

Bloomberg MSCI Global Treasury ESG Weighted Bond Index

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

The Bloomberg MSCI Global Treasury ESG Weighted Bond Index measures investment grade, fixed-rate, taxable securities issued by treasury issuers. The benchmark uses MSCI Government environmental, social and governance (ESG) Scores to tilt country allocations above or below their market value weights in the Global Treasury Index. The index was launched in April 2021, with history backfilled to January 2013.

The features specific to this Index are set out below.

Description of Index Constituents Global Investment Grade Treasury bonds

Index Ticker I36244US: Total Return USD Unhedged

Eligibility Requirements:

- Currency**
- Principal and interest must be denominated in one of the following eligible currencies:
 - Americas: CAD, CLP, COP, MXN, PEN, USD
 - EMEA: CHF, CZK, DKK, EUR, GBP, HUF, ILS, NOK, PLN, RON, SEK
 - Asian-Pacific: AUD, CNY, HKD, IDR, JPY, KRW, MYR, NZD, SGD, THB
 - Eligible currencies will not necessarily have debt included in the index if no securities satisfy the inclusion rules.
 - New market inclusion is reviewed on an annual basis through the index governance process. To be considered for inclusion, new market candidates must be investment grade and sufficiently tradable, convertible and hedgeable for offshore investors.

Sector Treasury issuers only.

- Credit Rating**
- Securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. In cases where explicit bond-level ratings may not be available, other sources may be used to classify securities by credit quality:
- Local currency treasury issues are classified using the middle issuer-level local currency from each agency for all outstanding bonds, even if bond-level ratings are available.
 - Expected ratings at issuance may be used to ensure timely index inclusion or to classify split-rated issuers properly.
 - For the Canadian Dollar market, DBRS is considered in addition to Moody's, S&P and Fitch. When all four ratings agencies are available, the highest and lowest rating are removed and the lower of the two remaining is used.

Minimum Amount Outstanding	Fixed minimum issue sizes are set for all local currency markets:	
	<ul style="list-style-type: none"> ● 150mn: CAD ● 300mn: USD, EUR, CHF, AUD ● 200mn: GBP ● 1bn: RON, PEN ● 35bn: JPY ● 2bn: DKK, NOK, PLN, ILS, HKD, MYR ● 2.5bn: SEK ● 5bn: CNY ● 10bn: MXN, CZK, THB ● 500mn: NZD, SGD ● 100bn: CLP ● 200bn: HUF ● 500bn: KRW ● 1trn: COP ● 2trn: IDR 	
Coupon	<ul style="list-style-type: none"> ● Fixed-rate coupon (including zero coupon). ● Globally settled bonds that are denominated in native currency, but settle in USD, are eligible. ● Callable fixed-to-floating rate bonds are eligible during their fixed-rate term only. ● Step-up coupons and those that change according to a predetermined schedule are also eligible. 	
Maturity	<ul style="list-style-type: none"> ● Securities must have remaining time to maturity of at least one year, regardless of optionality. ● Bonds that convert from fixed to floating rate, including fixed-to-float perpetual, will exit the index one month prior to conversion to floating-rate. Fixed-rate perpetual bonds are not included. 	
Market of Issue	Fully taxable, publicly issued in the global and regional markets.	
Seniority of Debt	Senior and subordinated issues are included.	
Minimum Liquidity Requirements	See Minimum Amount Outstanding specified above.	
Rebalance Date	Monthly	
Security Types	Included	Excluded
	<ul style="list-style-type: none"> ● Bullet, putable, sinkable/amortizing and callable bonds ● Original issue zero coupon bonds 	<ul style="list-style-type: none"> ● Debt issued by central governments in non-domestic currencies ● Floating-rate bonds, inflation-linked bonds ● Private placements and retail bonds ● Sinkable Russian OFZ bonds issued prior to 2009

- STRIPS
- Treasury bills with less than one year to maturity
- Illiquid securities with no available internal or third-party pricing source

Document Version History

Date	Update
Aug 04, 2023	Publication in new format
Dec 12, 2023	Update to factor tilts

Environmental, Social and Governance (ESG)

This section is not intended to be exhaustive and is being provided for information purposes only - detailed ESG disclosures set out in dedicated section below.

Factor Tilts

The weight of each index eligible security is adjusted by a fixed multiplier (see table below), which is determined by the market value weight the issuing country holds within the broader Global Treasury Index, along with its MSCI Government ESG Score (0-10). Security weights are then normalized using these adjusted market values.

Large Cap Country MV > 10%			Medium Cap Country 0.10% < MV < 10%			Small Cap Country MV < 0.10%		
Government ESG Score		Tilt	Government ESG Score		Tilt	Government ESG Score		Tilt
Min	Max		Min	Max		Min	Max	
0.00	1.25	0.00	0.00	1.25	0.00	0.00	1.25	0.00
1.25	1.50	0.01	1.25	1.50	0.00	1.25	1.50	0.00
1.50	1.75	0.01	1.50	1.75	0.00	1.50	1.75	0.00
1.75	2.00	0.02	1.75	2.00	0.00	1.75	2.00	0.00
2.00	2.25	0.02	2.00	2.25	0.00	2.00	2.25	0.00
2.25	2.50	0.03	2.25	2.50	0.00	2.25	2.50	0.00
2.50	2.75	0.04	2.50	2.75	0.00	2.50	2.75	0.00
2.75	3.00	0.05	2.75	3.00	0.01	2.75	3.00	0.01
3.00	3.25	0.06	3.00	3.25	0.01	3.00	3.25	0.01
3.25	3.50	0.08	3.25	3.50	0.01	3.25	3.50	0.01
3.50	3.75	0.09	3.50	3.75	0.01	3.50	3.75	0.01
3.75	4.00	0.11	3.75	4.00	0.02	3.75	4.00	0.02
4.00	4.25	0.12	4.00	4.25	0.02	4.00	4.25	0.02
4.25	4.50	0.15	4.25	4.50	0.03	4.25	4.50	0.03
4.50	4.75	0.20	4.50	4.75	0.05	4.50	4.75	0.05
4.75	5.00	0.25	4.75	5.00	0.08	4.75	5.00	0.08
5.00	5.25	0.31	5.00	5.25	0.12	5.00	5.25	0.12
5.25	5.50	0.37	5.25	5.50	0.16	5.25	5.50	0.16
5.50	5.75	0.49	5.50	5.75	0.27	5.50	5.75	0.27
5.75	6.00	0.59	5.75	6.00	0.38	5.75	6.00	0.38
6.00	6.25	0.76	6.00	6.25	0.61	6.00	6.25	0.61
6.25	6.50	0.97	6.25	6.50	0.96	6.25	6.50	0.96
6.50	6.75	1.18	6.50	6.75	1.37	6.50	6.75	1.37
6.75	10.00	1.53	6.75	7.00	2.22	6.75	7.00	2.22
			7.00	7.25	3.34	7.00	7.25	3.34
			7.25	7.50	5.45	7.25	7.50	5.45
			7.50	10.00	7.49	7.50	7.75	7.49
						7.75	10.00	12.42

Timing and Coverage

- Factor tilts are based on beginning of the month MSCI Government ESG Scores and country weights. Government ESG score and issuing country weight changes during the month would not affect index weights and returns until the next index rebalancing date.
- MSCI Government ESG Scores are available for treasury and sovereign issuers.
- Government ESG scores are applied at the Bloomberg ticker level, and every bond within the same ticker will have the same Government ESG Score.
- MSCI Government ESG Scores are generally updated annually throughout the year, but may be reviewed more frequently as needed.

Environmental, Social and Governance (ESG) Disclosures

Where an index applies MSCI screens and a security/issuer is not included in the MSCI research coverage for that screen, unless otherwise noted, this index will include such security/issuer, provided it meets the relevant index eligibility rules. This applies to Government, securitized issuers (ABS, CMBS, and MBS), and corporate issuers not covered by MSCI ESG Business Involvement Screening Data, MSCI ESG Controversy Scores, and MSCI ESG Climate Data & Metrics, and also to Corporate issuers not covered by MSCI ESG Research.

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY			
1. Name of the benchmark administrator.		Bloomberg Index Services Limited ("BISL")	
2. Type of benchmark		Sovereign Debt	
3. Name of the benchmark or family benchmarks.		Bloomberg MSCI Global Treasury ESG Weighted Bond Index	
4. Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?		Yes	
<p>5. Where the response to Item 4 is positive, please list below, for each family of benchmarks, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816.</p> <p>Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets. The ESG factors shall be disclosed at an aggregated weighted average value at the level of the family of benchmarks.</p>			
a) List of combined ESG factors considered		As below.	
b) List of environmental factors considered:		As below.	
c) List of social factors considered:		As below.	
d) List of governance factors considered:		As below.	
<p>6. Where the response to Item 4 is positive, please list below, for each benchmark, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816, depending on the relevant underlying asset concerned.</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 combined ESG factors considered	MSCI ESG Government Rating	Weighting	<p>The Bloomberg MSCI Global Treasury ESG Weighted Bond Index incorporates MSCI Government ESG ratings into the weight of each index eligible issuer (and security) within the index, where the weight is adjusted by a fixed multiplier, which is determined by its numeric MSCI Government ESG Rating. Security weights are then normalized using these adjusted market values.</p> <p>The MSCI ESG Government Ratings model assesses a country's performance based on over 100 data points across six environmental, social and governance risk factors affecting its' value creation process. Countries are rated on a 7-point 'AAA' to 'CCC' scale, which reflects how countries' exposure to and management</p>

			<p>of ESG risk factors may affect the long-term sustainability of their economies.</p> <p>The weight of each bond is adjusted by a fixed multiplier, which is determined by the market value weight the issuing country holds within the broader Global Treasury Index, along with its MSCI Government ESG Score (0-10).</p> <p>The Government ESG Score Indicates the overall environmental, social, and governance (ESG) performance of a country/region. This score is equal to the simple average of the 'ESG risk exposure' score (rescaled by subtracting from 10) and the 'ESG risk management' score, with an upper ceiling of a score of 'ESG risk management score' plus one. Regions with low risk exposure and strong management of ESG risk factors score highest; regions with high risk exposure and weak management of ESG risk factors score lowest. (Score: 0-10)</p> <p>Please refer to the MSCI ESG Ratings Methodology that can be accessed here and summary of what an MSCI ESG rating is can be found here.</p>
	The percentage of underlying fund management companies signed up to international standards.	N/A	The Index does not take this ESG factor into account in the methodology.
b) List of environmental factors considered:	GHG intensity of the benchmark.	N/A	The Index does not take this ESG factor into account in the methodology.
	Percentage of GHG emissions reported versus estimated.	N/A	The Index does not take this ESG factor into account in the methodology.
	Percentage of green bonds in the benchmark portfolio.	N/A	The Index does not take this ESG factor into account in the methodology.
c) List of social factors considered:	Number of benchmark constituents subject to social violations (absolute number and relative divided by all benchmark constituents), as referred to in international treaties and conventions, United Nations principles and, where applicable, national law.	N/A	The Index does not take this ESG factor into account in the methodology.
	Average human rights performance of the	N/A	The Index does not take this ESG factor into account in the methodology.

	issuers (including a quantitative indicator and the methodology used to calculate it).		
	Average income inequality score, measuring the distribution of income and economic inequality among the participants in a particular economy (including a quantitative indicator and the methodology used to calculate it).	N/A	The Index does not take this ESG factor into account in the methodology.
	Average freedom of expression score measuring the extent to which political and civil society organizations can operate freely (including a quantitative indicator and the methodology used to calculate it).	N/A	The Index does not take this ESG factor into account in the methodology.
d) List of governance factors considered:	Average corruption score measuring the perceived level of public sector corruption (including a quantitative indicator and the methodology used to calculate it).	N/A	The Index does not take this ESG factor into account in the methodology.
	Average political stability score, measuring the likelihood that the current regime will be overthrown by the use of force (including a quantitative indicator and the methodology used to calculate it).	N/A	The Index does not take this ESG factor into account in the methodology.
	Average rule of law score, based on the absence of corruption, respect for fundamental rights, and the state of civil and criminal justice (including a quantitative indicator	N/A	The Index does not take this ESG factor into account in the methodology.

	and the methodology used to calculate it).		
<p>7. Data and standards used.</p>			
<p>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></p>	<p>All ESG data for the benchmarks is sourced externally from:</p> <p>MSCI Research esgclientservice@msci.com https://www.msci.com/research-and-insights</p> <p>MSCI ESG Research relies on a proprietary methodology informed by a range of data sources.</p> <ul style="list-style-type: none"> • Reported data <ul style="list-style-type: none"> ○ Corporate documents: annual reports, proxy filings, environmental and social reports, securities filings, websites and Carbon Disclosure Project responses. Externally sourced data ○ Government data: central bank data, U.S. Toxic Release Inventory, Comprehensive Environmental Response and Liability Information System (CERCLIS), RCRA Hazardous Waste Data Management System, etc. We continue to assess the value of other, similar information sources, particularly for European companies. ○ Popular, trade, and academic journals: accessed through websites, subscriptions and searches of online databases. ○ News media: major news publications globally, including local-language sources across a range of markets. ○ Relevant organizations and professionals: reports from and interviews with trade groups, industry experts and nongovernmental organizations familiar with the companies’ operations and any related controversies • Modelled data <ul style="list-style-type: none"> ○ For climate-related metrics, when data is not disclosed by companies, MSCI ESG Research uses a proprietary GHG emission estimation model. ○ When companies do not report exact revenue figures for a covered business activity, MSCI ESG Research provides an estimate of the extent of companies’ involvement in the subject activity. <p>For top level scores (ESG Ratings, Environmental, Social and Governance pillars), MSCI ESG Research estimates macro-level risk exposure for companies’ based on the type and location of operations, distribution of products. Data sources used in the exposure calculations include, but not limited to:</p> <ul style="list-style-type: none"> • Comprehensive Environmental Data Archive (CEDA) • US Department of Energy; International Council on Clean Transportation • Lamont-Doherty Earth Observatory, Columbia University • Organization of Economic Co-Operation and Development (OECD) • Canadian Industrial Water Survey 		

	<ul style="list-style-type: none"> • Hoekstra, A.Y. and Mekonnen, M.M. (2011) • Ecorisk • World Development Indicators (WDI) • Annual Change of Forest Resources _ Food and Agriculture Organization (FAO) • World Wildlife Fund (WWF) • US EPA’s Toxics Release Inventory (TRI) • Risk-Screening Environmental Indicators (RSEI) • US Bureau of Labor Statistics (BLS) • International Labour Organization (ILO) • US Occupational Health & Safety Administration (OSHA) • UK Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) • International Chemical Secretariat (ChemSec) Substitute It Now (SIN) List • International Monetary Fund (IMF) • World Health Organization (WHO) • UN Principles for Responsible Investments (UN PRI) • World Resource Institute (WRI) • Consultative Group to Assist the Poor (CGAP) • US Census Bureau Current Population Survey Supplement • World Bank Governance Indicators (WGI) • Transparency International (TI) • World Bank (WB) • SNL Financial • Thomson Financial <p>Refer to the MSCI ESG & Climate Methodologies page for further details on the data sources for the relevant ESG factors.</p>
<p>b) Verification of data and guaranteeing the quality of those data. <i>Describe how data are verified and how the quality of those data is ensured.</i></p>	<p>MSCI ESG Score</p> <p>The ESG Ratings process includes multiple steps to review the quality of the analysis and consistent application of the methodology.</p> <p>The following quality assurance and oversight processes are observed:</p> <ul style="list-style-type: none"> • Quality review process: Data quality checks are conducted on all companies prior to the publication of their ESG Rating. • Analytical review: All ESG Ratings are subject to review by an analyst and a reviewer. In cases where the analyst review results in a proposal for a change to an ESG Rating, and for defined other circumstances, the Rating is subject to a review by a second senior analyst. • Ratings Methodology Committee: This committee addresses the following specific cases, as well as other escalations related to methodology application: <ul style="list-style-type: none"> - Proposal to add a company-specific Key Issue in a company’s assessment. - Ratings change of two letters or more. - New AAA- or CCC-rated company.

	<ul style="list-style-type: none"> - Requests for deviations from the weights for industry Key Issues due to significant differences in business model from the industry peer set. - Requests to deviate from standard methodology for including or excluding controversies cases in a company's ratings analysis. • ESG Methodology Committee: This committee addresses escalations from the Ratings Methodology Committee and reviews changes to the ESG Ratings methodology, including: <ul style="list-style-type: none"> - Updates to the ESG Industry Materiality Map, which determines the relevance of ESG Key Issues to sub-industries. - Changes to data sources or calculations used in ESG Ratings. - Methodology proposals for consultation. <p>Please see the MSCI ESG Ratings Methodology and Process via the MSCI ESG Methodologies website for further detail.</p>
<p>c) Reference standards <i>Describe the international standards used in the benchmark methodology.</i></p>	<p>MSCI ESG Score MSCI ESG Research relies on a proprietary methodology informed by a range of data sources. MSCI ESG Research does not explicitly mandate reporting along specific disclosure standards. Commonly utilized disclosure frameworks for data collected and used by MSCI ESG Research include GRI, SASB, UN Global Compact; and, for specific performance indicators, GHG Protocol, and applicable ISO standards.</p>
<p>Date on which information has been last updated and reason for the update:</p>	<p>July 2023, Update of the Annex</p>

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