

J.P. Morgan EM Enhanced Multi-Factor Local Ccy Bond Index

Index Methodology and Profile

Highlights

The J.P. Morgan Emerging Market Enhanced Multi-Factor Local Currency Bond Index ("The Index") aims to track the performance of eligible local currency debt issued by Emerging Market Sovereigns while seeking to generate incremental returns using short term (1-5 Year maturity) US\$ denominated EM sovereign/ quasi-sovereign bonds and an overlay of momentum and carry factor exposures to EM FX currencies. The Index is based on the composition and established methodology of the J.P. Morgan EM Local Currency Government Bond benchmark (GBI-EM Global Diversified). EM Local currency exposure of The Index is replicated by investing 80% in eligible EM Local currency bonds with minimum maturity of 3 years and 20% in EM FX forwards, as measured by the corresponding J.P. Morgan EM Local Market Index (ELMI+) country sub-indices. The Index seeks to achieve incremental return enhancement by investing:

- (i) 15% of the residual cash in eligible USD EM short term sovereign/ quasi-sovereign bonds (as measured by a custom EMBIG Diversified 1 – 5 year maturity sub index),
- (ii) 5% of the residual cash in US Libor (as measured by the J.P. Morgan US Cash Index), and
- (iii) In carry and momentum overlays that are implemented by tilting EM FX forward exposures toward the aforementioned factors

Index Methodology

Figure 1: Summary of Index Eligibility Criteria (Base Index) ¹

Criteria	EM Local Currency Governments 3+ years (80%)	EM FX Forwards (20%)	EM USD Sovereigns/Quasi-Sovereigns 1-5 years (15%)
Instrument Type	Fixed coupon bonds	Country sub-indices of the J.P. Morgan EM Local Market Index (ELMI+)	All fixed, floaters, amortizers, and capitalizers
Remaining Maturity	Bonds with greater than 3 years to maturity	Not Applicable	Inclusion: Remaining maturity between 1 and 5 years Exclusion: At least 1 year until maturity
Amount Outstanding	Local Issues: Minimum \$1billion Global Issues: Minimum \$500 million	Not Applicable	Minimum \$500 million
Currency	All eligible currencies from the J.P. Morgan GBI-EM Global Diversified	All eligible currencies from the J.P. Morgan GBI-EM Global Diversified	Only USD denominated bonds. Instruments where the amount of coupon or redemption payment is linked to an exchange rate are not eligible for inclusion
Country Eligibility	Index Entry: Inclusion is limited to countries whose country's GNI per capita is below the JPMorgan Index Income Ceiling (IIC) for three consecutive years. ² Index Exit: Countries are removed from the index if the IIC level AND the country's sovereign credit rating is A-/A3 or above for three consecutive years.		
Capital Controls	Index excludes countries with explicit capital controls, but does not factor in regulatory/tax hurdles in assessing eligibility, unless such regulatory or tax hurdles significantly hinder investors' ability to replicate the index		Not Applicable
Maximum weight per country	10%	10%	5%

¹ The remaining 5% of the residual cash is invested in Short Term US Cash as represented by the J.P. Morgan 3Month US Cash Index.

² J.P. Morgan defines the Index Income Ceiling (IIC) as the GNI per capita 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. The IIC is currently \$19,065 as of January 2017.

Figure 2: Summary of Base Index Characteristics and Methodology

Characteristics and Methodology	EM Local Currency Governments 3+ years (80%)	EM FX Forwards (20%)	EM USD Sovereigns/Quasi-Sovereigns 1-5 years (15%)
Pricing	Bid and Ask prices are taken from a third party pricing source ³		
Aggregate Return	Weighted average of bond returns using mid side prices	Weighted average of forward returns using mid side prices	Weighted average of bond returns using bid side 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 (i.e. Good Friday), indices are rebalanced on the previous business day. Monthly.	Rebalances on the last US business day of the month, based on the holiday recommendation from EM Trading association (EMTA).	
Coupon Treatment	Immediately reinvested in to the respective local market returns	Not applicable	Immediately reinvested into the index
FX Rates	All FX rates are as of 4PM London time provided by WM Reuters		Not Applicable

Defining the universe of GBI-EM instruments

The GBI-EM consists of regularly traded, fixed-rate, domestic currency government bonds which international investors can readily access. The index excludes countries where local market investing is subject to explicit capital controls, but eligibility consideration does not factor in regulatory/tax hurdles.

Eligibility for local currency issues is determined using the following criteria:

Instrument type

The GBI-EM indices only include fixed coupon instruments. Floating-rate and capitalizing/amortizing bonds are not eligible for index inclusion. Additionally, 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.

Carry and momentum overlays

The benchmark seeks to reduce drawdowns by scaling the currency positioning of the index. As both carry and momentum overlays are implemented by overweighting and underweighting currencies, there is no net FX exposure. The overlays are implemented as follows:

Carry: Over-weights the top one-third of high yielding currencies and underweights the bottom third of low yielding currencies

Momentum: Over-weights the top one-third of the best performing currencies and underweights the bottom third of worst performers, based on the past returns

Emerging Market Enhanced Multi-Factor Local Currency Bond Index

The EM Enhanced Multi-Factor Local Currency Bond Index follows similar logic, methodology and calculations as the flagship benchmark in the GBI-EM Global Index and EMBI series. The composition of bonds, index criteria, and all surrounding governing rules of inclusion/exclusion follow the composition and rules in the flagship EM indices, subject to the additional modified index criteria listed in this document.

³ PricingDirect Inc., a market-based professional valuation service and a wholly owned subsidiary of JPMorgan Chase & Co, is utilized as the primary source for instrument level pricing ensuring transparency around pricing sourcing and consistency/accuracy of index constituent valuations

Index Profile and Characteristics

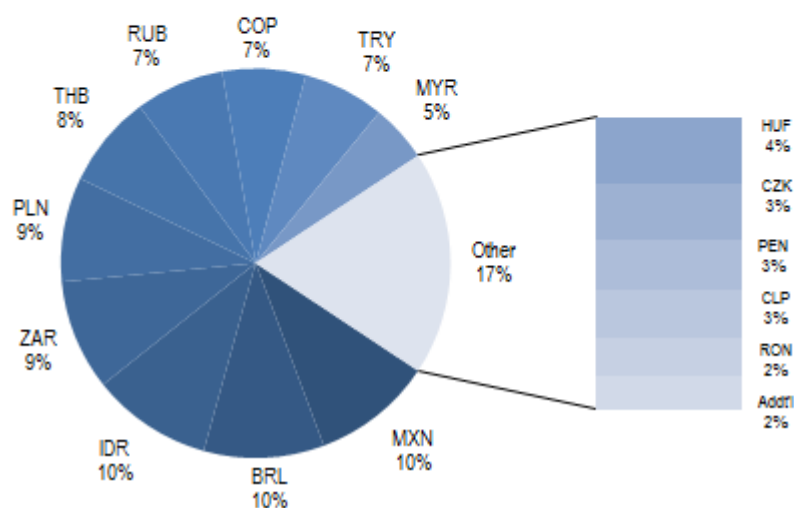
- As of October 31st, 2017, The Index contains 385 bonds from 45 sovereign and 52 quasi-sovereign issuers across 53 countries.
- There are 19 EM FX exposures in the Local currency segment of the index.
- The index maintains an Investment Grade credit rating, with the average index rated at BBB.
- The average index yield is 5.69% with an average duration of 5.2 years.

Figure 3: Summary of Net Exposure ⁴

Asset Class	Net Weight (%)
Local Currency Sovereign	80
USD Sovereign	15
Cash	5
Total	100

Region	Net Weight (%)
Latin America	34
Europe	33
Asia	23
Africa	9
Middle East	1
Total	100

Currency Positioning



Source: J.P. Morgan estimates.

⁴ Estimated index compositions are provided as a courtesy for general information purposes only and are subject to potentially significant changes prior to actual calculation of the index composition. Final estimates will be published to J.P. Morgan Markets ("JPMM"). For more information, please consult JPMM or your J.P. Morgan representative. Full disclosures may be found at <https://www.jpmmorgan.com/pages/jpmmorgan/ib/girg>.

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