



iBoxx USD High Yield Developed Markets Index Guide

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1 iBxx USD High Yield Developed Markets Index

The iBxx USD High Yield Developed Markets Index is designed to reflect the performance of USD denominated high yield corporate debt from developed countries. The index rules aim to offer a broad coverage of the USD high yield liquid bond universe. The indices are an integral part of the global Markit iBxx index families, which provide the marketplace with accurate and objective indices by which to assess the performance of bond markets and investments.

The iBxx USD High Yield Developed Markets Index is rebalanced once a month at the month-end (the “rebalancing date”) and consists of sub-investment grade USD denominated bonds issued by corporate issuers from developed countries and rated by at least one of three rating services: Fitch Ratings, Moody’s Investors Service, or S&P Global Ratings.

The bonds in the iBxx USD High Yield Developed Markets Index must meet all the criteria described below as of the close of business three business days prior to the rebalancing date provided that the relevant bond data can be verified, at Markit Indices Limited’s sole discretion, as of such date (“bond selection cut-off date”). The new index composition becomes effective on the first business day of the next month (the “composition month”).

All iBxx indices are priced based on multiple data inputs. The iBxx USD High Yield Developed Markets Index follows the pricing methodology as described in the document Markit iBxx Pricing Rules publicly available under Methodology on www.markit.com/Documentation/Product/iBxx. Additionally, the index rules and their application are governed by two Index Advisory Committees.

Additionally, the index rules and their application will be governed by two Index Advisory Committees:

- Technical Committee: consists of representatives from market makers / banks and meets on a monthly basis in order to provide feedback and information into the monthly rebalancing process and to monitor any market developments.
- Oversight Committee: consists of representatives from mostly the buy side and meets in order to discuss the decisions of the Technical Committee, the wider index rules and any market developments which may warrant rule changes.

This document covers the index selection rules and calculation methodology.

1.1 Index governance

In order to ensure the independence and the objectivity of the iBxx USD High Yield Developed Markets Index, the index rules and their enforcement will be governed by two distinct Index Advisory Committees, in line with the governance structure for the main iBxx index families.

1.1.1 Technical Committee

The Technical Committee is composed of representatives from market makers/banks. The main purpose of this group is to provide assistance in the identification of eligible constituents, especially in

the instance where the eligibility or the classification of a bond is unclear or contentious. Additionally, the Technical Committee discusses any market developments which may warrant index rule changes, and provide recommendations on changes to the rules or additional indices. It also reviews the impact of financial sanctions on the eligibility of countries or specific index constituents. The Technical Committee meets once a month.

1.1.2 Oversight Committee

The Oversight Committee is comprised of representatives from a broad range of asset managers, consultants and industry bodies. The purpose of this committee is to review the recommendations made by the Technical Committee and also to provide consultation on any market developments which may warrant rule changes.

1.2 Publication of the Indices

All indices are calculated as end-of-day and distributed once daily. The indices are calculated every day except on common U.S. bank holidays. In addition, the indices are calculated with the previous trading day's close on the last calendar day of each month if that day is not a trading day. Markit publishes an index calculation calendar which is available in the indices section on www.markit.com/indices under Calendar for data subscribers. Index data and bond price information is also available from the main information vendors.

Bond and index analytical values are calculated each trading day using the daily closing prices. Closing index values and key statistics are published at the end of each business day in the indices section on www.markit.com/indices for data subscribers.

2 Selection Criteria

The following selection criteria are applied to select the constituents for the iBoxx USD High Yield Developed Markets Index:

- Bond Type
- Credit Rating
- Time to Maturity
- Amount Outstanding
- Classification

2.1 Bond type

Only fixed-rate bonds whose cash flow can be determined in advance are eligible for the indices. The indices are comprised solely of bonds. T-Bills and other money market instruments are not eligible. The iBoxx USD High Yield Developed Markets Index includes only USD denominated bonds.

In particular, bonds with the following characteristics are included:

- Fixed coupon bonds
- Step-up bonds with coupon schedules known at issuance (or as functions of the issuer's rating)
- Sinking funds and amortizing bonds
- Medium term notes ("MTNs")
- Rule 144A offerings
- Callable bonds
- Puttable bonds
- Perpetual bonds
- Pay-in kind bonds (during the pay-in-kind period)
- Zero coupon bonds
- Zero step-ups (GAINS)

The following instrument bond types are specifically excluded from the indices:

- Preferred shares
- Optionally and mandatory convertible bonds
- Subordinated bank or insurance debt with mandatory contingent conversion features or with any conversion options before the first call date is ineligible for the index
- Bonds with other equity features attached (e.g., options/warrants)
- Private placements. The list of private placements is updated every month and published on www.markit.com/indices under *Indices News*. Partial private placements where information on the specific amounts publicly placed and privately placed can be ascertained are included in the

indices with the amount publicly placed. If the amount publicly placed is below the cut-off, the bond is not included in the indices.

- Floating rate notes
- Bonds with differences between accrual and coupon payment periods and monthly-paying bonds.
- Regulation S offerings

For private placements, publicly available information is not always conclusive and the classification of a bond as a private placement will be made at Markit's discretion based on the information available at the time of determination. Markit may consult with the specific Index Advisory Committees to review private placements. Any bond classified as private placement is added to the list of excluded private placements. The list is published on www.markit.com/indices under *Indices News* 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, Markit will analyse the features of such securities in line with the principles set out in 3.1 of this guide. 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.

2.1.1 Tender Offers and Calls

Any bond subject to a firm call or tender offer, with the exception of exchange offers, in the month immediately following the rebalancing date will be excluded from the index, provided that Markit is aware of such tender offer or call as of the Bond selection cut-off date.

2.2 Credit Rating

All bonds in the iBoxx USD High Yield Developed Markets Index must have a Markit iBoxx Rating of sub-investment grade.

Defaulted bonds are ineligible for the index. Bonds that are in default or that trade flat of accrued are removed from the index at the first rebalancing following the default/start of trading flat of accrued.

Ratings from the following three credit rating agencies are considered for the calculation of the Markit iBoxx Rating:

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

Sub-investment grade is defined as BB+ or lower from Fitch or S&P and Ba1 or lower from Moody's, but not in default.

If a bond is rated by more than one of the above agencies, then the Markit 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 Markit iBoxx

Rating Methodology document. The methodology can be found on www.markit.com/Documentation/Product/iBoxx under Methodology and in the Appendix C.

Issues rated D by Fitch or S&P, or that have been subject to a default press release by Moody's cannot enter the index; those issues in the index that are subsequently downgraded to D by Fitch or S&P or are subject to a default press release by Moody's (as of the bond selection cut-off date) will be taken out of the index on the next rebalancing date.

In case of an ID change or exchange of a 144A version into a registered bond the ratings from the 144A bond are also used for the registered bond

2.3 Time to Maturity

2.3.1 Expected Remaining Life

All bonds must have at the rebalancing day an expected remaining life:

- of at least one year, and
- all new insertions must have an expected remaining life of at least one year and 6 months.

The expected remaining life is expressed in years and calculated as follows:

- For plain vanilla bonds, the expected remaining life of the bond is its time to maturity, calculated as the number of days between the last calendar day of the current month and its maturity.
- For dated and undated callable hybrid capital bonds, the first call date is always assumed to be the expected redemption date. The expected remaining life is calculated as the number of days between the last calendar day of the month and the expected redemption date.
- For soft bullets, the expected remaining life of the bond is its time to the expected maturity and not to its final maturity date.

2.4 Amount outstanding

2.4.1 Issue Amount Outstanding

The outstanding face value of a bond must be greater than or equal to USD 200m as of the bond selection cut-off date. Partial buybacks or increases affect the outstanding face value of a prospective bond. Markit considers changes to the outstanding face value of a candidate bond as a result of partial or full buybacks or increases, provided that Markit is aware of such changes as of the bond selection cut-off date. In the case of 144A securities that are registered as global securities, the remaining amount of the 144A version and the registered version are recombined if the bond is not exchanged in full if the remaining amount of the 144A version reduces the amount outstanding below the eligibility threshold.

2.5 Bond Classification

All bonds are classified based on the principal activities of the issuer and the main sources of the cash flows used to pay coupons and redemptions. In addition, a bond's specific collateral type or legal provisions are evaluated. Hence, it is possible that bonds issued from different subsidiaries of the same issuer carry different classifications.

The issuer classification is reviewed regularly based on updated information received by Markit, and status changes are included in the indices at the next rebalancing if necessary.

Where the sector classification of a specific entity is not very clear due to the diversified business of the entity, decision will be made at Markit's discretion. Markit will assign the Markit classification according to its evaluation of the business risk presented in the security prospectus and annual reports, if available. Markit will also compare the classification to peers in the potential sectors, and Markit may consult with the Index Advisory Committees. Membership lists including classification is published on the FTP server and in the indices section on www.markit.com/indices for registered users for future reference and to ensure decision's consistency.

2.5.1 Denomination

Bonds must be denominated in USD.

2.5.2 Issuer

The bond must be corporate credit, i.e., debt instruments backed by corporate issuers that are not secured by specific assets. Debt issued by governments, sovereigns, quasi-sovereigns, and government-backed or guaranteed entities is excluded.

For the purposes of selecting candidates for the index, an “*issuer*” is defined by the Bloomberg ticker (i.e., all bonds sharing a ticker are attributed to the same issuer).

2.5.3 Issuer Country of Risk

Only bonds with a country of risk field classified as developed markets are eligible for the index.

The issuer or, in the case of a finance subsidiary, the issuer's guarantor must have a country of risk listed as developed markets in “Markit iBoxx Country Classifications”.

The classification is available at: www.markit.com/Documentation/Product/iBoxx under Methodology -> Markit iBoxx Country Classifications

2.5.4 Inclusion and Exclusion of Countries

A new country is added to the index if it is classified as developed market based on the “Markit Global Economic Development Classification”.

A country is no longer eligible for the index if it is classified as emerging market based on the “Markit Global Economic Development Classification”. The “Markit Global Economic Development Classification” is updated once per year.

The results are published at the end of July. The inclusion/exclusion of a country becomes effective at the end of October.

2.5.5 Sector Classification

Each bond in the iBoxx USD High Yield Developed Markets Index is assigned to one of the following sectors: Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecommunications, Technology, Utilities, and Financials.

3 Index Calculation

3.1 Bond prices

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

3.2 Rebalancing Process

The index is rebalanced monthly on the last business day of the month. Any inclusion after the index cut-off day (t-3) will not be considered in the re-balancing process, but will become effective at the end of the following 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 and amount outstanding has become known at least three trading days before the end of the month.

Preview lists of eligible bonds will be published daily beginning on ten (t-10) trading days before end of the month.

Two business days before the end of each month, the rating and amount information for the constituents is updated and the list is adjusted for all rating and amount changes which are known to have taken place three business days before the end of the month which could also result in exclusion of the bond. The changes made on T-2 for rating and amount will not be considered for inclusion.

Two business days before the end of the month the final index membership list for the following month is published at the close of business.

3.2.1 Rebalancing Procedure

In a first step the selection criteria set out in chapter 3 are applied to the universe of USD denominated bonds.

- Bond ratings and amount outstanding are used as of the bond selection cut-off date
- Maturity dates remain fixed for the life of the bond
- Only bonds with a first settlement date on or before the rebalancing date are included in the selection process

3.3 Index Weights

Once the eligible bond universe has been defined, the weight for each bond is determined. The weights are determined on the last business day of each month using the end-of-month market values.

3.4 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.markit.com/Documentation/Product/IBoxx.

3.5 Treatment of the special intra-month events

Data for the application of corporate actions in the index may not be fully or timely available at all times, e.g. the final call prices for make-whole calls or the actual pay-in-kind percentage for PIK-payment options. In such cases, IHS Markit will estimate the approximate value based on the available data at the time of calculation.

3.5.1 Full redemptions: exercised calls, puts and buybacks

If a bond is fully redeemed intra-month, the bond effectively ceases to exist. In all calculations, the redeemed bond is treated as cash based on the last price, the call price or repurchase price, as applicable. The redemption factor, redemption and the redemption price are used to treat these events in the index and analytics calculation. In addition, the clean price of the bond is set to the redemption price, and the interest accrued until the redemption date is treated as an irregular coupon payment.

3.5.2 Bonds trading flat of accrued

If a bond is identified as trading flat of accrued, the accrued interest of the bond is set to 0 in the total return index calculation and is excluded from the calculation of all bond and index analytical values.

Bonds will be considered trading flat of accrued in any of the following situations:

- a bond has been assigned a default rating and/or
- issuer has announced a failure to pay a coupon and/or
- issuer has announced an intention not to make a payment on an upcoming coupon (grace period).

3.5.3 Multi-coupon bonds

Some bonds have pre-defined coupon changes that lead to a change in the annual coupon over the life of the bond. In all instances, the coupon change must be a fixed amount on top of a fixed coupon, i.e. floating coupon bonds are not eligible for the indices. The two main categories of bonds are step-up bonds and event-driven bonds.

- **Step-up bonds:** These are bonds with a pre-defined coupon schedule that cannot change during the life of the bond. The coupon schedule is used in all bond calculations.
- **Event-driven bonds:** These are bonds whose coupon may change upon occurrence (or non-occurrence) of pre-specified events, such as rating changes, e.g. rating-driven bonds, failure to register a bond (register-driven bonds), or failure to complete a merger, (merger-driven bonds). In the calculation of the indices and the analytics, the coupon schedule as of the calculation

date is used. That is to say, any events occurring after the calculation date are ignored in the determination of the applicable coupon schedule.

Example of an event-driven bond: A bond's rating changes on 31 December 2003 from A- to BBB+, and the coupon steps up from 6% to 6.25% from 1 March 2004 onward. The coupon dates are 1 October and 1 April each year. The correct coupon schedule for the bond and index calculations is date dependent. The index calculation on 20 December 2003 uses the 6% coupon for the whole life of the bond, while the calculation on 31 January 2004 uses a 6% coupon for the current coupon period to 29 February 2004, and a 6.25% coupon for all later interest payments. The index calculation on 20 March uses a 6% coupon until 29 February, a 6.25% coupon for the remainder of the current coupon period and a 6.25% coupon for all future coupon payments. The index calculation after 1 April uses a 6.25% coupon.

3.6 Index History

Base date of the USD Corporates High Yield Developed Index is December 31, 2012 with a value of 100.

3.7 Settlement conventions

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

3.8 Calendar

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

3.9 Data Publication and Access

The indices are published on <ftp://indices.markit.com>, www.markit.com, Bloomberg, Reuters. Below is a summary of the IDs for each publication channel:

Index	Name	Version	ISIN	SEDOL	BBG	RIC
iBoxx	USD High Yield Developed Markets	TRI	GB00BFT1VL61	BFT1VL6	IBXXHYD1	.IBXXHYD1
iBoxx	USD High Yield Developed Markets	CPI	GB00BFT1VK54	BFT1VK5	IBXXUHY1	.IBXXUHY1

3.10 Index Restatement

Index restatement follows the policy described in the *Markit iBoxx Index Restatement Policy* document, available in the *Methodology* section of the Markit iBoxx Documentation page on www.markit.com/Documentation/Product/iBoxx.

3.11 Index Review

Index methodology reviews for the index in this guide are performed on a periodic basis. Any material changes to the methodology governing the indices are published on IHS Markit website.

4 Further Information

Glossary of key terms

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

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Formal complaints

Formal complaints can be sent electronically to our dedicated e-mail address complaints_indices@markit.com.

For any general index enquiries, please contact iBoxx indices support group at indices@ihsmarkit.com.

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Ownership

Markit Indices Limited is a wholly-owned subsidiary of IHS Markit Limited.

Other index products

Markit Indices Limited owns, manages, compiles and publishes the iTraxx credit derivative indices and the iBoxxFX Trade Weighted Indices.

A Markit iBoxx Average Rating Methodology

All bonds in the Index must have a Markit iBoxx Rating. Ratings from the following three credit rating agencies are considered for the calculation of the Markit iBoxx Rating:

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

The average rating of Fitch Ratings, Moody's Investors Service and S&P Global Ratings determines the index rating. The rating is consolidated to the nearest rating grade. Rating notches are not used. Each rating is assigned a number as follows:

Fitch	Moody's	S&P	Score	iBoxx
AAA	Aaa	AAA	1	AAA
AA+	Aa1	AA+	2	AA
AA	Aa2	AA	3	AA
AA-	Aa3	AA-	4	AA
A+	A1	A+	5	A
A	A2	A	6	A
A-	A3	A-	7	A
BBB+	Baa1	BBB+	8	BBB
BBB	Baa2	BBB	9	BBB
BBB-	Baa3	BBB-	10	BBB
BB+	Ba1	BB+	11	BB
BB	Ba2	BB	12	BB
BB-	Ba3	BB-	13	BB
B+	B1	B+	14	B
B	B2	B	15	B
B-	B3	B-	16	B
CCC+	Caa1	CCC+	17	CCC
CCC	Caa2	CCC	18	CCC
CCC-	Caa3	CCC-	19	CCC
CC	Ca	CC	20	CC
C	C	C	21	C
D/RD		D	22	D

Where more than one rating is available, scores will be added and the sum divided by the number of ratings. A non-integer result will be rounded to the nearest integer. E.g. 4.33 is rounded down to 4.

4, while 4.5 is rounded to 5. The resulting number is converted to the iBoxx index rating (iBoxx only publishes rating grades without notches) as shown in the table above.

B Annotations

$A_{i,t}$	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
$CASH_{t-1}$	Cash at the previous business day
$CP_{i,t}$	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
$G_{i,t}$	Value of any coupon payment received from bond i at time t. If none the value is 0
$N_{i,t-s}$	Amount outstanding of bond i at the previous rebalancing day t-s
$P_{i,t}$	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
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
$Y_{LIBID,t-1}$	Overnight interest rate for cash

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