

Bloomberg Metaverse Select Index Methodology

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Introduction

The Bloomberg Metaverse Select Index is constructed to track the performance of companies that are expected to generate a meaningful portion of revenue from consumer and enterprise services from the metaverse economy.

Section 1: Overview

Name	Bloomberg Metaverse Select Index
Base date	2019-03-25
Rebalance	Quarterly
Publication	Weekdays
Currency	USD
Ticker	BMETAS (Price Return) BMETAST (Total Return) BMETASN (Net Return)

Section 2: Eligibility

Parent Universe

To be eligible for the Bloomberg Metaverse Select Index, a security must be a member of the Bloomberg World Aggregate Index. Please refer to the Bloomberg Global Equity Index methodology through the link below for additional details.

[Bloomberg Global Equity Indices Methodology](#)

Security Types

Common stocks, ADRs and GDRs.

Exchanges

Securities traded in the following exchanges are permitted:

Market	Exchange Codes
Australia	AT
Austria	AV
Belgium	BB
Brazil	BS
Canada	CT
Denmark	DC
Finland	FH
France	FP
Germany	GE, GQ, GY
Hong Kong	HK
Ireland	ID
Israel	IT
Italy	IM
Japan	JT
Malaysia	MK
Mexico	MF, MM
Netherlands	NA

New Zealand	NZ
Norway	NO
Poland	PW
Portugal	PL
Singapore	SP
South Korea	KP, KQ
Spain	SQ
Sweden	SS, SF
Switzerland	SE, XW
Taiwan	TT
United Kingdom	LN, LI
United States	UN, UA, UP, VF, UR, UW, UQ, UF

Section 3: Selection

Initial Screening

The initial screening of companies is based on the screening of publicly available documents such as company filings, earnings calls, presentations, quarterly reports, news and social media. The categories listed below has been identified to be relevant to the metaverse economy. Using key terms that is relevant to the categories below, an initial list of companies is identified.

The following categories are product and/or services that are deemed to suit the theme of this index.

Category
3D Modelling
AI Server
Ad Revenue
Blockchain
Infrastructure -as-a-Service
Live Entertainment & Licensing
Token-Based Gaming
VR/AR Hardware

Scoring

The theme basket committee reviews each company and assigned a revenue and theme score; these are ranked from 1 (most favorable) to 3 (least favorable). The scoring is based on a projected rolling 5 year horizon, scoring companies focusing on their involvement in the metaverse economy.

Score	Description	Data Sources	Criteria
Revenue	<p>The revenue score measures the revenue each company is expected to generate from the theme and appropriate sub-classifications as a percent of the total over a five-year forecast.</p> <p>A score of 1 means more than 50% of next 5 years revenue tied to the theme, 2 means 20-50% and 3 means less than 20%.</p> <p>Analysts assign revenue scores based on information contained in 10-K, 10-Q and annual reports, as well as investor presentations and news.</p>	<p>10-K / 10-Q Investor Presentations News articles Bloomberg New Energy Finance</p>	<p>Planned Capacity Capex / Investment Margins Growth Exposure to segment</p>
Theme	<p>The theme score is a relative measure that reflects scale, competitive advantages, evaluation of stated targets, product portfolios and</p>	<p>Earnings Transcript Supply chain data</p>	<p>Partnerships, JVs Product Pipeline</p>

Score	Description	Data Sources	Criteria
	<p>preparedness for the metaverse economy. Analysts use a SWOT analysis, noting the strengths and weaknesses of each company's brand, network effects, scale, reach, distribution, technology and IP.</p> <p>A score of 1 denotes companies in the first quartile of estimated market share/power, a score of 2 contains the second and third quartiles and a score of 3 contains the fourth.</p> <p>Sources for theme score include earnings transcripts, investor day presentations, supply chain data, financial statements and industry cohort.</p>	<p>Industry reports Press releases</p>	<p>Patents and IP Government subsidies Competitive advantage Market Share</p>

Thematic Rankings

The cumulative total score segments companies into 3 tiers; gold, silver and bronze. Gold companies are deemed the pure -plays and satisfies the intended objective o f the Index hence will be selected for inclusion into the Index.

Tier	Revenue Score	Theme Score	Total Score
Gold	1-2	1-2	2-4
Silver	2-3	2-3	4-6
Bronze	3	3	6

Companies are ranked based on their Total Score and those with the same score will be sub -sorted by free float market capitalization.

Market Capitalization Eligibility

A security must have a minimum free float market capitalization of \$1 billion. Existing index security must have a minimum free float market capitalization of \$750 million at quarterly rebalance.

Liquidity Eligibility

A security must have a minimum 90 -day average value traded of \$2 million. Existing index security must have a minimum 90-day average value traded of \$1.5 million at the quarterly rebalance.

Top Score Small Companies (TSSC)

Securities that do not qualify under Market Capitalization Eligibility and Liquidity Eligibility above but have a Total Score of 2 may qualify if the minimum Market Capitalization is \$100 million and the minimum 90 -day average value traded is \$0.5 million.

A maximum of 5 companies can qualify under this category based on the largest free float market capitalization.

Maximum number of securities

In the event the selection process results in more than 50 securities, only 50 securities based on their ranking will be selected. At each rebalancing securities ranked up to 44 will be selected and existing index securities ranked up to 56 will be selected a s priority.

Multiple Classes of Securities

One security per issuer is permitted. If an issuer has multiple s ecurities, 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 4: Weighting

Group Weight

The index securities are modified market capitalization weighted. The Index weight is assigned to three groups.

Group	Classification	Weight
Group 1	Top 1/3 of securities by Thematic Ranking (excluding TSSC)	50%
Group 2	Bottom 2/3 of securities by Thematic Ranking (excluding TSSC)	50% - (TSSCWeight)
TSSC	Top Score Small Companies	# of TSSCCompanies * 0.5%

Security Weight

TSSC securities are assigned a weight of 0.5%. The remaining securities are free-float market capitalization weighted and capped based on their total score.

Total Score	Weight Cap
2	8%
3	6%
4	4%

Excess weight is distributed proportionally within the groups. The caps may be relaxed in increments of 1% if the Index is unable to fulfil the group weight, only the securities within the relevant group would have relaxed caps.

Section 5: Maintenance

Index calculation

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

Index review

The Index is reconstituted and rebalanced quarterly in March, June, September, and December. Pro-forma changes will be announced with 10 full business day advance notification.

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Selection Date	Last Wednesday	X			X			X			X		
Shares Determination Date	Second last Wednesday		X			X			X			X	
Announcement Date	Last Wednesday		X			X			X			X	
Effective Date *	Second Wednesday			X			X			X			X

*The Index reconstitutions and rebalances go effective after the close of trading. The Index will roll forward a day if the effective day coincides with a day where any of the following exchanges are closed for trading; *New York Stock Exchange, Tokyo Stock Exchange, Hong Kong Stock Exchange and Korea Stock Exchange.*

Corporate actions

The following table outlines specific treatment for intra-rebalance corporate action handling. Please refer to the [Bloomberg Non-Market Cap Corporate Action Methodology](#) for more detail on how BISL treats specific corporate actions. The Methodology aims to maintain alignment to a Parent Index with the following specific exceptions.

Event type	Handling
Spin-off	A child security created from an Index constituent will be added to the Index, evaluated and retained provided it continues to meet eligibility criteria as set by the Parent Index.

Section 6: Backtest assumptions

The selection process in Section 3 is effective from December 2021 rebalance, company selection prior to December 2021 is based on company list from the December 2021 selection process. Revenue and theme scores were only made available from June 2022, revenue and theme score from June 2022 is used for the backtest period.

The index reconstitution and rebalance effective days do not roll forward when exchanges are closed for trading.

Section 7: Stakeholder engagement, risks and limitations

Stakeholder engagement

BISL is in regular 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 Global Equities defined in the methodology, BISL endeavors to meaningfully incorporate these engagements into improvements in processes and service. Prior to any change that might meaningfully impact users, BISL consults more broadly with stakeholders, where appropriate, before a recommendation is presented to the Product, Risk & Operations Committee ("PROC") for approval. This concept of shared ownership enables BISL to produce the most relevant Index 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 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 8: Benchmark oversight and governance

Benchmark governance, audit and review structure

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

- The 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 the personnel with significant experience or relevant expertise in relation to financial benchmarks. Meetings are attended by Legal & Compliance personnel. Nominations and removals are subject to review by the BOC, discussed below.
- The oversight function is provided by BISL'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 from members of the PROC as well as Legal & Compliance members engaged in second level controls.
- In addition, the BISL board of directors is composed of senior executives a majority of which are independent of BISL and is empowered to set the strategy, objectives, and overall direction of BISL, and oversees and monitors BISL's decision-making.

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 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.

Internal and external reviews

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

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.

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)
Missed corporate action	
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
De listing	
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	

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