J.P.Morgan

Global Index Research

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J.P. Morgan Emerging Markets Risk-Aware Bond Index

Methodology and Factsheet

Highlights

The J.P. Morgan Emerging Markets Risk-Aware Bond Index tracks liquid, US dollar emerging market fixed and floating-rate debt instruments issued by sovereign and quasi sovereign entities. The index is based on the established flagship JPMorgan EMBI Global Div. Index, and uses a rules-based filtering and alternative risk weighting three-step process. The first step seeks to achieve a more liquid subset of the starting universe by filtering out instruments with smaller face amounts outstanding and those that are closer to maturity. The second step seeks to limit country-specific risk by removing those countries with the highest spread risk. Finally, the third step seeks to reallocate the remaining countries to target a stable allocation of spread risk from its investment grade and high yield subcomponents. The Returns and Statistics are available from December 2009.

Index Criteria:

Instrument type: Includes both fixed and floating rate securities along with capitalizing/amortizing bonds. Excludes convertibles, inflation-linked instruments.[1]

Issuer type: Only those bonds issued by sovereign and quasi sovereign entities are eligible in the index. Quasi sovereign entities are defined as being 100% guaranteed or 100% owned by the government.

Remaining maturity: Only those instruments with at least 2.5 years until maturity are considered for inclusion. At each month-end, instruments that will fall below 24 months to maturity during the upcoming month, will be excluded from the Index [2]

Amount Outstanding: Only issues with a current face amount outstanding of $1 billion or more are considered for inclusion.[3]

Currency: 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.

Country: Inclusion is limited to countries whose country's GNI per capita is below the JPMorgan Index Income Ceiling (IIC) for three consecutive years. Current IIC level is $19,065. 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.

Index Characteristics and Methodology:

Pricing: Bid and Ask prices are taken from a third party pricing source.[4]

Aggregate Return: Index/Country level total return is calculated as a weighted average of bond returns using bid side prices.

Rebalancing: The Index is rebalanced semi-annually (March and September) across countries while each country basket is reconstituted on a monthly basis on the last US business day. Please see 'Diversification Methodology section below for more details on the country weights. [5]

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.-At the semi-annual rebalance, if there is a country with 1 or 2 bonds with less than 31 months, it will be reviewed for removal. 3- A bond is removed from the index when its current outstanding amount falls below $1 billion. 4-Vendor is currently the third party PricingDirect.5-The index can have ad hoc rebalances off the scheduled month-end dates due to index events.

Coupon Treatment: All coupons received are immediately reinvested into the index.

Semi-Annual Diversification Methodology:

Step 1: The index will filter in for instruments with above US$1bn face amount outstanding and more than 2 years till maturity. Then the composition will be re-weighted using the standard EMBI diversification methodology.

Step 2: 10% market values of the highest risk countries are excluded. Country risk computed based on duration-times-spread (DTS) is used as the risk basis for exclusion.

Step 3: The remaining countries are reweighted to target a stable ratio of spread risk between Investment Grade and High Yield, subject to a maximum weight of 3x the derived weights from Step 2.

Lastly, once the country weights are established, instrument weights within country are derived based on market value.

Profile of J.P. Morgan Emerging Markets Risk-Aware Bond Index in comparison to flagship benchmark

	J.P. Morgan Emerging Markets Risk-Aware Bond Index	EMBIG Diversified
Current Avg Rating (Moody's/S&P/Fitch)	Ba1/BB+/BB+	Ba1/BB+/BB+
Inception Date	Dec 2009	Dec 1993
Launch Date	Nov 2017	July 1999
Rebalance Date	The Index is rebalanced semi-annually across countries while each country basket is reconstituted on a monthly basis on the last US business day. More information can be found in the 'Diversification Methodology' section above.	Last US business day of the month
Currency	US$	US$
Holiday Calendar	Follows US bond market calendar set by Emerging Markets Trader Association (EMTA)	Follows US bond market calendar set by Emerging Markets Trader Association (EMTA)
Pricing Source	Bid and Ask prices are taken from a third party pricing source[4]	Bid and Ask prices are taken from a third party pricing source[3]
FX Spot / Forward Rate	WM/Reuters 4pm London rate	WM/Reuters 4pm London rate
Coupon Reinvestment	All coupons received are immediately reinvested into the index	All coupons received are immediately reinvested into the index
Hedging Strategy	Assume a 1-month currency forward position that begins on rebalance day and ends on next rebalance day	Assume a 1-month currency forward position that begins on rebalance day and ends on next rebalance day
Country	GNI per capita must be below the JPMorgan Index Income Ceiling (IIC) for 3 consecutive years	GNI per capita must be below the Index Income Ceiling (IIC) for 3 consecutive years
Instrument Type	All fixed, floaters, amortizers, and capitalizers	All fixed, floaters, amortizers, and capitalizers
Min Face Amt Outstanding	US$1bn	US$500mm
Diversification Methodology	The Index's methodology analyses all of the components of the Parent Index using a proprietary methodology that applies the 3 steps multi-factor criteria to the Parent Index. More information can be found in the 'Diversification Methodology' section above.	Limits the weights of the larger index countries by only including a specified portion of those countries eligible current face amounts of debt outstanding for normalized weights
Maturity required for initial inclusion	At least 2.5 years till maturity	At least 2.5 years till maturity
Maturity required to maintain inclusion	At least 2 years till maturity[2]	At least 1 year till maturity
Includes quasi-sovereign?	✓	✓
Face Amt Diversification?	✓	✓
Bloomberg Ticker	JPEIRWTR	JPGCCOMP

Source: JPMorgan Chase & Co.

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

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Appendix

Defining the universe of eligible countries

A country's GNI per capita must be below the Index Income Ceiling (IIC) for three consecutive years to be eligible for inclusion to the J.P. Morgan Emerging Markets Risk-Aware Bond Index. J.P. Morgan defines the Index Income Ceiling 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. The current IIC level is $19,065.

Instrument type

The J.P. Morgan Emerging Markets Risk-Aware 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.

Issuer type

The J.P. Morgan Emerging Markets Risk-Aware Bond Index contains only those bonds issued by 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 Emerging Markets Risk-Aware Bond Index limits the weights of those index countries with larger debt stocks by only including a specified portion of these countries' eligible current face amounts of debt outstanding. The J.P. Morgan Emerging Markets Risk-Aware Bond Index is geared toward managers who want diversification or those who face limitations on the amount of portfolio exposure they can take to individual issuers. Once these instrument allocations are derived for each country, the current settlement price for each instrument is applied to its J.P. Morgan Emerging Markets Risk-Aware Bond Index's allocation to calculate the market capitalization of each issue in the index. The weight of each instrument in the J.P. Morgan Emerging Markets Risk-Aware Bond Index is then determined by dividing its market capitalization by the total market capitalization for all of the J.P. Morgan Emerging Markets Risk-Aware Bond Index's instrument allocations. The result represents the weight of each issue expressed as a percentage of the J.P. Morgan Emerging Markets Risk-Aware Bond Index. By allocating their portfolios according to these exact instrument weights, and accounting for coupon reinvestments and index instrument allocation changes, investors can replicate the performance of the J.P. Morgan Emerging Markets Risk-Aware Bond Index.

The underlying EMBIGD diversification methodology 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)** = ∑(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.

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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.

New Issue Timing

A new issue that meets the J.P. Morgan Emerging Markets Risk-Aware Bond Index admission requirements is added to the index on the first month-end business date after its issuance, provided its issue date falls before the 15th of the month. A new issue whose issue date falls on or after the 15th of the month is added to the index on the last business day of the next month. The first exception applies to a new issue that is released as part of a debt exchange program. For example, assume a country exchanges a portion of its outstanding debt for a new issue after the 15th of the month. At the month-end rebalancing date immediately following this event, the amount of debt retired in this exchange would be removed from the J.P. Morgan Emerging Markets Risk-Aware Bond 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 J.P. Morgan Emerging Markets Risk-Aware Bond 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 "issue" date, at which point the 15th of the month rule will apply.

If an announcement is made for a bond to be called, it is removed the month-end prior to its call date on the basis of having less than 24 months remaining until maturity. 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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