

Bloomberg Europe & US Top Pharmaceuticals 2022 Decrement Index Methodology

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Introduction

The Bloomberg Europe & US Top Pharmaceuticals 2022 Decrement Index is designed to represent a fixed selection of twenty large companies in the pharmaceutical industry, 10 classified in the US and 10 classified in Europe.

Section 1: Overview

Name	Bloomberg Europe & US Top Pharmaceuticals 2022 Decrement 5% Index	Bloomberg Europe & US Top Pharmaceuticals 2022 Decrement 50 point Index
Ticker	PHARM22E Index	PHARM22T Index
Currency	EURO	
Inception Date	January 19, 2022	
Base Date	March 30, 2015	
Publication	Weekdays	

Section 2: Eligibility

Parent Index

In order to be eligible for the Bloomberg Europe & US Top Pharmaceuticals 2022 Decrement Index, a security must be at the time of the Index Inception date an Index member of either:

- the Bloomberg Europe Developed Market Large Cap Universe
- the Bloomberg US Large Cap Universe

Section 3: Selection

To be eligible to be an Index member, a company must belong to the Bloomberg Industry Classification Setor (BICS) level 3 corresponding to Biotech & Pharmaceuticals.

Based on the eligible universes and the product segment criteria, the selected companies are as follows:

Index Members	Ticker	Region
Novartis AG	NOVN SE Equity	Europe
Roche Holding AG	ROG SE Equity	Europe
Novo Nordisk AS	NOVOB DC Equity	Europe
Sanofi	SAN FP Equity	Europe
AstraZeneca PLC	AZN LN Equity	Europe
AbbVie Inc	ABBV UN Equity	US
ELI LILLY	LLY UN Equity	US
Johnson Johnson	JNJ UN Equity	US
Merck Co Inc	MRK UN Equity	US
Pfizer Inc	PFE UN Equity	US

Section 4: Weighting

The Index is equal weighted between the two regions. Therefore, the sum of Index members' weights

in each region will sum up to 50%. Within each region, each member will be weighed based on their free float market capitalization subject to the regional weight capping. 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.

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 in 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 capped 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 6: Index Calculations

- The Bloomberg Fixed Percentage Decrement Indices are designed to represent the performance of an underlying index from which a predetermined fee is withdrawn on daily basis. The predetermined fee is in the form of percentage of the decrement index level.

On each Index Business Day t , the decrement index level is calculated as below:

$$I_t = I_{t-1} \times \left(\frac{I_t^U}{I_{t-1}^U} - PCT \times \frac{ACT_{t,t-1}}{DC} \right)$$

Where:

$ACT_{t,t-1}$ means the number of calendar days from and excluding Index Business Day $t - 1$ to but including Index Business Day t ;

DC means the day count convention that is the assumed number of calendar days of a year;

PCT means the annualized fixed percentage;

I_t means the index level of the decrement index on Index Business Day t ;

I_{t-1} means the index level of the decrement index on Index Business Day $t - 1$;

I_t^U means the index level of the underlying index on Index Business Day t ;

I_{t-1}^U means the index level of the underlying index on Index Business Day $t - 1$;

t means Index Business Day t ;

$t - 1$ means the Index Business Day immediately preceding Index Business Day t ;

NOTE: The Bloomberg Europe & US Top Pharmaceuticals 2022 Decrement 5% Index is calculated from the Bloomberg Europe & US Top Pharmaceuticals 2022 Net Return Index.

- The Bloomberg Fixed Index Point Decrement Indices are designed to represent the performance of an underlying index from which a predetermined fee is withdrawn on daily basis. The predetermined fee is in the form of index points from the decrement index level.

On each Index Business Day t , the decrement index level is calculated as below:

$$I_t = I_{t-1} \times \frac{I_t^U}{I_{t-1}^U} - PNT \times \frac{ACT_{t,t-1}}{DC}$$

Where:

$ACT_{t,t-1}$ means the number of calendar days from and excluding Index Business Day $t - 1$ to but including Index Business Day t ;

DC means the day count convention that is the assumed number of calendar days of a

year;

PNT means the annualized fixed index points;

I_t means the index level of the decrement index on Index Business Day t ;

I_{t-1} means the index level of the decrement index on Index Business Day $t - 1$;

I_t^U means the index level of the underlying index on Index Business Day t ;

I_{t-1}^U means the index level of the underlying index on Index Business Day $t - 1$;

t means Index Business Day t ;

$t - 1$ means the Index Business Day immediately preceding Index Business Day t ;

NOTE: The Bloomberg Europe & US Top Pharmaceuticals 2022 Decrement 50 point Index is calculated from the Bloomberg Europe & US Top Pharmaceuticals 2022 Total Return Index.

For more information regarding the decrement return calculations, please refer to the Bloomberg Decrement Index Methodology.

Appendix

Stakeholder Engagement

BISL is in constant and ongoing engagement with its users through various channels, including via help desks, sales personnel and direct communication with product personnel. To help ensure that the Index remains an accurate representation of European equities defined in the methodology, it endeavors to meaningfully incorporate these engagements into improvements in processes and service. Prior to any material change that might meaningfully impact users, Bloomberg consults more broadly with stakeholders, where appropriate, before a recommendation is presented to the PROC for approval. This concept of shared ownership enables BISL to produce the most relevant Indices and helps ensure responsiveness to user needs.

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 Indices are designed to be representative of the markets they are measuring, they may not be representative of every use case. There is also inherent, though transparent, judgment in their 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 Bloomberg US Equity 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 an 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 securities in this market, its Indices 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

Although each Index is designed to be representative of the market it measures or otherwise align with its stated objective, it may not be representative in every case or achieve its stated objective in all instances. The Index 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 indices measure securities in European equity markets. As with all equity investing, the indices are 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 indices do 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 indices are designed to measure those markets, they 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 indices (e.g. 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.

Benchmark Governance, Audit and Review Structure

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

- The Product, Risk & Operations Committee ("PROC") provides direct governance and is responsible for the first line of controls over the creation, design, production and dissemination of benchmark Indices, strategy Indices and fixings administered by BISL, including the Index. The PROC is composed of Bloomberg personnel with significant experience or relevant expertise in relation to financial benchmarks. Meetings are attended by Bloomberg Legal & Compliance personnel. Nominations and removals are subject to review by the BOC, discussed below.
- The oversight function is provided by Bloomberg's Benchmark Oversight Committee ("BOC"). The BOC is independent of the PROC and is responsible for reviewing and challenging the activities carried out by the PROC. In carrying out its oversight duties, the BOC receives reports of management information both from the PROC as well as Bloomberg Legal & Compliance members engaged in second level controls.

The PROC reports quarterly 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.

Internal and External Reviews

BISL's Index administration is also subject to Bloomberg's Compliance function, which periodically reviews various aspects of its businesses to determine whether it is adhering to applicable policies and procedures, and to assess whether applicable controls are functioning properly. In addition, Bloomberg may from time to time appoint an independent external auditor with appropriate experience and capability to review adherence to benchmark regulation. The frequency of such external reviews will depend on the size and complexity of the operations and the breadth and depth of Index use by stakeholders.

Index and Data Reviews

The Index Administrator will periodically review the Indices (both the rules of construction and data inputs) periodically, not less frequently than annually, to determine whether they continue to reasonably measure the intended underlying market interest, the economic reality or otherwise align with their stated objective. More frequent reviews may be done in response to extreme market events and/or material changes to the applicable underlying market interests.

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.

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, there are no minimum liquidity requirements 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 Indices in connection with the periodic rebalancing of the Indices or as otherwise appropriate.

Any resulting change to the Methodology deemed to be material (discussed below) 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.

Material changes will be reflected and tracked in updated versions of this Methodology.

BISL's Index administration is also subject to Bloomberg's Compliance function which periodically reviews various aspects of its businesses in order to determine whether it is adhering to applicable policies and procedures, and assess whether applicable controls are functioning properly.

Material changes related to the Indices will be made available in advance to affected stakeholders whose input will be solicited. The stakeholder engagement will set forth the rationale for any proposed changes as well as the timeframe and process for responses. The Index Administrator will endeavor to provide at least two weeks for review prior to any material change going into effect. In the event of exigent market circumstances, this period may be shorter. Subject to requests for confidentiality, stakeholder feedback and the Index Administrator's responses will be made accessible upon request.

In determining whether a change to an Index is material, the following factors shall be taken into account:

- The economic and financial impact of the change;
- Whether the change affects the original purpose of the Index; and/or
- Whether the change is consistent with the overall objective of the Index and the underlying market interest it seeks to measure.

Expert Judgment

The Indices are rules-based and their 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:

1. Index restatements
2. Extraordinary circumstances during a market emergency
3. Data interruptions, issues and closures
4. 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 the methodology of the Indices and internal procedures manuals. 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 Product, Risk & Operations Committee (PROC), BISL's governance committee, which operates under the supervision of BISL's oversight function, the Benchmark Oversight Committee (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 Indices are rules-based, and their construction is designed to consistently produce Index Values without the exercise of discretion. The Indices are produced without the interpolation or extrapolation of input data. In addition, the Index Administrator 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 Indices require 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, the Index Administrator 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.

Methodology Book Changes

Date	Update
January 2022	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

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