

**S&P Dow Jones
Indices**

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Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index Guide

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1) Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index

The Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index is a total return index designed to track the performance of a portfolio comprised of EUR-denominated investment grade government bonds issued by the five highest yielding countries among the member countries of the Eurozone.

The Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index is rebalanced once a month at month-end (the “rebalancing date”).

Like all other iBoxx indices the Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index is priced based on multiple data inputs. The Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index uses multi-source prices as described in the document Markit iBoxx Pricing Rules publicly available on www.ihsmarkit.com.

This document covers the index selection rules and calculation methodology.

2) Bond selection rules

The following selection criteria are applied to select the constituents for the Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index:

- Bond type
- Credit rating
- Issuer type
- Highest issuer yielding countries
- Time to maturity
- Amount outstanding

2.1) Bond type

The Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index includes only EUR denominated bonds. The list of eligible bond types is as follows:

- Fixed coupon bonds (“plain vanilla bonds”)
- Zero coupon bonds
- Step-up bonds
- Event-driven bonds
- Bonds with specific call options
- Soft bullet bonds. These are bonds with an initial fixed-coupon period and a variable or step-up coupon period thereafter that are structured so that they are expected to be redeemed at the end of the initial period.

The following bond types are specifically excluded from the index:

- Sinking funds and amortizing bonds
- Other callable and undated bonds
- Floating rate notes and other fixed-to-floater bonds
- Optionally and mandatory convertible bonds
- Collateralized Debt Obligations (CDOs) and bonds collateralized by CDOs
- Bonds with differences between accrual and coupon payment periods and monthly-paying bonds.

- Retail bonds
- Private placements.

For retail bonds and private placements, publicly available information is not always conclusive and the classification of a bond as a retail bond or a private placement will be made at IHS Markit’s discretion based on the information available at the time of determination. IHS Markit may consult with the specific Index Advisory Committees to review potential retail bonds or private placements. Any bond classified as retail or private placement is added to the list of excluded private placements and retail bonds. The list is published on www.ihsmarkit.com for future reference and to ensure decision’s consistency.

In instances where a new bond type is not specifically excluded or included according to the published index rules, IHS Markit will analyze the features of such securities in line with the principles set out in 2.1 of this guide. IHS Markit may consult the specific Index Advisory Committees. Any decision as to the eligibility or ineligibility of a new bond type will be published and the index rules will be updated accordingly.

2.2) Credit rating

All bonds in the Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index must have an iBoxx Rating of investment grade. Ratings from the following three credit rating agencies are considered for the calculation of the iBoxx Rating:

- Fitch Ratings
- Moody's Investor Service
- S&P Global Ratings

Investment grade is defined as BBB- or higher from Fitch Ratings and S&P Global Ratings and Baa3 or higher from Moody's Investor Service.

If a bond is rated by more than one of the above agencies, then the iBoxx rating is the average of the provided ratings. The rating is consolidated to the nearest rating grade. Rating notches are not used. For more information on how the average rating is determined, please refer to the *iBoxx Rating Methodology* document. The methodology can be found on www.ihsmarkit.com under *Methodology*.

2.3) Issuer type

Bonds issued by a central government of a member country of the Eurozone and denominated in euro or in a pre-euro currency.

2.4) Highest yielding issuer countries selection

The 5 highest yielding issuer countries are reselected every month at each monthly rebalance as follows:

- The 5 highest yielding eligible countries are selected every month at each monthly rebalance.
- To replace a country in the existing index, the yield difference between the entering country and exiting country should be larger than the weighted average bid-ask spread of the entering country.
- If the entering country has a weight of more than one third of the index after the rebalancing, the threshold is required to be 1.5 times the weighted average bid-ask spread of the entering country.

The highest yielding countries are determined by calculating the yield of a (hypothetical) bond with a maturity of exactly 5 years. The yield of the bond is calculated from the annual yield of two bonds with a maturity of close to 5 years. Mid-prices are used in calculating the annual yield of the selected bonds. The 5-year point is chosen as the reference point since the yield curves of the Eurozone countries are more densely populated around the 5-year point. However, the exact point on the yield curve used to determine the ranking may be reviewed from time to time in order to reflect the current market conditions of the underlying Eurozone countries.

Step 1 – Select eligible countries

To be eligible for the index, countries need to have at least 2 bonds in the 1Y-10Y maturity band of the Markit iBoxx EUR Benchmark universe 5 business days before the end of the rebalancing month. Countries with fewer bonds are not eligible.

Step 2 - Determine country yields

The annual yields at the reference time to maturity point (which will be referred as reference point going forward) are calculated by linear interpolation from two bonds (B_1 and B_2) with a maturity close to 5 years. Whenever possible, B_1 will have a maturity of 5 years or less and B_2 will have a maturity of 5 years or more.

B_1 is chosen according to the following sequential procedure:

1. Select the most recently issued bond with a maturity between 4 and 5 years.
2. If no bond is available in the 4 to 5 year maturity segment, the most recently issued bond from the 1 to 4 year maturity segment is selected
3. If no bond is available in the 1 to 5 year segment than a bond is selected from the 5 to 10 year segment according to procedure described for B_2 below, except that the bond B_2 itself is not eligible for selection

B_2 is chosen according to the following sequential procedure:

1. Select the most recently issued bond with a maturity between 5 and 6 years
2. If no bond is available in the 5 to 6 year maturity segment, the most recently issued bond from the 6 to 10 year maturity segment is chosen
3. If no bond is available in the 5 to 10 year segment than a bond is selected from the 1 to 5 year segment according to procedure described for B_1 above except that the bond B_1 itself is not eligible for selection

The calculation of the reference yields is based on the mid prices of the underlying securities. The interpolated annual yield is calculated as follows:

$$AY_{interpolated} = \frac{AY_{2,t} - AY_{1,t}}{TTM_{2,t} - TTM_{1,t}} (TTM_{ref} - TTM_{1,t}) + AY_{1,t}$$

where:	
TTM_{ref}	denotes the 5Y reference time to maturity point
$AY_{interpolated}$	denotes the interpolated annual yield at the 5Y reference time to maturity points on date t
$TTM_{1,t}$	denotes the time to maturity of the bond B_1 on date t
$TTM_{2,t}$	denotes the time to maturity of the bond B_2 on date t
$AY_{1,t}$	denotes the annual yield of the bond B_1 on date t
$AY_{2,t}$	denotes the annual yield of the bond B_2 on date t

Step 3 - Determination of the monthly country ranking

The ranking for the countries is determined 5 days prior to the rebalancing day (the “ranking determination date”).

The reference yield for the ranking is the average of the 5 year daily yield calculated in step 2 for the last 5 business days prior to the ranking determination date, including the 5th-last business day of the month.

Once the interpolated annual yields are calculated, the countries are sorted and the countries with the largest interpolated annual yields are selected to be included into the index.

If two countries have the same average yield, the country with the larger amount outstanding is selected.

In case one of the top 5 countries is no longer eligible for the broad Markit iBoxx EUR index in between the publication of the ranking and the publication of the final membership list for the Markit iBoxx EUR

indices two business days before the end of the month, it is replaced with the highest ranked unselected country.

Any change in the reference point for the yield calculation will be published at least 4 weeks before becoming effective.

2.5) Time to maturity

To qualify for the index all eligible bonds must have a remaining time to maturity of at least 1 year at the rebalancing date. The time to maturity is calculated from the rebalancing date to the workout date of the bond by using the day count convention of the bond.

2.6) Amount outstanding

All bonds must have a minimum amount outstanding of EUR 2 billion in order to be eligible for the indices.

2.7) Bond capping

The weight of any bond is capped at 20% of the overall index.

3) Index calculation

3.1) Static data

Information used in the index calculation is sourced from offering circulars and checked against standard data providers.

3.2) Bond prices

For more details please refer to the *Markit iBoxx Pricing Rules* document, available in the *Methodology* section of the iBoxx Documentation page on www.ihsmarkit.com.

3.3) Rebalancing process

The Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index is rebalanced monthly on the last business day of the month after the close of business. Changes to outstanding amounts are only taken into account if they are publicly known three business days before the end of the month. Changes in ratings are only taken into account if they are publicly known two business days before the end of the month. New bonds issued are taken into account if they are publicly known to settle until the last calendar day of the month, inclusive, and if their rating has become known at least three trading days before the end of the month.

A preliminary membership list is published on the 6th calendar day of the month (moved to the next business day in case of holiday/weekend).

Three business days before the end of each month, a membership list with final amount outstanding for each bond is published.

Two business days before the end of each month, the rating information for the constituents is updated and the list is adjusted for all rating changes which are known to have taken place two trading days before the end of the month. Bonds which are known to have been upgraded to investment grade two trading days before the end of the month are not included in the membership, but bonds which are known to have been downgraded to sub-investment grade two trading days before the end of the month do get excluded from the membership. However, if any bonds which are part of the broader EUR universe become eligible two business days prior to rebalancing because of rating or amount changes, they will be included in the Index.

On the last business day of each month, IHS Markit publishes the final membership with closing prices for the bonds, and various bonds analytics based on the index prices of the bonds.

3.3.1) Weekly preview

In addition to the regular monthly rebalancing, a preview list (including sector classification for new bonds) is published each Friday with predicted changes to the index constituents at the next rebalancing. The preview list includes the next month's index constituents and shows bonds joining or leaving the indices at the next rebalancing, based on information available on such Fridays.

The first weekly preview will be published on the Friday that is at least three business days after the preceding month-end rebalance.

3.4) Index data

The calculation of the index is based on bid prices. New securities are included in the index at their respective ask prices when they enter the index family. In the event that no price can be established for a particular security, the index continues to be calculated based on the last available price. This might be the case in periods of market stress, or disruption as well as in illiquid or fragmented markets. If the required inputs become impossible to obtain, IHS Markit may consult market participants prior to the next rebalancing date. Decisions are made publicly available on a timely basis and IHS Markit may refer back to previous cases.

The index is calculated as end-of-day and distributed once daily after 5:15 p.m. CET. The index is calculated every day except on common European bank holidays. In addition, the index is calculated with the previous business day's close on the last calendar day of each month irrespective of holidays and weekends. If the index is calculated on a day that is a non-business day, then the prices from the previous trading day will be carried forward and the index will be calculated using those prices and the current accrued interest and coupon payment data.

The rebalancing takes place after close of market on the last trading day of a rebalancing month.

The indices are transaction cost adjusted. For specific cost factor calculation formulae please refer to the Markit iBoxx Bond Index Calculus document, available in the Methodology section of the Markit iBoxx Documentation page on www.ihsmarkit.com.

3.5) Index and analytics weightings

The amount outstanding of each bond is used to calculate its index weight. The Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index is a volume-weighted index, with a bond's market value as the weighting factor. The amount outstanding of a bond is only adjusted within the monthly rebalancing process at the end of each month. However, bonds that are fully redeemed intra-month are taken into account immediately. Fully redeemed bonds are bonds that are fully called or have been completely repurchased.

All calculations are based on the adjusted amount outstanding that reflects the outstanding bond notional at the last rebalancing. The bond prices relate to the nominal value of 100.

3.6) Index calculus

For specific index formulas please refer to the *Markit iBoxx Bond Index Calculus* document, available in the *Methodology* section of the iBoxx Documentation page on www.ihsmarkit.com.

3.7) Index history

The launch date of the Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index is 31 July 2010. Base date is 31 December 2004.

3.8) Settlement conventions

All iBoxx indices are calculated using the assumption of T+0 settlement days.

3.9) Calendar

IHS Markit publishes an index calculation calendar in the *iBoxx Calendars* section of the iBoxx Documentation page on www.ihsmarkit.com. This calendar provides an overview of the index calculation holidays of the iBoxx bond index families in a given year.

3.10) Sub-indices

In addition to the Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index the following sub-index will be published: Markit iBoxx EUR Sovereigns Eurozone Yield Plus 1-3+.

3.11) Publication of the Index

The Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index is computed and disseminated once per minute between 9:00 am and 5:15 pm CET every day except on common European bank holidays.

Bond and index analytical values are calculated end of day Monday to Friday using that day's closing prices. In addition, bond and index analytical values are calculated using the previous trading day's closing prices on the last calendar day of each month if that day is not a regular trading day as well as on common bank holidays as published in the iBoxx index calculation calendar. This index calculation calendar is available on www.ihsmarkit.com under *iBoxx Calendars*. Index data is also available from the main information vendors.

Closing index values and key statistics are published at the end of each calculation day in the *Indices* section on www.ihsmarkit.com for registered users. In addition, midday fixing levels for bond prices and indices are also published.

3.12) Data publication and access

The table below summarizes the publication of the Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index in the *Indices* section of the IHS Markit website www.ihsmarkit.com for registered users and on the FTP server.

Frequency	File Type	Access
Daily	Underlying file – Bond level	IHS Markit FTP Server
	Indices files – Index level	IHS Markit FTP Server / IHS Markit website / Bloomberg for index levels only
Weekly	Preview components	IHS Markit FTP Server / IHS Markit website
Daily from the 6th calendar day of the month (or the next index publication day if the 6th calendar day falls on a non-business day)	Forwards	IHS Markit FTP Server
Monthly	End of month components	IHS Markit FTP Server / IHS Markit website

The index identifiers for the publication channels are:

Index Name	Markit iBoxx EUR Sovereigns Eurozone Yield Plus		Markit iBoxx EUR Sovereigns Eurozone Yield Plus 1-3+	
	TRi	CPi	TRi	CPi
SEDOL	B3VSH02	B44QJK4	--	--
ISIN	GB00B3VSH026	GB00B44QJK41	GB00BBHX1N87	GB00BBHX1P02
Ticker	IBOXEYP0	IBOXEYP1	IBXXEYOT	IBXXEYOP
RIC	--	--	--	--

3.13) Annual index review

The rules for the index are reviewed at least once per year during the public annual index review consultation process to ensure that the index provides a balanced representation of the EUR denominated debt market. Decisions made following feedback from market participants, the annual index review and External Advisory Committees (EAC) will be published on www.ihsmarkit.com shortly after the EAC meetings have been held. The publication will contain a detailed overview and timelines for implementation of any rules changes.

4) Governance and regulatory compliance

IHS Markit Benchmark Administration Limited (IMBA UK) is the Index Administrator of iBoxx indices. Information on IMBA UK's governance and compliance approach can be found [here](#). This document covers:

- Governance arrangements, including external committees
- Input data integrity
- Conflicts of interest management
- Market disruption and Force Majeure
- Methodology changes and cessations
- Complaints
- Errors and restatements
- Reporting of infringements and misconduct
- Methodology reviews
- Business continuity

More details about IMBA UK can be found on the [Administrator's website](#).

5) Changes to the Markit iBoxx EUR Liquid Index Family

30 Jun 2022	<ul style="list-style-type: none"> Monthly forward start date updated from 10th calendar day to 6th calendar day
01 Sep 2021	<ul style="list-style-type: none"> Monthly forward start date updated from 12th calendar day to 10th calendar day
31 Mar 2021	<ul style="list-style-type: none"> Governance and Regulatory Compliance section added
30 Sep 2018	<p>Annual Index Review 2018</p> <ul style="list-style-type: none"> Treatment of bond rating upgrades on t-2 Clarification on bond eligibility during tender Clarification of treatment of called bonds
31 Jul 2017	<p>Annual Index Review 2017</p> <ul style="list-style-type: none"> Inclusion of Senior Callable Bank bonds Classification of Insurance Tier 3 notes
30 Nov 2016	<p>Annual Index Review 2016</p> <ul style="list-style-type: none"> Update of seniority levels for Markit iBoxx indices
30 Nov 2016	<p>Annual Index Review 2015</p> <ul style="list-style-type: none"> Eligibility of subordinated financial debt with a contingent conversion feature at the point of non-viability
01 May 2015	<p>Annual Index Review 2014</p> <ul style="list-style-type: none"> Change to Markit iBoxx tier classification of subordinated debt issued by insurance entities
01 Dec 2014	<ul style="list-style-type: none"> Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index will follow the pricing methodology described in the document <i>Markit iBoxx Pricing Rules</i> Index restatement and complaints sections added Additional clarifications on bond eligibility and corporate actions
31 Jul 2014	<ul style="list-style-type: none"> Eligible bonds to interpolate the country yield criteria change: section 2.4 <ul style="list-style-type: none"> > Expected Remaining Life range extend from 2.5Y-7.5Y to 1Y-10Y Eligible countries selection rules added: section 2.4 <ul style="list-style-type: none"> > To replace a country in the existing index, the yield difference between the entering country and exiting country should be larger than the weighted average bid-ask spread of the entering country > If the entering country has a weight of more than one third of the index after the rebalancing, the threshold is required to be 1.5 times the weighted average bid-ask spread of the entering country
31 Jul 2010	<ul style="list-style-type: none"> Launch of Markit iBoxx EUR Sovereigns Eurozone Yield Plus Index

6) Further information

Glossary of key terms

The Markit iBoxx Glossary document of key terms is available in the *Methodology* section of the iBoxx *Documentation* page on www.ihsmarkit.com.

Contractual and content issues

For contractual or content issues please contact:

Markit Indices GmbH Friedrich-Ebert-Anlage 35-37 60327 Frankfurt am Main Germany email: indices@ihsmarkit.com web: www.ihsmarkit.com

Technical issues and client support

For technical issues and client support please contact:

E-mail:	indices@ihsmarkit.com		
Phone:	Asia Pacific	Japan: Singapore:	+81 3 6402 0127 +65 6922 4210
	Europe	General: UK:	+800 6275 4800 +44 20 7260 2111
	USA	General:	+1 877 762 7548

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A) ESG Disclosures

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY [1]		
1	Name of the benchmark administrator.	IHS Markit Benchmark Administration Limited (IMBA)
2	Underlying asset class of the ESG benchmark. [2]	N/A
3	Name of the S&P Dow Jones Indices benchmark or family of benchmarks.	iBoxx Benchmark Statement
4	Do any of the indices maintained by this methodology take into account ESG factors?	No
Appendix latest update:		May 2023
Appendix first publication		May 2023

[1] The information contained in this Appendix is intended to meet the requirements of the European Union Commission Delegated Regulation (EU) 2020/1817 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the minimum content of the explanation of how environmental, social and governance factors are reflected in the benchmark methodology and the retained EU law in the UK (The Benchmarks (amendment and Transitional Provision) (EU Exit) Regulations 2019).

[2] The ‘underlying assets’ are defined in European Union Commission Delegated Regulation (EU) 2020/1816 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the explanation in the benchmark statement of how environmental, social and governance factors are reflected in each benchmark provided and published.

Disclaimer

Performance Disclosure/Back-Tested Data

Where applicable, S&P Dow Jones Indices and its index-related affiliates (“S&P DJI”) defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index’s Launch Date are considered back-tested. S&P DJI defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company’s public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed “Date of introduction”) is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index’s public release date.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Information presented prior to an index’s launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate certain ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using “Backward Data Assumption” (or pulling back) of ESG data for the calculation of back-tested historical performance. “Backward Data Assumption” is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as “product involvement”) were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on “Backward Data Assumption” please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used. Index returns shown do not represent the results of actual trading of investable assets/securities. S&P DJI maintains the index and calculates the index levels and performance shown or discussed but does not manage any assets.

Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US \$100,000 investment for a 12-month period (or US \$10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US \$1,650), the net return would be 8.35% (or US \$8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US \$5,375, and a cumulative net return of 27.2% (or US \$27,200).

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