce Discretionary
NVIDIA CORP	NVDA UW Equity	United States	Semiconductors
ALPHABET INC-CL C	GOOG UW Equity	United States	Internet Media & Services

Section 3: Index Calculation

This Methodology should be read in conjunction with the [Bloomberg Decrement Index Calculation Methodology](#) for details on index calculation, input data, ESG Disclosure and exercise of discretion.

Section 4: Weighting

The Index is equal weighted. The weights are reset quarterly.

Section 5: Maintenance

To ensure that the Index accurately reflects the aggregate performance of its constituent members, the index member's weights must be rebalanced periodically and maintained on a daily basis for corporate actions.

Note that this index is a fixed selection and is therefore not subject to Index Reconstitutions.

Index members and weights can be found using **<ticker> Index MEMB <GO>**

Index Review

The indices are rebalanced quarterly in line with the Bloomberg Global Equity Index Index Review schedule in the months of March, June, September and December.

Each Index Rebalancing follows a weekday calendar. Should an Index Rebalancing fall on a NYSE exchange holiday, it will be postponed to the next business day.

Quarterly Index Rebalancing

Index Shares, and Tilt factor are updated on a quarterly basis on the 2nd Wednesday of March, June, September and December (Effective Date), using data as of one day of the last week of January, April, July and October (Selection Date).

Changes are announced with 10 full business day advance notification (Announcement Date).

Weights are tilted using closing market prices as of one week prior to the Announcement Date.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Selection Date	Last Week			Last Week			Last Week			Last Week		
Announcement Date		Last Wed			Last Wed			Last Wed			Last Wed	
Effective Date			2 nd Wed			2 nd Wed			2 nd Wed			2 nd Wed

Corporate Actions

Refer to the [Bloomberg Global Equity Non-Market Cap Weighted Indices - Corporate Action Methodology](#) for the general treatment of corporate actions, unless stated otherwise in the sections below.

Past and upcoming corporate actions at security level can be found using **<ticker> CACS <GO>** and **<ticker> DVD <GO>** functions on the Bloomberg Terminal.

Spin-off

Child being spun-off from an Index member is added on the ex-date and is removed from the Index at the open of the 5th trading from the ex-date.

IPO

Newly listed Securities are not eligible for fast-track addition to the Index.

Replacement Policy

An Index member being acquired by a non-Index member is not replaced at the time of the event or at a future Index Rebalancing.

Section 7: Governance, 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.

The decrement feature reduces the Index value. Such decrement represents a predetermined reduction relative to the return of the Underlying Index.

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.

Section 8: Benchmark oversight and governance

Benchmark governance, audit and review structure

BISL uses three primary committees to provide overall governance and effective 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 benchmark indices, strategy indices and fixings administered by the BISL.²
- 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 Board 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.

On a quarterly basis, the PROC reports to the BOC on governance matters, including but not limited to client complaints, the launch of new benchmarks, operational incidents (including errors & restatements), major announcements and material changes concerning the benchmarks, the results of any reviews of the benchmarks (internal or external) and material stakeholder engagements.

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

² Note that administrators of significant (but not critical) benchmarks may opt not to disclose (i) re the roles performed by any persons involved in reviewing and approving the methodology and (ii) a description of the procedure for the nomination and removal of the persons involved in reviewing and approving the methodology.

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.

In addition to material changes, BISL may from time to time terminate one or more Indices ("Discontinued Indices"), whether due to changes in market structure, a lack of requisite data, insufficient usage, or for other regulatory or practical concerns. The process for terminating such Discontinued Indices is as follows:

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. 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, the Discontinued Indices may be terminated with less (or no) notice, as applicable. In the event the Discontinued Indices are licensed for use as the basis of an ETF or other widely-available financial product or is otherwise determined by BISL to be an important benchmark without reasonable substitutes, the notice period may be extended, as warranted. 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.). Terminations and associated user engagement decisions made by the PROC are subject to review by BISL's oversight function, the BOC.

Expert judgement

The Index is rules-based, and its construction is designed to consistently produce values without the exercise of expert judgment or discretion. Nevertheless, BISL may use expert judgment or discretion with regards to the following:

- Index restatements
- Extraordinary circumstances during a market emergency
- Data interruptions, issues, and closures
- Significant acquisitions involving a non-Index company

When expert judgment or discretion is required, BISL undertakes to be consistent in its application, with recourse to written procedures outlined in this Methodology and internal procedures manuals. In certain circumstances exercises of expert judgment or discretion are reviewed by senior members of BISL management and Legal & Compliance teams, and are reported to the PROC, BISL's governance committee, which operates under the supervision of BISL's oversight function, the BOC. BISL also maintains and enforces a code of ethics 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.

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.

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

Methodology Book Changes

Date	Update
April 2023	Index creation

Accessing the Data

Bloomberg Terminal®	<p>Bloomberg indices are the benchmarks of choice for capital markets investors.</p> <ul style="list-style-type: none">• IN <GO> - The Bloomberg Index Browser displays the latest performance results and statistics for the indices as well as history. IN presents the indices that make up Bloomberg's global, multi-asset class Index families into a hierarchical view, facilitating navigation and comparisons. The "My Indices" tab allows a user to focus on a set of favorite indices.• PORT <GO> - Bloomberg's Portfolio & Risk Analytics solution includes tools to analyze the risk, return, and current structure of indices. PORT includes tools to analyze performance of a portfolio versus a benchmark as well as models for performance attribution, tracking error analysis, value-at-risk, scenario analysis, and optimization.• DES <GO> - The Index description page provides transparency into the current and projected Index universe including membership information, aggregated characteristics and returns, and historical data.
Bloomberg Indices Website bloomberg.com/bloombergindices	<p>The index website makes available limited Index information including:</p> <ul style="list-style-type: none">• Index methodology and factsheets• Current performance numbers for select indices
Index Licensing	<p>Bloomberg requires an index data license for services and products linked to the indices. Examples include:</p> <ul style="list-style-type: none">• Exchange-traded index products• OTC products• Index or constituent-level redistribution• Custom index solutions

Take the next step.

For additional information, press the <HELP> key twice on the Bloomberg Terminal™.

[bloomberg.com/professional/product/indices/](https://www.bloomberg.com/professional/product/indices/)

New York

+1-212-318-2000

London

+44-20-7330-7500

Singapore

+65-6212-1000

Hong Kong

+852-2977-6000

Tokyo

+81-3-3201-8900

Sydney

+61-2-9777-8600

indexhelp@bloomberg.net

Disclaimer

BLOOMBERG, BLOOMBERG INDICES and Bloomberg Transatlantic Tech Titans 2023 Index (the "Indices") are trademarks or service marks of Bloomberg Finance L.P. Bloomberg Finance L.P. and its affiliates, including Bloomberg Index Services Limited, the administrator of the Indices (collectively, "Bloomberg") or Bloomberg's licensors own all proprietary rights in the Indices. Bloomberg does not guarantee the timeliness, accuracy or completeness of any data or information relating to the Indices. Bloomberg makes no warranty, express or implied, as to the Indices or any data or values relating thereto or results to be obtained therefrom, and expressly disclaims all warranties of merchantability and fitness for a particular purpose with respect thereto. It is not possible to invest directly in an Index. Back-tested performance is not actual performance. Past performance is not an indication of future results. To the maximum extent allowed by law, Bloomberg, its licensors, and its and their respective employees, contractors, agents, suppliers and vendors shall have no liability or responsibility whatsoever for any injury or damages - whether direct, indirect, consequential, incidental, punitive or otherwise - arising in connection with the Indices or any data or values relating thereto - whether arising from their negligence or otherwise. This document constitutes the provision of factual information, rather than financial product advice. Nothing in the Indices shall constitute or be construed as an offering of financial instruments or as investment advice or investment recommendations (i.e., recommendations as to whether or not to "buy", "sell", "hold", or to enter or not to enter into any other transaction involving any specific interest or interests) by Bloomberg or a recommendation as to an investment or other strategy by Bloomberg. Data and other information available via the Indices should not be considered as information sufficient upon which to base an investment decision. All information provided by the Indices is impersonal and not tailored to the needs of any person, entity or group of persons. Bloomberg does not express an opinion on the future or expected value of any security or other interest and do not explicitly or implicitly recommend or suggest an investment strategy of any kind. Customers should consider obtaining independent advice before making any financial decisions. © 2023 Bloomberg. All rights reserved. This document and its contents may not be forwarded or redistributed without the prior consent of Bloomberg.

The BLOOMBERG TERMINAL service and Bloomberg data products (the "Services") are owned and distributed by Bloomberg Finance L.P. ("BFLP") except (i) in Argentina, Australia and certain jurisdictions in the Pacific islands, Bermuda, China, India, Japan, Korea and New Zealand, where Bloomberg L.P. and its subsidiaries distribute these products, and (ii) in Singapore and the jurisdictions serviced by Bloomberg's Singapore office, where a subsidiary of BFLP distributes these products.

Bloomberg Index Services Limited is registered in England and Wales under registered number 08934023 and has its registered office at 3 Queen Victoria Street, London, England, EC4N 4TQ. Bloomberg Index Services Limited is authorised and regulated by the Financial Conduct Authority as a benchmark administrator.