04 August 2023

J.P. Morgan USD EM IG ESG Diversified Bond Index

Index Methodology and Profile

Highlights

The J.P. Morgan USD EM IG ESG Diversified Bond Index tracks US Dollar emerging market fixed and floating-rate debt instruments issued by corporate, sovereign, and quasi-sovereign entities. The index tracks instruments that are classified as investment grade (IG) in the established J.P. Morgan EMBI Global Diversified and J.P. Morgan CEMBI Broad Diversified and combines them with a market capitalization-based weighting scheme. 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 returns and statistics are available since December 2012.

Index Criteria

Instrument Type	**Includes**: Fixed-rate, floating and zero-coupon bonds, capitalization/amortizing bonds **Excludes**: Convertibles, inflation-linked instruments[1] and defaulted corporate issues
Remaining Maturity	**Entry**: Only those instruments with at least 2.5 years until maturity are considered for inclusion **Exit**: At each month-end rebalance, instruments that fall below 6 months to maturity are excluded from the index
Minimum Issue Size	Only issues with a current face amount outstanding of $500 million or more are considered for inclusion[2]
Currency Denomination	Only USD denominated bonds are included. Instruments where the amount of coupon or redemption payment is linked to an exchange rate are not eligible for inclusion
Issuers	Corporate, sovereign and quasi-sovereign instruments are eligible in the index. Quasi sovereign entities are defined as being 100% guaranteed or 100% owned by the government. Corporate issuers must be one of the following: (1) headquartered in an EM country or (2) 100% of the issuer's assets are within EM economies, or (3) issuer must have 100% secured assets within EM economies
Country	**Sovereign and Quasi-sovereign entities:** Inclusion is limited to countries whose country's GNI per capita is below the J.P. Morgan Index Income Ceiling (IIC) for three consecutive years and country rating is IG. Countries are removed from the index if the IIC level and the country's sovereign credit rating is below BBB-/Baa3 **Corporate entities**: Must be domiciled as defined by J.P. Morgan Corporate Indices geographic categorization
Credit 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.

[1] Bonds with embedded options and warrants are eligible for inclusion if the options/warrants are attached to the instruments that would otherwise be included in the index and the prices are quoted cum options or warrants

[2] A bond is removed from the index when its current outstanding amount falls below $0.5 billion

JESG Overlay Criteria

The J.P. Morgan USD EM IG ESG Diversified Bond Index applies the J.P. Morgan JESG methodology as an overlay to the flagship J.P. Morgan EMBI Global Diversified 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 & Green Bond certification authorities	Sustainalytics RepRisk Verisk Maplecroft Climate Bonds Initiative
JESG Scoring methodology	**Sovereign issuers:** a simple average of each country's Verisk Maplecroft and Sustainalytics score is taken to produce the final JESG index score. **Corporate & 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.
JESG Integration methodology	The JESG scores are divided into five bands that are used to scale each issue's baseline index market value.
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.

JESG Ethical exclusions & Negative Screening	Issuers are excluded based on the below criteria:
	• Sovereign issuers with JESG scores less than 30 and corporate & quasi-sovereign issuers with JESG scores less than 20
	• Corporate & quasi-sovereign issuers not in compliance with UN Global Compact principles as identified by both RepRisk and Sustainalytics
	• Corporate & quasi-sovereign Issuers with revenue from the following sectors:
	  ○ Oil sands (any extraction involvement) *
	  ○ Thermal Coal (any extraction or power generation involvement) *
	  ○ Tobacco (any production involvement)
	  ○ Controversial weapons (any tailor-made/essential involvement)
	  ○ Small Arms (Any involvement in assault and non-assault weapons, key components, or over 10% revenue from military/law enforcement weapons)
	  ○ Military contracting (revenues over 10% from weapons)
	
	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.
	*Green bonds from issuers involved in thermal coal or oil sands remain eligible for JESG inclusion to incentivize transition to less pollutive revenue streams.

Source: JPMorgan Chase & Co.

Index Characteristics and Methodology

Pricing	Bid and Ask prices are taken from a third-party pricing source, PricingDirect
Aggregate Return	Weighted average of bond returns using bid prices
Rebalancing	Rebalances on the last US business day of the month
Coupon Reinvestment	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 WMR/Refinitiv
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, subject to adjustments based on JESG scores
Holiday Calendar	Follows US bond market calendar set by Emerging Markets Trader Association (EMTA)

Appendix

Defining the universe of eligible countries

For sovereign and quasi-sovereign entities, following the 2018 Index Governance Review, a country will be eligible for the EM sovereign suite of indices if it either meets the GNI per capita-based Index Income Ceiling (IIC) criterion or the PPP-based Index PPP Ratio (IPR) criterion. J.P. Morgan defines the Index Income Ceiling (IIC) as the GNI per capital level that is adjusted every year by the growth rate of the World GNI per capita, Atlas method (current US$), provided by the World Bank annually. An existing country may be considered for removal from the index if its GNI per capita is above the Index Income Ceiling (IIC) for three consecutive years and the country's long term foreign currency sovereign credit rating (the available ratings from all three agencies: S&P, Moody's & Fitch) is A- /A3/A- (inclusive) or above for three consecutive years.

For the IPR, it is calculated, as below, from the one-year lagged GDP data available in IMF's World Economic Outlook publication. The EM IPR threshold is an indexed number which mimics the changes to the World IPR. IPR = GDP (current prices, USD) / GDP (current prices, PPP dollars) * 100. IPR criterion states that a country's IPR should below the EM threshold for three consecutive years, to be eligible.

Corporate entities must be domiciled as defined by J.P. Morgan Corporate Indices geographic categorization.

Instrument type

The J.P. Morgan USD EM IG ESG Diversified Bond Index includes both fixed and floating rate instruments, as well as capitalizing/amortizing bonds. Bonds with embedded options and warrants are eligible for inclusion if a) the options/warrants are attached to instruments that would otherwise be included in the index and b) the quotation convention—as recommended by the Emerging Markets Traders Association (EMTA)—is for instrument prices to be quoted cumulative options or warrants. Convertible bonds are not eligible for inclusion into the index. Corporate issues that are defaulted are excluded from the index.

Issuer type

The J.P. Morgan USD EM IG ESG Diversified Bond Index contains instruments issued by corporate, sovereign and quasi-sovereign entities from index-eligible countries. Historically, any quasi-sovereign issue was considered eligible for inclusion. As of May 31, 2002, we strengthened our definition of "quasi-sovereign" as an entity that is 100% guaranteed or 100% owned by the national government and resides in the index eligible country.

Weighting Methodology

The J.P. Morgan USD EM IG ESG Diversified Bond Index combines the IG portion of the J.P. Morgan EMBI Global Diversified and the IG portion, minimum $500mn bond issuance size of the J.P. Morgan CEMBI Broad Diversified using a market weighted approach. The underlying indices, J.P. Morgan EMBI Global Diversified and J.P. Morgan CEMBI Broad Diversified, apply a diversification methodology separately which limits the weights of those index countries with larger debt stock by only including a specified portion of these countries' eligible current face amounts of debt outstanding. Once the instrument allocations are derived for each country, the current settlement price for each instrument is applied to its index allocation to calculate the market capitalization of each issue in the index. The weight of each instrument in the J.P. Morgan USD EM IG ESG Diversified Bond Index is then determined by dividing its market capitalization by the total market capitalization for all the index's instrument allocations. The result represents the weight of each issue expressed as a percentage of the index. By allocating their portfolios according to these exact instrument weights, and accounting for coupon reinvestments and instrument allocation changes, investors can replicate the performance of the J.P. Morgan USD EM IG ESG Diversified Bond Index.

The diversification methodology of the underlying indices, J.P. Morgan EMBI Global Diversified and J.P. Morgan CEMBI Broad Diversified, anchors on the average size of the countries in the index and the debt stock size of the largest country in the index.

We define **Index Country Average (ICA)** = Σ(Ctry Face Amount) / (No. of Countries in the index)
Based on the ICA, the diversified face amount for any country in the index is derived according to the following rules:

1. The largest country based on face amount will be capped at double the average country debt stock in the index (ICA*2). This is the maximum threshold and sets the scale to determine the diversified face amounts of other countries in the index.
2. If a county's debt stock is below the index country average (ICA), the entire amount will be eligible for inclusion.
3. Countries whose debt stock falls between the index country average (ICA) and double the average (ICA * 2) will be linearly interpolated.

Subsequently, the diversified (adjusted) face amount determined using the above step is then converted to a market value (based on dirty price), which is then converted to an index weight percentage based on the proportion of the total index market capitalization that the country represents. Any excess weight above the cap will be redistributed to smaller countries that are below the cap to limit concentration risk.

Diversified Country Face Amount=

$$\begin{cases} \text{ICA} * 2 & \text{, if } \text{FA}_{max} \\ \text{ICA} + \dfrac{\text{ICA}}{\text{FA}_{max} - \text{ICA}} * (\text{Ctry FA} - \text{ICA}) & \text{, if Ctry FA} > \text{ICA} \\ \text{Ctry FA}\ , & \text{, if Ctry FA} \leq \text{ICA} \end{cases}$$

where Ctry FA represents the non-diversified country face amount and FAmax represents the Face Amount of the Largest Country.

Finally, a threshold (a maximum cap of 10%) is applied at the country level to improve diversification; i.e. sum of all the issuer weights within the country must be equal to or less than the maximum cap/threshold. Excess weight is re-distributed to other countries below the threshold. The maximum cap/threshold will be reviewed on a periodic basis and adjusted accordingly.

New Issue Timing
A new issue that meets the J.P. Morgan USD EM IG ESG Diversified Bond Index admission requirements is added to the index on the first month-end business date after its issuance, provided its settlement date falls before the last US business day of the month. Prior to January 2021, the cut-off date for bonds to settle to be eligible for inclusion on the same month-end was the 15th of the month.

The first exception applies to a new issue that is released as part of a debt exchange program. At the month-end rebalancing date immediately following this event, the amount of debt retired in this exchange would be removed from the index, and the new issue would be added to the index (provided official exchange results are made available in a timely manner AND the issue settles by month end).

The second exception concerns Reg S securities. An instrument that is issued purely in reliance on Regulation S of the US Securities Act of 1933 and not pursuant to Rule 144A will be ineligible for inclusion in the index until it is seasoned (that is, until the expiration of the relevant Regulation S restricted period). The date at which the seasoning restriction is lifted will effectively be the new "settlement" date.

If an announcement is made for a bond to be called, it is removed the month-end prior to its call date. If an announcement is not made in time for the bond to be removed the prior month-end, it will be removed the first month-end following the announcement.

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