

J.P. Morgan ESG Green, Social, & Sustainability EUR Bond Index

Methodology and Factsheet

Highlights

The J.P. Morgan ESG (JESG) Green, Social, & Sustainability (GSS) IG EUR Bond Index tracks green, social, and sustainability bonds, denominated in EUR, across developed and emerging markets with an emphasis on green bonds that are aligned in achieving the goals within the Paris Agreement (i.e. Certified Climate Bonds). The index applies an ESG scoring and screening methodology that tilts toward issuers with greater ESG qualities and, at the instrument level, ‘Certified Climate Bonds’. The index leverages the labelled green, social, and sustainability bond datasets from the Climate Bonds Initiative, in addition to their Certified Climate Bonds Standard that identifies those green bonds that are aligned in achieving the goals within the Paris Agreement. The returns and statistics are available since December 2014.

Index Criteria

	Hard Currency Bonds	Local Currency Government Bonds
Eligible currencies	EUR	EUR
Minimum Amount Outstanding	EUR: €500MM	Local currency bonds: €1 billion
Minimum Maturity	For inclusion: Bonds should have minimum 2 years remaining to maturity Remain in the index: A bond remains eligible for the index as long as it has 6 months remaining to maturity	
Issuer	Sovereign (i.e. external law), Quasi-sovereign (100% government owned or guaranteed), Corporate, or Supranational	Sovereign only
Country	All countries are eligible	EMU countries where EUR denominated local government bonds are liquid, accessible and investible by international investors. The below table mentions the current list of eligible currencies.
Instrument Type	Only green, social, and sustainability bonds, as labelled by Climate Bonds Initiative, are eligible	
	Include: Bullet, fixed-rate or zero coupon bonds. Perpetuals, callable or puttable bonds are permitted. Exclude: Floating rate, hybrid, step-up, PIK, amortizers, Sukuk bonds, municipal bonds, structured bonds, collateral trust and equipment trust bonds, bonds with non-transparent cash flows or atypical indices used to reset coupons, etc.	Bullet, fixed-rate or zero coupon bonds
Collateral	Exclude: covered, mortgage backed, asset backed, bank guaranteed	-
Rating	Only investment grade instruments are eligible. An instrument is classified as investment grade when the middle rating from S&P, Moody's, and Fitch is investment grade (i.e. BBB- equivalent or above). When a rating from only two agencies is available, the lower has to be investment grade; and when only one agency rates a bond, that single rating has to be investment grade	

Source: JPMorgan Chase & Co.

JESG Overlay Criteria

The J.P. Morgan ESG (JESG) Green, Social, & Sustainability (GSS) IG EUR Bond Index applies the J.P. Morgan JESG methodology as an overlay to the flagship J.P. Morgan Green, Social, & Sustainability (GSS) EUR IG Bond Index.

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

ESG Providers & GSS Bond Certification Authorities	Sustainalytics RepRisk Verisk Maplecroft Climate Bonds Initiative		
JESG Scoring methodology	<p>Sovereign issuers: a simple average of each country's Verisk Maplecroft and Sustainalytics score is taken to produce the final JESG index score.</p> <p>Quasi-sovereign issuers: a simple average of each issuer's normalized RepRisk and Sustainalytics score is taken to produce the daily JESG index rank. The final JESG index score incorporates a 3-month rolling average of the daily rank in order to smooth any noise in the input data.</p>		
JESG Integration methodology	The JESG scores are divided into five bands that are used to scale each issuer's baseline index market value.		
Treatment for Certified Climate Bonds	"Certified Climate bonds", as per Climate Bonds Initiative's Climate Bonds Standards, will receive one band upgrade (unless they are already in Band 1).		
Ethical exclusions & Negative Screening	<p>Issuers are excluded based on the following criteria:</p> <ul style="list-style-type: none"> Sovereign issuers deemed not to be compliant with the 2023 version of the Towards Sustainability Quality Standard (QS23) as identified by the Central Labelling Agency of the Belgian SRI label (CLA) Corporate and quasi-sovereign issuers not in compliance with the UN Global Compact principles as identified by Sustainalytics Corporate and quasi-sovereign issuers with revenue from the following activities as identified by Sustainalytics: 		
	Category	Involvement	Description
	Controversial Weapons	Tailor-made and essential	The company is involved in the core weapon system, or components/services of the core weapon system that are considered tailor-made and essential for the lethal use of the weapon.
	Military Contracting	Weapons	The company manufactures military weapon systems and/or integral, tailor-made components for these weapons.
		Weapon-related Products and/or services	The company provides tailor-made products and/or services that support military weapons.
		Non-weapon-related products and/or services	The company provides non-weapons related tailor-made products and/or services to the military or defence industry.
	Nuclear Power	Production	The company produces nuclear power
		Supporting services	The company provides products/services that support the nuclear power industry
	Oil & Gas*	Generation	The company generates electricity from oil and/or gas
		Production	The company is involved in oil and gas exploration, production, refining, transportation, and/or storage.
		Supporting services	The company provides tailor-made products and services that support oil and gas exploration, production, refining, transportation and storage.
	Oil Sands	Extraction	The company extracts oil sands.
	Small Arms	Civilian customers (assault weapons)	The company manufactures and sells assault weapons to civilian customers.

		Civilian customers (non-assault weapons)	The company manufactures and sells small arms (non-assault weapons) to civilian customers.	0%
		Key components	The company manufactures and sells key components of small arms.	0%
		Military/law enforcement customers	The company manufactures and sells small arms to military/law enforcement.	5%
		Retail/distribution (assault weapons)	The company is involved in the retail and/or distribution of assault weapons.	0%
		Retail/distribution (non-assault weapons)	The company is involved in the retail and/or distribution of small arms (non-assault weapons).	0%
	Thermal Coal	Extraction	The company extracts thermal coal.	0%
		Power Generation	The company generates electricity from thermal coal (revenue).	0%
	Tobacco	Production	The company manufactures tobacco products, including cigarettes, cigars, tobacco, electronic cigarettes etc.	0%
	<p>* This field captures involvement in coalbed methane, extra heavy oil and arctic oil & gas, and oil & gas from unconventional production methods.</p> <p>Please note that the exclusions applied are a custom version of those captured in the JESG rules and methodology.</p> <p>Unlike the flagship JESG methodology described in the JESG rules and methodology, green bonds from issuers involved in thermal coal or oil sands are not eligible for inclusion in this index.</p>			
Frequency of JESG Rebalance	Rebalance actions related to the JESG overlay will be conducted once a quarter during the month-end rebalancing in January, April, July, and October.			

Source: JPMorgan Chase & Co.

Index Characteristics & Methodology

Pricing	Mid prices are taken from a third party pricing source, PricingDirect.
Aggregate Return	Index level total return is calculated as a market value-weighted average of bond returns using mid prices.
Rebalancing	Rebalances occur on the last weekday of the month.
Coupon Treatment	All coupons received are immediately reinvested into the index.
FX Rates	All FX rates used for hedged/unhedged returns are as of 4pm London time provided by WM/Reuters.
Hedging Strategy	Assume a 1-month currency forward position that begins on rebalance day and ends on next rebalance day.
Weighting	Market capitalization based weighting, renormalized based on JESG Band scalar with a 10% issuer cap applied.

Source: JPMorgan Chase & Co.

Local Currency Government Bonds – Eligible Countries/Currencies

Country	Currency	Country	Currency
Austria	EUR	France	EUR
Belgium	EUR	Germany	EUR
Netherlands	EUR	Ireland	EUR
Portugal	EUR	Italy	EUR
Finland	EUR	Spain	EUR

Source: J.P. Morgan, as of May 31st

Defining the Index Universe

Eligibility for the index will be determined on a continuous basis by monitoring the index criteria. Only those green bonds that meet the criteria for Climate Bonds Initiative's (CBI) green labelled database will be eligible for inclusion into the index. Similarly,

only social and sustainability bonds that meet the criteria for CBI's Social and Sustainability database will be eligible for inclusion.

Country of risk for the instruments in the index will be determined based upon the below considerations:

1. The country with the largest source of revenue. Guarantees by other entities including subsidiaries or holding companies in other countries will also be considered.
2. The headquarters or the location of the issuer's majority assets will also be considered.

New Issue Timing

A new issue that meets the index criteria is added at the month-end rebalancing provided it is present in CBI's database by the 15th of the month. Bonds entering the database after the 15th of the month will enter the index during the subsequent month-end rebalance.

Appendix

The following is a description of our methodology for calculating aggregate returns at the index level. The returns calculated are total return, price (clean) return, interest (coupon) return, treasury return, spread (excess) return, and FX (spot) return.

Total return is a means of representing the economic benefit of holding a security or portfolio position. In its simplest form, it is based on the "cash in/cash out" notion – i.e., what is paid for the security at the initial purchase versus what is received at its sale. The means of calculating the total return on a basket containing various instruments is an extension of the single-instrument total return framework.

Index Total Return

The total return is a representative measure of the performance of the underlying instruments between day $t - 1$ and day t . At its most basic, the index total return of a multi-currency portfolio can be explained by five components: price return, interest return, treasury return, spread return, and spot return.

Assume that the portfolio of securities is composed of bonds and markets in proportion to their respective total market value. Market value in this case is calculated using the amount outstanding, as well as the total price inclusive of accrued interest and principal payments. The rate of return for any day can be attributed in one of two ways:

1. Using the clean and coupon returns:

$$\text{Total Rate of Return} = (1 + \text{Price Rtn})(1 + \text{Interest Rtn})(1 + \text{Spot Rtn}) - 1$$

2. Or, alternatively, using the treasury and excess returns:

$$\text{Total Rate of Return} = (1 + \text{Treasury Rtn})(1 + \text{Spread Rtn})(1 + \text{Spot Rtn}) - 1$$

Analytic	Field Name in DataQuery	Description
Return Analytics		
Total Return	CumTotRet	(see above)
Price Return	StatClnRtnRateMid	(see above)
Interest Return	StatsIntRet	(see above)
Spread Return	StatExcessReturnMid	(see above)
Treasury Return	DailyTsyReturnMid	(see above)
ESG Analytics		
ESG JPM Rank	ESGScore	Proprietary J.P. Morgan computed ESG score
ESG Band	ESGBand	ESG band designation
To Worst Analytics		
Yield (to worst)	StatYldWrstRateMid	The lowest potential Yield on a callable security or the highest potential yield on a puttable security. The corresponding date at which this Yield is realized is referred to as the Worst Date, and is the driver for all other To Worst analytics.
Spread (to worst)	StatStpSprRateMid	The Spread Over the Treasury Zero Curve corresponding to the Worst Date. This is the basis point spread over the Treasury Zero Curve that will discount cash flows such that the Present Value will equal the Settlement Price, reflective of the Worst Date.
Modified Duration (to worst)	YTMModDurToWrstMid	A measure of the change in settlement price for a 100 bps shift in the underlying government bond Cash Coupon Curve and reflective of all cash flows to the Worst Date. It is calculated by shifting the government bond Cash Coupon Curve by 100bps up and down and calculating settlement price under each scenario.
Spread Duration (to worst)	EffSpreadDuration_Wrst	A measure of the change in settlement price for a 100 bps shift in the underlying government bond Zero Coupon Curve and reflective of all cash flows to the Worst Date. It is calculated by shifting the government bond Zero Curves by 100bps up and down and calculating settlement price under each scenario.
Spread Convexity (to worst)	EffSpreadConvexity_Wrst	A measure of the sensitivity of Spread Duration to a 100 bps shift in the underlying government bond Zero Coupon Curve and reflective of all cash flows to the Worst Date. It is calculated by shifting the government bond Zero Curves by 100 bps up and down and calculating settlement price under each scenario.
Average Life (to worst)	Avg_Life_Wrst	Average length of remaining time before the bond's principal is repaid (or when optionality is executed) as measured at the To Worst Date.
Base Analytics		
Index Dirty Price (mid)	StatValStlOrgAmtMid	Dirty mid price including adjustments for amortization and capitalization
Market Value (ESG adj.)	MktCap	Market Value (ESG methodology adjusted)
Face Amount	FaceAmtOS	Amount outstanding
Coupon	AM_ACT_PAY	Current coupon rate
Accrued interest	AM_INT_PRD	Accumulated interest since last payout
Amortization amount	AM_AMORT	Aggregated amortized principal amount
Remaining Maturity (days)	StatsDaysToMat	Number of business days from trade date to maturity date
Current Yield	StatClnRtnRateMid	Current yield
Number of bonds	Num_Bonds	Number of bonds in the index

Source: J.P. Morgan

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

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