

**iBoxx USD Liquid
Investment Grade (TTM
JPY Hedged) Index Guide
*September 2022***

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1) iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index

The iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index is a foreign currency version of the iBoxx USD Liquid Investment Grade Index (the underlying index). The index is hedged into JPY using the TTM JPY FX rates published by Bank of Tokyo-Mitsubishi at 10 am Tokyo time. The iBoxx USD Liquid Investment Grade Index aims to offer a broad coverage of the USD investment grade liquid bond universe. The index is market-value weighted with an issuer cap of 3%.

The iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index is rebalanced once a month at the month-end and consists of 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 underlying iBoxx USD Liquid Investment Grade 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 as of such date (bond selection cut-off date). The new index composition becomes effective on the first business day of the next month.

All iBoxx indices are priced based on multiple data inputs. The iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index uses multi-source prices as described in the document *iBoxx Pricing Rules* publicly available on www.ihsmarkit.com under *Methodology*.

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 iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index:

- Bond type
- Credit rating
- Expected remaining life
- Amount outstanding
- Lockout period
- Minimum run

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 Liquid Investment Grade (TTM JPY Hedged) Index include 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 with a registration right. Only 144A bonds where the Registration S version of the bond is eligible for the iBoxx USD Benchmark Index are eligible.
- Callable bonds
- Puttable bonds

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)
- Perpetual bonds
- Fixed-to-floater bonds
- Floating rate notes
- Pay-in kind bonds (during the pay-in-kind period)
- Zero coupon bonds
- Zero step-ups (GAINS)
- Bonds with differences between accrual and coupon payment periods and monthly-paying bonds
- Private placements
- Retail bonds

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 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, IHS Markit will analyse 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 iBoxx USD Liquid Investment Grade (TTM JPY Hedged) 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) Expected remaining life

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

- of at least three years, and
- all new insertions must have an expected remaining life of at least three years 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

Issue amount outstanding

The outstanding face value of a bond must be greater than or equal to USD 750 million as of the bond selection cut-off date. Partial buybacks or increases affect the outstanding face value of a prospective bond. IHS Markit considers changes to the outstanding face value of a candidate bond as a result of partial or full buybacks or increases, provided that IHS Markit is aware of such changes as of the bond selection cut-off date. In the case of RegS securities that are registered as global securities, the remaining amount of the RegS version and the registered version are recombined if the bond is not exchanged in

full and if the remaining amount of the RegS version reduces the amount outstanding below the eligibility threshold.

Issuer Amount Outstanding

The outstanding face value of all bonds denominated in USD from the issuer in the broader iBoxx USD Investment Grade Corporate Index (excluding fixed-to-floater and perpetual bonds) must be greater than or equal to USD 2 billion as of the bond selection cut-off date.

2.5) Lockout period and Minimum run

Lockout period

A bond that drops out of the iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index at the rebalancing day is excluded from reentering the index for a three-month period. The rule for the lockout period takes precedence over the other rules for the iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index selection. A locked out bond will not be selected, even if it qualifies for the index.

Minimum run

Any bond that enters the iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index must remain in the index for a minimum of six months provided it is not downgraded to sub-investment grade, defaulted or fully redeemed in that period.

3) 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 IHS Markit, and status changes are included in the index 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 IHS Markit's discretion. IHS Markit will assign the IHS Markit classification according to its evaluation of the business risk presented in the security prospectus and annual reports, if available. IHS Markit will also compare the classification to peers in the potential sectors and may consult with the Index Advisory Committees. Membership lists including classification are published on the FTP server and in the *Indices* section on www.ihsmarkit.com for registered users.

3.1) Denomination

Bonds must be denominated in USD with clearance and settlement available through Depository Trust and Clearing Corporation (DTCC). The securities need to be either publicly registered in the U.S. with the Securities and Exchange Commission or Rule 144A offerings with registration rights. Eurobonds are excluded.

3.2) 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).

3.3) Issuer country

Bonds from countries classified as developed markets based on the *Markit Global Economic Development Classification* are eligible for the index. The issuer or, in the case of a finance subsidiary, the issuer's guarantor, must be domiciled, incorporated and the country of risk must be in the countries listed as developed markets in *Markit iBoxx Country Classifications*.

The classification is available at: www.ihsmarkit.com under *Methodology*.

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.

3.4) Corporates

Bonds issued by public or private corporations. Bonds secured by a 'floating charge' over some or all assets of the issuer are considered corporate bonds. Corporate bonds are further classified into Financials and Non-Financials bonds and then into their multiple-level economic sectors, according to the issuer's business scope. The category Guaranteed & Wrapped is added under Financials for corporate bonds whose timely coupon and/or principal payments are guaranteed by a non-affiliated insurer or through a letter of credit from a non-affiliated bank. Each bond in the index is assigned to one of the following sectors.

Table 1: Overview of Markit iBoxx Corporates Sectors

	Economic Sector	Market Sector	Market Sub-Sector
Financials	Core Financials	Banks	Banks
		Insurance	Life Insurance
			Nonlife Insurance
	Financial Services	Financial Services	General Financial
			Equity Investment Instruments
			Nonequity Investment Instruments
		Guaranteed & Wrapped	*
	Real Estate	Real Estate	Real Estate Investment & Services
			Real Estate Investment Trusts
Non-Financials	Oil & Gas	Oil & Gas	Oil & Gas Producers
			Oil Equipment / Services & Distribution
			Alternative Energy
	Basic Materials	Chemicals	Chemicals
		Basic Resources	Industrial Metals
			Mining
	Industrials	Construction & Materials	Forestry & Paper
			Construction & Materials
		Industrial Goods & Services	Aerospace & Defense
			Electronic & Electrical Equipment
			General Industrials
			Industrial Engineering
			Industrial Transportation
			Support Services
	Consumer Goods	Automobiles & Parts	Automobiles & Parts

		Food & Beverage	Beverages
			Food Producers
		Personal & Household Goods	Household Goods
			Personal Goods
			Tobacco
			Leisure Goods
	Health Care	Health Care	Pharmaceuticals & Biotechnology
			Health Care Equipment & Services
	Consumer Services	Retail	Food & Drug Retailers
			General Retailers
		Media	Media
		Travel & Leisure	Travel & Leisure
		Education	Academic & Educational Services
	Telecommunications	Telecommunications	Integrated Telecommunications
			Wireless Telecommunications
	Utilities	Utilities	Electricity
			Gas / Water & Multiutilities
	Technology	Technology	Software & IT Services
			Technology Hardware & Equipment

4) Index Calculation

4.1) Static data

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

4.2) 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.

4.3) Rebalancing process

The underlying 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 rebalancing 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.

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. However, if bonds which are part of broader US Dollar indices become eligible into the Index two business days prior to rebalancing because of rating and/or amount changes, will be included in the index.

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.

4.4) Index weights

Once the eligible bond universe has been defined, the weight for each bond is determined and if necessary capped; applying an issuer cap of 3%. The weights and capping factors are determined on the last business day of each month using the end-of-month market values.

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

4.6) TTM JPY FX Rate

The daily index calculation uses the TTM JPY FX rates published by Bank of Tokyo-Mitsubishi at 10 am Tokyo time.

On the first Tokyo business day of each month the index is hedged using the 1-month forward contract.

4.7) 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.

4.8) 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.

4.8.1) 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.

4.8.2) 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).

4.8.3) 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 (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.

4.8.4) 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 IHS Markit is aware of such tender offer or call as of the Bond selection cut-off date.

4.9) Index history

The Index history starts on 01 March 2012. The index has a base value of 100 on that date.

4.10) Settlement conventions

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

4.11) 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.

4.12) Publication of the Index

The iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index is calculated every Tokyo business day. IHS Markit publishes an index calculation calendar, which is available on www.ihsmarkit.com under *iBoxx Calendars*. 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.ihsmarkit.com for registered users.

4.13) Data publication and access

The table below summarizes the publication of iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index in the *Indices* section of the IHS Markit website www.ihsmarkit.com for registered users and on the FTP server.

Table 2: Data publication frequency, file types and access

Frequency	File Type	Access
Daily	Indices files – Index level	FTP Server / IHS Markit website / Bloomberg (index levels only)

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

Table 3: Index identifiers

Index name	iBoxx USD Liquid Investment Grade (TTM JPY Unhedged)		iBoxx USD Liquid Investment Grade (TTM JPY Hedged)	
Return type	TRI	CPI	TRI	CPI
ISIN	GB00BDZW9B59	GB00BDZW9938	GB00BDZW9821	GB00BDZW9714
Ticker	IBXXTJUT	IBXXTJUP	IBXXTJHT	IBXXTJHP

4.14) Index review

The rules for the Index are reviewed on a periodic basis during the public review and 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 index review and External Advisory Committees (EAC) will be published on www.ihsmarkit.com shortly after the EACs have been held. The publication will contain a detailed overview and timelines for implementation of any rules changes.

5) 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](#).

6) Changes to the iBoxx USD Liquid Investment Grade (TTM JPY Hedged) Index

31-Mar-21	Governance and Regulatory Compliance section added
10 Apr 2017	Introduction of the iBoxx USD Liquid Investment Grade (TTM JPY Hedged) index

7) 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

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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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