

**S&P Dow Jones
Indices**

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Markit iBoxx EUR Liquid Covered Index Guide

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1) Markit iBoxx EUR Liquid Covered Index

The Markit iBoxx EUR Liquid Covered Index (“Index”) is published by IHS Markit and is designed to offer a tradeable exposure to the investment grade market for Euro denominated covered bonds. The index rules have been designed to offer a broad coverage of the market with emphasis on liquidity to be suitable for OTC and exchanged-traded derivatives, and Exchange Traded Funds (ETFs). The indices are an integral part of the global suite of Markit iBoxx Liquid Indices which provide the marketplace with liquid and investable versions of the broader Markit iBoxx benchmark index families.

Broad benchmark indices generally consist of a large number of bonds, especially within the corporate sector. Portfolio managers tracking an index from the broad benchmark Markit iBoxx EUR index family will therefore incur substantial costs in attempting to replicate or hedge the individual bonds in the portfolio. Furthermore, bonds with special features or smaller amounts outstanding usually suffer from illiquid trading, resulting in relatively large bid-ask spreads.

The Markit iBoxx EUR Liquid indices are intended to address these deficiencies by limiting the number of bonds per index and excluding special bond types, thus reducing tracking and hedging costs.

All iBoxx indices are priced based on multiple data inputs. The Markit iBoxx EUR Liquid Covered 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 rules and calculation methodology.

2) Bond selection rules

The eligibility criteria for the index encompass the following bond characteristics:

- Bond type
- Credit rating
- Time to maturity
- Outstanding amount
- Bond age

2.1) Bond type

Only fixed rate and zero coupon covered bonds as defined in the iBoxx Benchmark Guide are eligible for the index.

2.2) Credit rating

All bonds in the Markit iBoxx EUR Liquid Covered 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) Time to maturity

All bonds must have a minimum remaining time to maturity of at least 3 years at the rebalancing date.

2.4) Amount outstanding

The minimum amount outstanding is EUR 1 billion.

2.5) Bond age

Eligible bonds must have an age of no greater than 2 years. The age is defined as the minimum of the following:

- Time since initial issuance, as measured as the difference between the first settlement day and the next rebalancing date
- Time since last tap issuance via the primary market, defined as the difference between the date of the last single notional increase of at least EUR 250 million and the next rebalancing date

2.6) Index size

The minimum size of the index is 50 bonds, but there is no maximum size.

If on any rebalancing date, the index size is due to fall below the minimum level, the following eligibility criteria will be changed, in ascending order, until the minimum index size has been reached:

- The maximum age rule will be relaxed in one year increments
- Minimum time to maturity relaxed in one year increments until a minimum of 1 year

3) Index calculation

3.1) Bond prices

Bonds which are already included in the index will be valued at their respective iBoxx bid prices. Conversely, bonds that are not in the Index for the current rebalancing period, but will be eligible for the next rebalancing, will enter the Index at their iBoxx ask price.

Additionally, a blended price will be calculated for bonds which are already in the index and require an additional notional purchase on any rebalancing date. The blended price will be an average of the bid price and the ask price, weighted by the unchanged and the notional increased amount, respectively. This blended price will replace the bid price which is used to calculate base market values and index weights at the next rebalancing.

In the event that no price can be established for a particular bond, 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 the specific Index Advisory Committees at the following rebalancing date. To ensure consistency, decisions taken are made publicly available on a timely basis and IHS Markit has the ability to refer back to previous cases.

For more details please refer to the “Markit iBoxx Pricing Rules” document, available on www.ihsmarkit.com in the Methodology Documentation section on the right-hand side of the page.

3.2) Cash

Cash from coupon payments and redemptions is held as cash in the Index and reinvested into the Index at the rebalancing day. During the month the cash component is not earning any interest.

3.3) Settlement conventions

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

3.4) Index weights

All bonds in the index will be weighted by their respective market value. The weight of any single issuer in the index is capped at 20%. However, total weight allocating to issuers with more than 5% may not make up more than 20% of the whole index portfolio.

3.5) Index history

The Index history starts on 31 December 2005. The index has a base value of 100 on that date.

3.6) Rebalancing process

The Markit iBoxx EUR Liquid Covered 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.

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.

3.6.1) 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.

3.7) Index formulae

All indices are published as price and total return indices.

The Index is calculated on a capitalization-weighted basis that recognizes the relative changes in value compared to the beginning of each month. The composition and weightings of the Index are adjusted at the beginning of each rebalancing period.

Price Index

The price index is calculated as follows:

$$PI_t = PI_{t-s} \frac{\sum_{i=1}^n P_{i,t} N_{i,t-s}}{\sum_{i=1}^n P_{i,t-s} N_{i,t-s}}$$

where:	
P_t	Price index level at time t
$P_{i,t}$	Clean price of bond i at time t
$P_{i,t-s}$	Closing price of bond i on the last business day on or before the previous rebalancing day
$N_{i,t-s}$	Amount outstanding of bond i at the previous rebalancing day t-s

Total Return Index

The components of the total return are price changes, accrued interest, coupon payments, and other cash flows received during the composition quarter.

$$TR_t = TR_{t-s} \frac{\sum_{i=1}^n (P_{i,t} + A_{i,t} + XD_{i,t-s}(CP_{i,t} + G_{i,t}))N_{i,t-s}}{\sum_{i=1}^n (P_{i,t-s} + A_{i,t-s} + XD_{i,t-s}CP_{i,t-s})N_{i,t-s}}$$

where:	
$A_{i,t}$	Accrued interest of bond i at calculation day t
$A_{i,t-s}$	Accrued interest of bond i on the previous rebalancing day t-s
$CP_{i,t}$	Value of the next coupon payment of bond i during an ex-dividend period. Outside the ex-dividend period, this value is 0
$CP_{i,t-s}$	Value of the next coupon payment of bond i (at the previous rebalancing day) during an ex-dividend period. Outside the ex-dividend period this value is 0
P_t	Price index level at time t
$P_{i,t}$	Clean price of bond i at time t
$P_{i,t-s}$	Closing price of bond i on the last business day on or before the previous rebalancing day
$N_{i,t-s}$	Amount outstanding of bond i at the previous rebalancing day t-s
$G_{i,t}$	Value of any coupon payment received from bond i at time t, since the last rebalancing date. If none the value is 0
TR_t	Total return index level at time t
TR_{t-s}	Closing total return index level on the previous rebalancing day
$XD_{i,t-s}$	The value is 0, if the bond enters the index at the ex-dividend period. The value is 1, if (a) coupon payments are not ex-dividend, (b) has not entered the index during an ex-dividend period, or (c) entered the index during a previous ex-dividend period

3.8) 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.

3.9) Publication of the Index

The Markit iBoxx EUR Liquid Covered Index is calculated as end-of-day index and distributed once daily after market close.

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.

3.10) Data publication and access

The table below summarizes the publication of the Markit iBoxx EUR Liquid Covered 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
Monthly	End of month components	IHS Markit FTP Server / IHS Markit website

Below is a summary of the IDs for each publication channel:

Index Name	Markit iBoxx EUR Liquid Covered Index	
Return Type	TRi	CPi
SEDOL	B8P4X36	B86SCT6
ISIN	GB00B8P4X360	GB00B86SCT61
Ticker	IBXXECVT	IBXXECVP
RIC	.IBXXECVT	.IBXXECVP

3.11) 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 Covered Index

31 Mar 2021	<ul style="list-style-type: none"> • Governance and Regulatory Compliance section added
31 Jan 2020	<p>Annual Index Review 2019</p> <ul style="list-style-type: none"> • Definition update of 'Other Sub-Sovereigns' classification • Addition of German structural covered bonds as eligible bond type under 'Covered bonds' • Inclusion of zero coupon bonds into EUR Liquid indices
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
01 Dec 2014	<ul style="list-style-type: none"> • Markit iBoxx EUR index family will follow the pricing methodology described in the document 'Markit iBoxx Pricing Rules' • Index restatement, complaints sections added
30 Nov 2013	<ul style="list-style-type: none"> • Launch of Markit iBoxx EUR Liquid Corporates 100 Interest Rate Hedged Indices

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:

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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.

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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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