

16 January 2025

J.P. Morgan ESG Tilted EMU Government Bond Index

Index Methodology and Profile

Highlights

The J.P. Morgan ESG Tilted EMU Government Bond Index aims to track the performance of eligible fixed-rate, euro-denominated domestic government debt issued by Eurozone countries with minimum €80 billion index-eligible debt outstanding. The index currently includes government bonds issued by Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal and Spain. The index applies an Environmental, Social and Governance (ESG) scoring and screening methodology to tilt toward issuers ranked higher on ESG criteria, and to underweight or remove issuers that rank lower. The index was created in January 2025, with returns and statistics history backfilled to December 2014.

Index Criteria

Minimum Issue Size	€1 billion
Minimum Country Size	€80 billion
Instrument Type	Includes: Fixed-rate and zero-coupon bonds Excludes: Floating-rate bonds, capitalization/amortizing bonds, bonds with callable, puttable, or convertible features
Currency Denomination	Euro denominated
Remaining Maturity	Inclusion: Greater than 2 years remaining maturity on rebalance date Exclusion: Less than 6 months remaining maturity on rebalance date

Index Characteristics and Methodology

Pricing	Mid prices are taken from a third party pricing source, PricingDirect
Aggregate Return	Weighted average of bond returns using mid prices
Rebalancing	Rebalances on the last weekday of the month. If FX rates from WM Reuters are unavailable on the last weekday of the month (e.g. Good Friday), indices are rebalanced on the previous business day
Coupon Reinvestment	Immediately reinvested into the respective local market
FX Rates	All FX rates used for hedged/unhedged returns are as of 4pm London time provided by WM/Reuters
Weighting	Market capitalization based weighting, subject to adjustments based on JESG scores
Price Timing	As of the respective local market close
Settlement Convention	Respective local market country convention
Holiday Calendar	Index levels are published on all weekdays. Individual instrument analytics follow respective local market calendar
Bloomberg Ticker	JNUCEUR

JESG Overlay Criteria

The J.P. Morgan ESG EMU Government Bond Index applies the J.P. Morgan JESG methodology as an overlay to the J.P. Morgan EMU Government Bond Index.

For details on the ESG providers, scoring methodology, green bond treatment and exclusions, please refer to the sovereign methodology detailed within the [J.P. Morgan ESG Index Suite \(JESG\) Rules and Methodology](#).

ESG providers & Green Bond certification authorities	Sustainalytics Verisk Maplecroft Climate Bonds Initiative																																	
JESG Scoring methodology	<p>A simple average of each country’s Verisk Maplecroft and Sustainalytics score is taken to produce the final JESG index score.</p> <p>The JESG index scores are divided into 10 bands^ that are used to scale each issue’s baseline index market value.</p> <table><tr><th>JESG Score Band</th><th>Scalar</th></tr><tr><td>Band 1: 90 < Score <= 100</td><td>1.00</td></tr><tr><td>Band 2: 80 < Score <= 90</td><td>0.90</td></tr><tr><td>Band 3: 70 < Score <= 80</td><td>0.80</td></tr><tr><td>Band 4: 60 < Score <= 70</td><td>0.70</td></tr><tr><td>Band 5: 50 < Score <= 60</td><td>0.60</td></tr><tr><td>Band 6: 40 < Score <= 50</td><td>0.50</td></tr><tr><td>Band 7: 30 < Score <= 40</td><td>0.40</td></tr><tr><td>Band 8: 20 < Score <= 30</td><td>0.00</td></tr><tr><td>Band 9: 10 < Score <= 20</td><td>0.00</td></tr><tr><td>Band 10: Score <= 10</td><td>0.00</td></tr></table>	JESG Score Band	Scalar	Band 1: 90 < Score <= 100	1.00	Band 2: 80 < Score <= 90	0.90	Band 3: 70 < Score <= 80	0.80	Band 4: 60 < Score <= 70	0.70	Band 5: 50 < Score <= 60	0.60	Band 6: 40 < Score <= 50	0.50	Band 7: 30 < Score <= 40	0.40	Band 8: 20 < Score <= 30	0.00	Band 9: 10 < Score <= 20	0.00	Band 10: Score <= 10	0.00											
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JESG Integration methodology	<p>An issuer must enter a new score quintile by at least one-half (0.5) point in order to become eligible for a band change. For example, an issuer in band 1 will only fall into band 2 if its score drops below 89.5, and an issuer in band 2 will only rise into band 1 if its score rises above 90.5.</p> <table><tr><th>JESG Score Band</th><th>Score Threshold to Receive Upgrade</th><th>Score Threshold to Receive Downgrade</th></tr><tr><td>Band 1</td><td>-</td><td>89.5</td></tr><tr><td>Band 2</td><td>90.5</td><td>79.5</td></tr><tr><td>Band 3</td><td>80.5</td><td>69.5</td></tr><tr><td>Band 4</td><td>70.5</td><td>59.5</td></tr><tr><td>Band 5</td><td>60.5</td><td>49.5</td></tr><tr><td>Band 6</td><td>50.5</td><td>39.5</td></tr><tr><td>Band 7</td><td>40.5</td><td>29.5</td></tr><tr><td>Band 8</td><td>30.5</td><td>19.5</td></tr><tr><td>Band 9</td><td>20.5</td><td>9.5</td></tr><tr><td>Band 10</td><td>10.5</td><td>-</td></tr></table>	JESG Score Band	Score Threshold to Receive Upgrade	Score Threshold to Receive Downgrade	Band 1	-	89.5	Band 2	90.5	79.5	Band 3	80.5	69.5	Band 4	70.5	59.5	Band 5	60.5	49.5	Band 6	50.5	39.5	Band 7	40.5	29.5	Band 8	30.5	19.5	Band 9	20.5	9.5	Band 10	10.5	-
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	^Please note that the 10 bands above are a custom version of the JESG 5 band approach captured in the JESG rules and methodology .			
Green Bond treatment	If an instrument is categorized as a “green bond” by the Climate Bonds Initiative, the security will receive a one-band upgrade. Green bonds by issuers already in Band 1 will not receive any further upgrades.			
Ethical Exclusions & Negative Screening	<ul style="list-style-type: none">• Issuers with JESG scores less than or equal to 30.• Issuers with sanctions on their central government debt from the EU, UN, or U.S.• Issuers subject to social violations, referring to international treaties, UN principles or local regulations as identified by Sustainalytics*:			
	Category	Field Name	Description	Threshold
	Issuers subject to social violations as referred to in international treaties and conventions, United Nations Principles or, where applicable, national law.	Event – Repression	The Event Indicator Category is a categorization of events that have resulted in negative ESG impacts into five events categories: Category 1 (low impact); category 2 (moderate impact); category 3(significant impact); category 4 (high impact); and category 5 (severe impact).	Category 4 (high impact); and Category 5 (severe impact) Incidents.
		Event – Conflict		
		Event – Corruption		
An issuer that is excluded from the JESG indices will not be eligible to re-enter the benchmark for at least 12 months after the time of its initial exclusion.				
*Please note that the exclusions applied are a custom version of those captured in the JESG rules and methodology .				

Defining the universe of eligible countries

The Index includes liquid, bullet, fixed-rate local debt issued by Eurozone countries with minimum €80 billion debt outstanding. The index currently includes government bonds issued by Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal, and Spain.

Instrument type

Only fixed-rate and zero coupon instruments are included. Floating-rate and capitalization, amortizing bonds or bonds with callable, puttable or convertible features are not part of the indices.

Liquidity

A key feature that distinguishes our indices from other index products is the strict enforcement of liquidity criteria in the selection of instruments. Yet, while the notion of liquidity differs from market to market, J.P. Morgan indices include only securities, subject to several considerations including but not limited to:

- **Pricing:** Bonds must trade with enough frequency to prevent stale price quotations
- **Availability:** Bonds must be regularly traded in size at acceptable bid-offer spreads and readily redeemable for cash. A reasonable two-way market must exist for the instrument to be included in the index portfolio.
- **Replication costs:** Investors should be able to replicate the index without incurring excessive transaction costs.

Bond calculations

Calculations are according to market convention: All calculations including accrued interest, duration, yield, etc., are done according to local market convention using parameters (ex-dividend

rules, settlement conventions, etc.) relevant to each specific bond. All calculations are gross of tax and ignore transactions costs.

Bond pricing: Pricing for our underlying instruments is provided on a daily basis from Pricing Direct, a third party valuation vendor. In the event the primary source for pricing is unable to provide a quote, the Index Group reserves the right to consider the use of an appropriate alternative source for index inputs. Please see <http://www.pricing-direct.com> for further details.

Ex-dividend rules: Ex-dividend rules, when applicable, are incorporated into accrued interest calculations, as appropriate, by country. Ex-dividend rules define the last day a bondholder must own a bond in order to receive that bond's next coupon payment, otherwise known as the ex-dividend date.

- During the period between the ex-dividend date and the coupon date, the bond trades "ex-dividend"
- An investor who purchases a bond for settlement between the ex-dividend date and coupon date will not receive that bond's next coupon payment
- During this period, according to market convention, accrued interest becomes negative resulting in a total price at a discount to the clean price and in effect, compensating the investor for the time the bond will be held without interest
- On coupon date, interest will start to accrue for the subsequent coupon payment

Bond and Index Returns: Bond and index returns are calculated daily:

- Principal return index is based on changes in clean price
- Interest return index is based on changes in accrued interest
- Total return index is based on changes in both clean price and accrued interest

Reinvestment of coupons: The J.P. Morgan indices are always fully invested. All coupons received are immediately reinvested back into the local market.

Interest accruals: Interest is accrued starting from the bond's dated date up to the first coupon value date. Accrued interest is calculated according to market convention, on a settlement day basis. Interest is accrued by value or settlement date. Weekly, seven days of interest are accrued, including the weekend.

In markets with ex-dividend rules, if a bond is purchased after the ex-dividend date the purchaser will not receive the bond's next coupon. In order to compensate the buyer of the bond, the price paid for the bond must be less than the clean market price, thus, accrued interest will be negative.

Coupon value date: The coupon value date is the trade date associated with settlement on coupon date (the day the coupon is paid). Thus, the coupon value date is the last trade date which an investor may purchase a bond and have that bond settle prior to payment of the subsequent coupon. On coupon value date, accrued interest resets to zero, and accruals begin towards the next coupon.

Yield: Effective annual rate of return, expressed as a percentage. Yields are all calculated as yield-to-maturity, which is the discount rate that the present value of future payments equals the price of the security.

Index calculations

The index rebalances on the last weekday of each month. If FX rates from WM Reuters are unavailable on the last weekday of the month (e.g. Good Friday), indices are rebalanced on the previous business day.

The index is weighted by the component countries' aggregate normalized market capitalization (dirty price times par outstanding). These weights are then scaled based on the issuer's JESG score, as described above. The weights change monthly on each rebalance day, and those weights remain active for the remainder of that month.

Accrued interest is assigned to the bonds in the index according to the specific convention of each country's market, and this interest is settlement adjusted.

Daily indicative pricing for each security and FX rate is closely scrutinized and are reconciled using market movements and other pricing sources as guidance. As necessary, an established alternate source will be used to maintain the integrity of daily index calculations. On any given calculation day, if the primary source is unable to provide a quote, the Index Group reserves the right to consider the use of an appropriate alternate source for index inputs, such as pricing and FX. If a permanent switch for the primary third party pricing source is necessary, clients will be notified in advance prior to any official switch.

For any questions or for additional information, please contact index.research@jpmorgan.com

Global Index Research

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