

## J.P. Morgan EMU Government Bond Index

### Methodology and Factsheet

#### Highlights

The J.P. Morgan EMU (Economic and Monetary Union) Government Bond Select Maturity Index aims to track the performance of eligible fixed-rate, euro-denominated domestic government debt issued by Eurozone countries. The index currently includes liquid government bonds issued by Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal and Spain (Greece was removed in April 2012 due to restructuring of debt).

#### Index Criteria

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

#### Index Characteristics and Methodology

<b>Pricing:</b>	Mid prices are taken from a third-party pricing source, PricingDirect
<b>Aggregate Return:</b>	Weighted average of bond returns using mid prices
<b>Rebalancing:</b>	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
<b>Coupon Reinvestment:</b>	Immediately reinvested into the respective local market returns
<b>FX Rates:</b>	All FX rates used for hedged/unhedged returns are as of 4pm London time provided by WM/Reuters
<b>Hedging Strategy:</b>	Hedged return is available. It assumes a 1-month currency forward position that begins on rebalance day and ends on next rebalance day
<b>Credit Rating:</b>	<b>Inclusion:</b> A- or above based on the middle-of-three ratings from Moody's, S&P, Fitch <b>Exclusion:</b> No credit rating limit
<b>Price Timing:</b>	As of the local market close
<b>Settlement Convention:</b>	Local market country convention
<b>Holiday Calendar:</b>	Index levels are published on all weekdays. Individual instrument analytics follow respective local market calendar

Source: JPMorgan Chase & Co.

#### Defining the universe of eligible countries

The EMU Government Bond Index consists of regularly traded, fixed-rate, domestic currency government bonds issued by Eurozone countries.

Eligibility for euro-denominated domestic debt issues is determined using the following criteria:

### Instrument type

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

### Liquidity

A key feature that distinguishes our indices from other index products is the strict enforcement of liquidity criteria in the selection of instruments. 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. For the J.P. Morgan Government Bond Index body of data, 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

### Bloomberg Ticker <JNEUGGEU>

The index rebalances on the last weekday of each month. Bonds comprising the indices are required to have more than 6 months remaining to maturity on rebalance day for inclusion in the index.

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.

The index is weighted by the component countries' aggregate normalized market capitalization (dirty price times par outstanding). The weights reset monthly on each rebalance day, and changes based on bond performance for the remainder of that month.

Accrued interest is assigned to the bonds in the index according to the specific settlement and day count conventions of each market.

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](mailto:index.research@jpmorgan.com)

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## Global Index Research

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