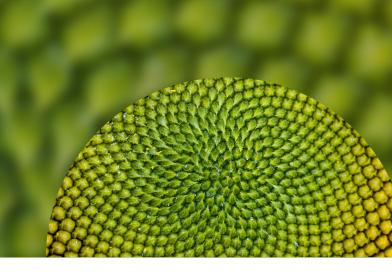
SOLUTION OVERVIEW

FTSE ESG Government **Bond Index Series**

Incorporating ESG Scores of the sovereign bond asset class



Providing an innovative, flexible approach for sovereign bond investors looking to incorporate E, S and G risk factors in their government bond exposures

The FTSE ESG Government Bond Index Series measures the performance of sovereign bonds while incorporating a tilting methodology that adjusts index weights according to each country's relative Environmental, Social and Governance (ESG) scores.

The Series assigns weights to each country based on the market capitalisation of its index-eligible debt, as well as its relative ESG score, measured across three distinct and quantitative pillars: Environmental, Social & Governance. The unique ESG score assessment that underpins the Series is designed to improve ESG score, for the sovereign bond asset class by tilting index constituent weights towards each of the three ESG pillars.

The Series includes*:

FTSE ESG World Government Bond Index (FTSE ESG WGBI)

The underlying FTSE WGBI includes investment-grade, local currency, accessible sovereign bond markets, comprising over 20 countries.

FTSE ESG European Monetary Union (EMU) Government Bond Index (FTSE ESG EGBI)

The underlying FTSE EGBI tracks the WGBI markets that are part of the European Monetary Union.

FTSE ESG Emerging Markets US Dollar Government Bond Index (ESG EMUSDGBI)

The underlying FTSE EMUSDGBI tracks US dollar-denominated emerging market sovereign debt issued by over 50 countries from Latin America, Eastern Europe, Middle East, Africa, and Asia. The index offers geographical diversification without exposure to local currency fluctuations.

FTSE ESG Emerging Markets Government Bond Capped Index (ESG EMGBI-Capped)

The underlying FTSE EMGBI-Capped imposes a maximum country weight of 10% to limit individual market exposure in the FTSE Emerging Markets Government Bond Index. The FTSE Emerging Markets Government Bond Index comprises local currency government bonds from 16 countries.

*as at March 2022

From E, S and G Scores to **Index Weights**

1. Input Data: E, S & G Scores provided by LSEGs Sustainable Sovereign Risk Methodology

2. Normalise ESG scores

Pillar scores are converted to a z-score, calculated against the eligible country cohort each month

3. Transpose z-scores to tilts Pillar tilts fall into the range 0.1-1.0

4. Apply geometric tilt approach A multiplicative approach maintains the power of each pillar tilt. The tilt strength (powers α , β and y) can be adjusted according to the desired deviation from market value weights.

 $E^{\alpha} \times S^{\beta} \times G^{\gamma} = Country ESG$



FTSE ESG Government Bond Index Series

	FTSE ESG World Government Bond Index (ESG WGBI)	FTSE ESG European Monetary Union (EMU) Government Bond Index (ESG EGBI)	FTSE ESG Emerging Markets Government Bond Capped Index (ESG EMGBI-Capped)	FTSE ESG Emerging Markets US Dollar Government Bond Index (ESG EMUSDGBI)
Underlying Universe	FTSE WGBI. Fixed-rate, local currency, investment- grade sovereign bonds, comprising debt from over 20 countries.	FTSE EGBI. Fixed-rate, local currency, investmentgrade sovereign bonds. Consists of the EMU participating countries eligible for the WGBI.	FTSE EMGBI-Capped. Fixed-rate, local currency emerging market sovereign debt from 16 countries. Imposes a maximum country weight of 10% to limit individual market exposure in the FTSE Emerging Markets Government Bond Index.	FTSE EMUSDGBI. Includes US dollar- denominated emerging market sovereign debt from over 50 countries in Latin America, Eastern Europe, Middle East, Africa and Asia.
Rebalancing	The Series follows the monthly rebalancing mechanics of the underlying standard index with respect to universe membership, and then tilts market value weights for each country by its respective Index ESG score. Index ESG scores are calculated on a monthly basis using quarterly updated E, S and G pillar scores: Countries' quarterly pillar scores are then compared on a relative basis versus the cohort of countries that will be included in the index universe in that following month Relative pillar scores are combined to derive a single combined Index ESG score for each country for the following month Country combined Index ESG scores are then used to reweight the country's exposure in the index to provide higher exposures to countries that have a higher Index ESG score, and lower exposures to countries that have a lower Index ESG score			
Geometric Tilt Power $(\alpha, \beta \text{ and } \gamma)$	Environmental Performance: 0.5 Social Performance: 0.5 Governance Performance: 0.5	Environmental Performance: 0.5 Social Performance: 0.5 Governance Performance: 0.5	Environmental Performance: 0.5 Social Performance: 0.5 Governance Performance: 2.0	Environmental Performance: 0.5 Social Performance: 0.5 Governance Performance: 2.0
Base Date	December 31, 2001	December 31, 2001	March 31, 2011	December 31, 2009.

Countries designated as "Consolidated Authoritarian Regime" or "Semi-Consolidated Authoritarian Regime" by the Freedom House are not eligible for the ESG EMUSDGBI or the ESG EMGBI-Capped. Freedom House classifies countries as such as part of its 'Nations in Transit' report.

For more information, please see the <u>FTSE ESG Government Bond Index Series Ground Rules</u>.

For information regarding the underlying market value-weighted index, please see the <u>FTSE Fixed Income Index Guide</u>.

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Product highlights

Underpinned by robust, quantitatively assessed E, S and G factors as part of the Sustainable Sovereign Risk Methodology (2SRM) model

ESG pillar scores assess a country's exposure to and management of ESG risk factors, and are taken from the sustainability profile of the LSEG 2SRM. This profile includes quantitative assessments across Environmental, Social and Governance performance pillars. Each pillar contains multiple underlying indicators. Raw data inputs are normalised to ensure countries are scored between 0 and 100 for each indicator.

- Environmental performance: considers Energy, Climate, and Resources
- Social performance: considers Inequality, Employment, Human Capital, Health, and Societal Wellbeing
- Governance performance: considers Corruption, Government Effectiveness, Political Stability, Regulatory Quality, Rule of Law, and Voice & Accountability

For more information, please see the Sovereign Risk Monitor methodology.

Flexible, highly customisable approach

The Series methodology is designed to be easily configurable, and can be tweaked to meet the requirements of different sovereign bond investors looking to incorporate Environmental, Social and Governance pillars into index design. For example, higher tilt strengths can be applied to deviate further from market value weights in order to achieve a higher index ESG score.

Transparent, rules-based approach

Disclosed in a publicly available set of rules, the index design criteria and calculation methodologies are transparent and rules-based, facilitating ease of index use.

Rich datasets

The indexes are underpinned by a comprehensive set of daily and monthly, issue-level and index-level files. Each file contains a robust set of performance and analytics metrics, providing investors with the tools they need to track market dynamics from any angle.

Daily preview reports, available for the market value-weighted Government bond indexes underlying the FTSE ESG Government Bond indexes, provide visibility into the security-level adjustments to the index ahead of each month-end index rebalancing. They consist of dynamic bond universes that change intra-month on a daily basis, reflecting the latest information regarding the eligibility of bonds for the headline index for the following month's profile.

Rigorous governance framework

FTSE Russell is committed to global best practice standards in index governance. Objective index construction rules are publicly available on Issee.com/ftse-russell, and are continually evaluated to ensure the index remains a relevant and reliable performance measure for the market.

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