

**S&P Dow Jones
Indices**

A Division of **S&P Global**

iBoxx USD Liquid High Yield Index Methodology

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1 Markit iBoxx USD Liquid High Yield Index

The Markit iBoxx USD Liquid High Yield Index is designed to reflect the performance of USD denominated high yield corporate debt. 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 iBoxx index families, which provide the marketplace with accurate and objective indices by which to assess the performance of bond markets and investments. The index is market-value weighted with an issuer cap of 3%.

The Markit iBoxx USD Liquid High Yield 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 Markit iBoxx USD Liquid High Yield 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 (the “composition month”).

All iBoxx indices are priced based on multiple data inputs. The Markit iBoxx USD Liquid High Yield Index follows the pricing methodology as described in the document *iBoxx Pricing Methodology* publicly available on <https://www.spglobal.com/spdji/en/> under *Methodology*.

This document covers the index selection rules and calculation methodology.

2 Selection criteria

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

- Bond type
- Credit rating
- Time to maturity
- Amount outstanding
- Classification
- Lockout period

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 Markit iBoxx USD Liquid High Yield 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
- Callable bonds
- Puttable bonds
- Pay-in kind 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)
- Private placements. The list of private placements is updated every month and published on <https://www.spglobal.com/spdji/en/> 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.
- Perpetual bonds (unless callable with eligible expected remaining life as per chapter 2.3)
- Floating rate notes
- Zero coupon bonds
- Zero step-ups (GAINS)
- Bonds with differences between accrual and coupon payment periods and monthly-paying bonds.
- Regulation S offerings
- Extended bonds as defined under section 'Maturity extension' in this document

For private placements, publicly available information is not always conclusive and the classification of a bond as a private placement will be made at S&P DJI's discretion based on the information available at the time of determination. Any bond classified as private placement is added to the list of excluded private placements. The list is published on <https://www.spglobal.com/spdji/en/> 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, S&P DJI will analyse the features of such securities in line with the principles set out in 2.1 of this methodology. S&P DJI may consult the specific Index 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 S&P DJI is aware of such tender offer or call as of the Bond selection cut-off date.

2.2 Credit rating

All bonds in the Markit iBoxx USD Liquid High Yield Index must have an iBoxx Rating of sub-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

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

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 available at <https://www.spglobal.com/spdji/en/> under *Methodology*.

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. Issues rated D by Fitch Ratings or S&P Global Ratings or that have been subject to a default press release by Moody's Investor Service cannot enter the index; those issues in the index that are subsequently downgraded to D by S&P Global Ratings or Fitch or are subject to a default press release by Moody's Investor Service (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.

Bonds with a rating downgrade to RD/SD will remain eligible in the Markit iBoxx USD Liquid High Yield Index until the second rebalancing after the downgrade. If such bonds have not been upgraded by T-3 of the second rebalance following the initial downgrade, they will be removed from the index. This means RD/SD rated bonds remain eligible in the Markit iBoxx USD Liquid High Yield Index for the first rebalancing after their downgrade to allow for sufficient time to complete a distressed debt exchange or change of terms (assuming they meet all other criteria).

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

The expected remaining life is calculated from the rebalancing date to the assumed workout date of the bond, by using the day count convention of the bond. The workout date for a bond is determined based on the bond features as follows:

- For plain vanilla bonds, the expected workout date is the final maturity date
- For dated and undated callable financial hybrid capital bonds, the workout date is assumed to be the first call date
- For non-financial hybrid capital bonds with an interest rate reset, the workout date is assumed to be the first reset date.
- For soft bullets, the expected workout date is determined using the first call date

2.3.2 Expecting remaining life at issuance

All bonds must have at issuance an expected remaining life of 15 years or less.

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 400 million as of the bond selection cut-off date. Partial buybacks or increases affect the outstanding face value of a prospective bond. S&P DJI considers changes to the outstanding face value of a candidate bond as a result of partial or full buybacks or increases, provided that S&P DJI 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.

2.4.2 Issuer amount outstanding

The outstanding face value of all bonds denominated in USD from the issuer in the broader “iBoxx USD High Yield Developed Markets Index” and the “iBoxx USD Corporates (IG)” universe must be greater than or equal to USD 1 billion as of the bond selection cut-off date. The issuer amount outstanding is based on the issuer ticker.

To avoid turnover due to redemptions and new issuances the following adjustments are made to the issuer amount outstanding:

- New inclusions will consider the issuer amount outstanding as of the bond selection period as well as the projected amount outstanding at the next rebalancing.
- Bonds are only removed from the index due to the issuer amount outstanding cut-off if the expected amount outstanding for the next rebalancing is also expected to be below the cut-off amount.
- Using the expected issuer amount outstanding at next month's rebalancing to determine the eligibility based on the issuer amount outstanding threshold is intended to reduce unnecessary turnover by only adding bonds that are expected to comply with the issuer amount outstanding rule in the coming month and only remove bonds expected to fail the rule going forward.

2.5 Lockout period

A bond that drops out of the Markit iBoxx USD Liquid High Yield Index at the rebalancing day is excluded from re-entering the index for a three-month period.

The rule for the lockout period takes precedence over the other rules for the Markit iBoxx USD Liquid High Yield Index selection. A locked-out bond will not be selected, even if it qualifies for the index.

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 S&P DJI, and status changes are included in the index at the next rebalancing if necessary.

Where the sector classification of a specific entity is not clear due to the diversified business of the entity, a decision is made at S&P DJI's discretion. S&P DJI assigns the classification according to its evaluation of the business risk presented in the security prospectus and annual reports, if available. S&P DJI also compares the classification to peers in the potential sectors. Membership lists including classification are published on the FTP server and in the *Indices* section of the webpage for registered users.

3.1 Denomination

Bonds must be denominated in USD.

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 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

	Economic Sector	Market Sector	Market Sub-Sector
		Guaranteed & Wrapped	*
	Real Estate	Real Estate	Real Estate Investment & Services
			Real Estate Investment Trusts
Non-Financials	Energy	Oil & Gas	Oil & Gas Producers
			Oil Equipment / Services & Distribution
		Renewable Energy	Renewable Energy
	Basic Materials	Chemicals	Chemicals
		Basic Resources	Industrial Metals
			Mining
			Forestry & Paper
	Industrials	Construction & Materials	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	

	Economic Sector	Market Sector	Market Sub-Sector
	Utilities	Utilities	Electricity
			Gas / Water & Multiutilities
	Technology	Technology	Software & IT Services
			Technology Hardware & Equipment

3.4 Additional classification

Corporate debt is further classified into senior and subordinated debt. Non-core-financials senior debt differentiates between Senior Secured and Senior Unsecured bonds. Bank senior debt structure additionally differentiates between Bail-in and Preferred bonds. The Bail-in classification captures all senior notes which are subject to write-down or conversion into a subordinated instrument on the occurrence of a resolution event, as well as senior bank debt issued by bank holding companies.

Hybrid capital issued by banking and insurance institutions is further detailed into the respective tiers of subordination.

The market information on the tier of subordination for insurance capital is often less standardized and clear than the equivalent issues by banks. In these cases, the classification is based on the maturity, coupon payment and deferral provisions of the bond from the offering circulars of the bonds. The table below displays the seniority classification of debt issued by both financial and non-financial sectors.

Table 2: Overview of seniority levels

Market Sector	Seniority Level 1	Seniority Level 2	Seniority Level 3	
Bank	SEN	Preferred	*	
		Bail-in	*	
	SUB	T2 (post-Jan '13 issuances)		T2 callable
				T2 non-callable
		T2 (pre-Jan '13 issuances)		LT2 callable
				LT2 non-callable
				UT2
			T1	T1 step
			T1 non-step	
Insurance	SEN	*	*	
	SUB	T3	*	
		T2 dated		T2 dated callable
				T2 dated non-callable
		T2 perpetual	*	
		T1	*	
Other sectors	SEN	Senior Secured	*	
		Senior Unsecured	*	
	SUB	Other	Hybrid ¹	

Market Sector	Seniority Level 1	Seniority Level 2	Seniority Level 3
			Non-hybrid

** Bonds will be required to fulfil the following criteria to be considered hybrids:

- Subordinated
- Deferrable coupons
- First non-call period \geq 5 years
- Either perpetual or 'long-dated', where 'long-dated' is defined as $>$ 25 years of the time to maturity at issuance

3.5 Issuer country

Bonds from countries classified as developed markets based on the "S&P Global iBoxx Global Economic Development Classification Methodology" 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 "S&P iBoxx Country Classifications".

The classification is available at: <https://www.spglobal.com/spdji/en/> under Methodology -> S&P iBoxx Country Classifications

3.6 Inclusion and exclusion of countries

A new country is added to the index if it is classified as developed market based on the "S&P Global iBoxx Global Economic Development Classification Methodology".

A country is no longer eligible for the index if it is classified as emerging market based on the "S&P Global iBoxx Global Economic Development Classification Methodology". The "S&P Global iBoxx Global Economic Development Classification Methodology" 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.

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 *iBoxx Pricing Methodology* document, available in the *Methodology* section of the webpage at <https://www.spglobal.com/spdji/en/>.

4.3 Rebalancing process

The index rebalances monthly after market close on the last business day of the month. Any inclusion after the index cut-off day (T-3) is not considered in the rebalancing process but becomes effective at the end of the following month. New bonds issued are considered if publicly known to settle until the last calendar day of the month, inclusive, and if the rating and amount outstanding has become known at least three trading days before the end of the month.

Preview lists of eligible bonds are published on a weekly basis starting on the first Friday three business days after the previous month-end rebalance, as well as on the sixth calendar day of the month (or next index publication day if the sixth calendar day falls on a non-business day). Preview lists of eligible bonds are additionally published on before the end of the month. Final components are published two business days before the end of the month (T-2).

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 U.S. Dollar indices become eligible into the Index two business days prior to rebalancing because of rating and/or amount changes, the bonds are included in the index.

4.3.1 Rebalancing procedure

In a first step the selection criteria set out in chapter 2 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

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 calculus

The components of the total return are price changes, accrued interest, coupon payments, and reinvestment income on cash flows received during the composition month.

$$TR_t = TR_{t-s} \frac{\sum_{i=1}^n (P_{i,t} + A_{i,t} + XD_{i,t-s} \cdot (CP_{i,t} + G_{i,t})) \cdot N_{i,t-s} + CASH_{t-1} \cdot (1 + SOFR_{t-2USBD} \cdot days_{ACT/360}(t-1, t))}{\sum_{i=1}^n (P_{i,t-s} + A_{i,t-s} + XD_{i,t-s} \cdot CP_{i,t-s}) \cdot N_{i,t-s}}$$

where,

$A_{i,t}$	is the accrued interest of bond i on calculation day t
$A_{i,t-s}$	is the accrued interest of bond i on rebalancing day t-s
$CASH_{t-1}$	is the cash on the previous business day
$CP_{i,t}$	is the value of the next coupon payment of bond i during an ex-dividend period. Outside the ex-dividend period, this value is 0
$G_{i,t}$	is the value of any coupon payment received from bond i at time t. If there is no payment the value is 0
$N_{i,t-s}$	is the amount outstanding of bond i on the previous rebalancing day t-s
$days_{ACT/360}(t-1, t)$	is the number of days between the previous calculation date (t-1) and the current calculation date t
$P_{i,t}$	is the closing price of bond i on the last business day on or before the previous rebalancing day
$P_{i,t-s}$	is the closing price of bond i on the last business day on or before the previous rebalancing day
$SOFR_{t-2USBD}$	is the SOFR rate falling two U.S. Government Securities Business Days prior to the calculation day i
TR_t	is the total return index level on day t
TR_{t-s}	is the closing total return index level on the previous rebalancing day
$XD_{i,t-s}$	is ex dividend indicator flag. 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

For specific index formulae please refer to *iBoxx Bond Index Calculus* document available at <https://www.spglobal.com/spdji/en/> under *Methodology*.

4.6 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, S&P DJI will estimate the approximate value based on the available data at the time of calculation.

4.6.1 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.

4.6.2 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).

4.6.3 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.

4.6.4 Maturity extension

4.6.4.1 Maturity extension for perpetual bonds without a reset date

Maturity	Coupon/call structure	Workout date at issuance	Updated Workout date if not called
Perpetual	Fixed/ Callable	Assume first call date as workout date	Extend workout date until the assumed next call date - 5 years from first call date*.

*Assumes the terms allow for a redemption at the new assumed maturity date.

4.6.4.2 Maturity extension for perpetuals & dated fixed-to-fixed bonds with a reset date

Maturity	Coupon/Call structure	Workout Date at issuance	Updated Workout date if not called
Perpetual	Reset*/Callable	Assume first call date as workout date	Extend workout date until the end of the next reset date*
Dated	Reset/Callable	Assume reset date as workout date	Extend workout date until the end of the next reset date or final maturity date*

*Assumes the bond terms allow for a redemption at the new assumed maturity date

4.7 Index history

The full index history including index composition starts on 31 December 2006. The index level history that was calculated by a third-party prior to that date goes back to 31 December 1998 and started with a base value of 100. The only field available prior to 31 December 2006 is the 'Total Return Index Level'.

4.8 Settlement conventions

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

4.9 Calendar

S&P DJI publishes an index calculation calendar available on <https://www.spglobal.com/spdji/en/> under *iBoxx Indices Calendars*. This calendar provides an overview of the index calculation holidays of the iBoxx bond index families each year.

4.10 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. S&P DJI publishes an index calculation calendar which is available in the indices section on <https://www.spglobal.com/spdji/en/> 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 <https://www.spglobal.com/spdji/en/> for data subscribers.

4.11 Data publication and access

The table below summarizes the publication of Markit iBoxx USD Liquid High Yield Index at <https://www.spglobal.com/spdji/en/> for registered users and on the FTP server.

In addition to the indices detailed in this methodology, other indices covered by this document may be available. For a list of available indices, please refer [here](#).

Table 3: Data publication and access

Frequency	File Type	Access
Daily	Underlying file – Bond level	FTP Server
	Indices files – Index level	FTP Server / website / Bloomberg for index levels only
Daily from the 6th calendar day of the month (or next index publication day if the 6th calendar day falls on a non-business day)	Forwards	FTP Server
Weekly (Friday) ¹	Preview components	FTP Server / website
T-4, T-3 & T-2	Preview components	FTP Server / website
Monthly	End of month components	FTP Server / website
	XREF files	FTP Server

¹Previews will be published starting from the first Friday that is three business days after the previous month-end rebalance.

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

Index Name	ISIN	SEDOL	Bloomberg	RIC
Markit iBoxx USD Liquid High Yield Total Return Index	GB00B4K07738	B4K0773	IBOXHY	.IBLUS0004

4.12 Index review

In addition to the daily governance of indices and maintenance of index methodologies, at least once within any 12-month period, the Index Committee reviews the methodology to ensure the indices continue to achieve the stated objectives, and that the data and methodology remain effective. In certain instances, S&P Dow Jones Indices may publish a consultation inviting comments from external parties.

5 Subindices

5.1 Markit iBoxx USD Liquid High Yield High/Low Beta Indices

The indices are designed to reflect the performance of the highest and lowest yielding sections of the USD denominated liquid sub-investment grade corporate bond market. The indices are distinct subsets of the Markit iBoxx USD Liquid High Yield index. The Markit iBoxx USD Liquid High Yield High Beta index includes the highest yielding half of securities from each sector of the Markit iBoxx USD Liquid High Yield index. Similarly, the Markit iBoxx USD Liquid High Yield Low Beta index includes the lowest yielding half of securities from each sector of the Markit iBoxx USD Liquid High Yield index. The separator between the highest and lowest yielding sections is the sector weighted median yield. The Markit iBoxx USD Liquid High Yield High/Low Beta indices are market value weighted, according to each bond's capped market value in the underlying Markit iBoxx USD Liquid High Yield index. All bonds in Markit iBoxx USD Liquid High Yield index are part of either the Markit iBoxx USD Liquid High Yield High Beta or the Markit iBoxx USD Liquid High Yield Low Beta index at any point in time.

The detailed rules for bond selection are described below:

1. Rank all bonds in each sector of Markit iBoxx USD Liquid High Yield Index in descending order based on the bid value of the annual yield. Additional ranking criteria by coupon (descending), notional value (descending) and ISIN (alphabetically) are employed to differentiate between bonds with identical yields.
2. Calculate sector weights based on the components of each ranked sector.
3. Calculate the 40th and 60th weighted percentiles for each ranked sector.
4. The weighted median is calculated as the bond with the smallest absolute distance : $\min(\text{ABS}(0.5 - \sum_i w_i))$ where w_i is the cumulative weight of bonds 1 to i in each ranked sector.

Bonds are assigned to either Markit iBoxx USD Liquid High Yield High Beta or Markit iBoxx USD Liquid High Yield Low Beta index based on the following scenarios:

a) Bonds with a bid yield greater or equal to the bid yield of the weighted median bond are assigned to the Markit iBoxx USD Liquid High Yield High Beta index as long as they meet the following conditions:

- the bond is new to the Markit iBoxx USD Liquid High Yield index or
- the bond was part of the Markit iBoxx USD Liquid High Yield High Beta index in the previous month or
- the ask yield of the bond is greater or equal to the bid yield of the 40th weighted percentile

b) Bonds with a bid yield lower than the bid yield of the weighted median bond are assigned to the Markit iBoxx USD Liquid High Yield Low Beta index as long as they meet the following conditions:

- the bond is new to the Markit iBoxx USD Liquid High Yield index or
- the bond was part of the Markit iBoxx USD Liquid High Yield Low Beta Index in the previous month or
- the bid yield of the bond exceeds the bid yield of the 60th weighted percentile by at least the spread between the ask and bid yield of the bond:

$$Yield_{bid,bond} + (Yield_{bid,bond} - Yield_{ask,bond}) \geq Yield_{bid,60^{th}percentile}$$

The annual yield used in ranking is calculated as a 5 business day average up to (and including) day t-3. If yield data is available for less than 5 business day, the average measure is calculated based on the available number of days, up to t-3).

The security/sector weights are based on the weights of the securities within Markit iBoxx USD Liquid High Yield index.

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

Index Name	ISIN	SEDOL	Bloomberg	RIC
Markit iBoxx USD Liquid High Yield High Beta Total Return Index	GB00BF83DQ20	BF83DQ2	IBXXHB11	.IBXXHB11
Markit iBoxx USD Liquid High Yield Low Beta Total Return Index	GB00BF83DS44	BF83DS4	IBXXLB11	.IBXXLB11
Markit iBoxx USD Liquid High Yield High Beta Clean Price Index	GB00BF83DR37	BF83DR3	IBXXHB12	.IBXXHB12
Markit iBoxx USD Liquid High Yield Low Beta Clean Price Index	GB00BF83DT50	BF83DT5	IBXXLB12	.IBXXLB12

6 Appendix I: 2009 changes between 50 Bond HY Index and the Unrestricted Index

On June 30th 2009 S&P DJI made significant changes to the original set of index rules to broaden the set of instruments qualifying for the index. Below is a summary of the rule changes between the Markit iBoxx USD Liquid High Yield Index before 30 June 2009 and after 30 June 2009.

Issuer and Issue Amount Outstanding

Before 30 June 2009	After 30 June 2009
The outstanding face value of a bond must be greater than or equal to USD 200 million as of the Bond selection cut-off date.	The issuer needs to have at least USD 1 billion outstanding face value of bonds as of the Bond Cut-off Date. The outstanding face value of a bond must be greater than or equal to USD 400 million as of the Bond Cut-off Date.

Weighting and Capping

Before 30 June 2009	After 30 June 2009
The Markit iBoxx USD Liquid High Yield Index attributes the same price-weight to each bond (assuming equal quantity of each bond).	The Markit iBoxx USD Liquid High Yield Index is market-value weighted. An issuer cap is calculated on the last business day of each month using the end-of-month closing prices for each bond. The capping factor for each issuer is 3% .

Rebalancing Timeline

Before 30 June 2009	After 30 June 2009
The Bond selection cut-off date will be three business day before the rebalancing date, which is two business days prior to the last business day of the month.	The Bond selection cut-off date will be four business day before the rebalancing date, which is three business days prior to the last business day of the month.
Bond ratings and amounts outstanding are used as of three business days before the rebalancing date, which is two business days prior to the last business day of the month.	Bond ratings and amounts outstanding are used as of four business days before the rebalancing date, which is three business days prior to the last business day of the month.
Only bonds with a first settlement date on or before the rebalancing date are included in the selection process	Only bonds with a first settlement date on or before four business days before the rebalancing date are included in the selection process

Ratings

Before 30 June 2009	After 30 June 2009
The highest rating determines the index rating.	The average rating determines the index rating

7 Appendix II: Additional changes to the index effective from April 30th, 2012

On April 30th, 2012 S&P DJI started to apply the rules described in chapter 3 above. Below is a summary of the main rule changes of the Markit iBoxx USD Liquid High Yield Index before April 30th, 2012 and after April 30th, 2012.

Age

Before April 30th, 2012	After April 30th, 2012
As of a rebalancing date, bonds must be less than five years old.	No restrictions.

Credit Rating

Before April 30th, 2012	After April 30th, 2012
<p>Bonds must be rated below investment grade – but not in default – at BB+ or lower by S&P or Fitch or Ba1 or lower by Moody's as of the Bond selection cut-off date to qualify. The average rating determines the index rating.</p> <p>Split-rated (e.g., Baa3/BB+ or Ba1/BBB) issues are excluded from the index. A split-rated issue means that an issue is rated investment grade by one rating agency and non-investment grade by another rating agency.</p>	<p>All bonds in the Markit iBoxx USD Liquid High Yield Index must have a iBoxx Rating of sub-investment grade. Ratings from the following three credit rating agencies are considered for the calculation of the iBoxx Rating:</p> <ul style="list-style-type: none"> • Fitch Ratings • Moody's Investor Service • S&P Global Ratings <p>Sub-investment grade is defined as BB+ or lower from Fitch and S&P and Ba1 or lower from Moody's, but not in default.</p> <p>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.</p>
<p>Issues rated D by S&P or Fitch, 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 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.</p>	<p>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 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.</p>
<p>After a bond has migrated into high yield from investment grade status, it must retain that status for three months (the "stabilization period") before it can be included in the index</p>	<p>After a bond has migrated into high yield from investment grade status, it must retain that status for three months (the "stabilization period") before it can be included in the index</p>

Bond Type

Before April 30th, 2012	After April 30th, 2012
Fixed coupon bonds, step-up bonds with coupon schedules known at issuance (or as functions of the issuer's rating), bonds with sinking funds, medium term notes ("MTNs"), Rule 144A offerings, callable bonds are candidates for inclusion.	Fixed coupon bonds, step-up bonds with coupon schedules known at issuance (or as functions of the issuer's rating), bonds with sinking funds, medium term notes ("MTNs"), Rule 144A offerings, callable and putable bonds are candidates for inclusion.
The following instruments are excluded from the index: preferred shares, convertible bonds, bonds with other equity features attached (e.g., options/warrants), perpetual bonds, floating rate notes, pay-in kind bonds, putables, US dollar denominated bonds for foreign corporate issuers (i.e., Yankee bonds) , zero coupon bonds and zero step-ups (GAINS) and Reg S offerings.	The following instruments are excluded from the index: preferred shares, convertible bonds, bonds with other equity features attached (e.g., options/warrants), perpetual bonds, floating rate notes, pay-in kind bonds (during the pay-in-kind period), zero coupon bonds, zero step-ups (GAINS) and Reg S offerings.

First Settlement Date

Before April 30th, 2012	After April 30th, 2012
New issues must have a first settlement date on or before the bond selection cut-off date to be included in the index for the next period.	New issues must have a first settlement date on or before the rebalancing date to be included in the index for the next period.

Inclusion and Exclusion of Countries

Before April 30th, 2012	After April 30th, 2012
NA	<p>A new country is added to the index if it is classified as developed market based on the "S&P Global iBoxx Global Economic Development Classification Methodology".</p> <p>A country is no longer eligible for the index if it is classified as emerging market based on the "S&P Global iBoxx Global Economic Development Classification Methodology". The "S&P Global iBoxx Global Economic Development Classification Methodology" is updated once per year.</p> <p>The results are published at the end of July.</p> <p>The inclusion/exclusion of a country becomes effective at the end of October.</p>

Issuer Country

Before April 30th, 2012	After April 30th, 2012
The issuer or, in the case of a finance subsidiary, the issuer's guarantor, must be domiciled in the US, Bermuda, Cayman Islands, Canada, Japan or Western Europe.	<p>Bonds from countries classified as developed markets based on the "S&P Global iBoxx Global Economic Development Classification Methodology" are eligible for the index.</p> <p>As of March 2012 the issuer or, in the case of a finance subsidiary, the issuer's guarantor, must be domiciled and the country of risk must be in Andorra, Australia, Austria, Belgium, Bermuda, Canada, Cayman Islands, Cyprus, Denmark, Faeroe Islands, Finland, France, Germany, Gibraltar, Greece, Hong Kong, Iceland, Ireland, Italy, Japan, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Portugal, San Marino, Singapore, Spain, Sweden, Switzerland, U.S., United Kingdom.</p>

Time to Maturity

Before April 30th, 2012	After April 30th, 2012
To qualify for the Markit iBoxx USD Liquid High Yield Index bonds must have at least three years and six months remaining time to maturity when joining the index.	To qualify for the Markit iBoxx USD Liquid High Yield Index a bond must have at least one year and six months remaining time to maturity as of the rebalancing day.
Bonds in the index with maturities less than three years will be excluded from the indices at the next rebalancing.	Bonds in the index with maturities less than one year will be excluded from the indices at the next rebalancing.
As of the rebalancing day the time to maturity of the bonds should be less than 15 years.	Bonds with a time to maturity of 15 years or less as of the bonds issuance day are eligible for the index.

8 Appendix III: Issuer amount outstanding

The result of the issuer amount outstanding for different scenarios is illustrated below:

- (IAO threshold for below examples is USD 1 billion)
- TBC = To be called
- DNI = Do not include

Sample 1: New issuance

- Bond 1: Existing bond not in index as of Month 1
- Bond 2: New issuance in month 3

	Amount / Membership status at the rebalancing at			
Bond and amount:	End of month 1	End of month 2	End of month 3	End of month 4
Bond 1 (existing, not in)	800 million	800 million	800 million (inclusion)	800 million
Bond 2 (new)			700 million (inclusion)	700 million
<i>Issuer amount outstanding</i>	800 million	800 million	1.5 billion	1.5 billion
<i>Expected IAO on next month rebalancing</i>	800 million	1.5 billion	1.5 billion	1.5 billion

Sample 2: Bond removal / Debt reduction

- Bond 1: Existing bond in index as of month 1 with redemption during month 4 announced during month 3
- Bond 2: Existing bond in index as of month 1

	Amount / Membership status at the rebalancing at			
Bond and amount:	End of month 1	End of month 2	End of month 3	End of month 4
Bond 1 (existing, in)	600 million	600 million	600 million (TBC)	0
Bond 2 (existing, in)	500 million	500 million	500 million	500 (Exclusion)
<i>Issuer amount outstanding</i>	1.1 billion	1.1 billion	1.1 billion	500 million
<i>Expected IAO on next month rebalancing</i>	1.1 billion	1.1 billion	500 million	500 million

Sample 3: Refinancing of existing instrument

- Bond 1: Existing bond in index as of month 1 with redemption during month 4 announced during month 3
- Bond 2: New issuance announced during month 3

	Amount / Membership status at the rebalancing at			
Bond and amount:	End of month 1	End of month 2	End of month 3	End of month 4
Bond 1 (existing, in)	1.2 billion	1.2 billion	1.2 billion (TBC)	0
Bond 2 (new issue)			800 million (DNI)	800 million
<i>Issuer amount outstanding</i>	1.2 billion	1.2 billion	2 billion	800 million
<i>Expected IAO on next month rebalancing</i>	1.2 billion	2 billion	800 million	800 million

Sample 4: Refinancing of existing instrument

- Bond 1: Existing bond in index as of month 1
- Bond 2: Existing bond in index as of month 1 with redemption in month 3 announced during month 2
- Bond 3: New issuance in month 4 announced in month 3

	Amount / Membership status at the rebalancing at			
Bond and amount:	End of month 1	End of month 2	End of month 3	End of month 4
Bond 1 (existing, in)	500 million	500 million	500 million (Keep)	500 million
Bond 2 (existing, in)	600 million	600 million (TBC)	0	0
Bond 3 (new issuance)				800 million
<i>Issuer amount outstanding</i>	1.1 billion	1.1 billion	500 million	1.3 billion
<i>Expected IAO on next month rebalancing</i>	1.1 billion	500 million	1.3 billion	1.3 billion

9 Index Governance

Index Committee

An S&P Dow Jones Indices Index Committee maintains the indices. All committee members are full-time professionals at S&P Dow Jones Indices. Meetings are held regularly. The Index Committee oversees the management of the indices, including determinations of intra-rebalancing changes, maintenance and inclusion policies, and other matters affecting the maintenance and calculation of the indices.

In fulfilling its responsibilities, the Index Committee has full and complete discretion to (i) amend, apply, or exempt the application of index rules and policies as circumstances may require and (ii) add, remove, or by-pass any bond in determining the composition of an index.

The Index Committee may rely on any information or documentation submitted to it or gathered by it that the Index Committee believes to be accurate. The Index Committee reserves the right to reinterpret publicly available information and to make changes to the indices based on a new interpretation of that information at its sole discretion. All Index Committee discussions are confidential.

The Index Committee is separate from and independent of other analytical groups at S&P Global. In particular, the Index Committee has no access to or influence on decisions by S&P Global Ratings analysts.

S&P Dow Jones Indices' Index Committees reserve the right to make exceptions when applying the methodology if the need arises. In any scenario where the treatment differs from the general rules stated in this document or supplemental documents, clients will receive sufficient notice, whenever possible.

In addition to the daily governance of indices and maintenance of index methodologies, at least once within any 12-month period, the Index Committee reviews the methodology to ensure the indices continue to achieve the stated objectives, and that the data and methodology remain effective. In certain instances, S&P Dow Jones Indices may publish a consultation inviting comments from external parties.

For more information on index governance policies, please refer [here](#).

10 Changes to the index

31 Mar 2025	Annual Index Review 2024 <ul style="list-style-type: none"> • Removal of the minimum run rule
01 Mar 2024	Annual Index Review 2023 <ul style="list-style-type: none"> • Inclusion of payment-in-kind (PIK) bonds • Differentiation of Non-bank senior debt between Senior Secured and Senior Unsecured bonds
30 Jun 2023	Annual Index Review 2022 <ul style="list-style-type: none"> • Introduction of 'Maturity extension' section • Index eligibility of bonds with extended workout dates • Creation of 'Renewable Energy Sector' within the 'Corporates' classification • Distressed Debt Exchanges – Rule Update
30 Jun 2022	Monthly forward start date updated from 10th calendar day to 6th calendar day
31 Mar 2022	Annual Index Review 2021 <ul style="list-style-type: none"> • Introduction of new market sector classification "Education" with market sub-sector classification "Academic & Educational Services"
31 Dec 2021	Cash re-investment reference rate changed to SOFR
01 Sep 2021	Monthly forward start date updated from 12th calendar day to 10th calendar day
01 Mar 2021	Governance and regulatory compliance section added
28 Feb 2021	Annual Index Review 2020 <ul style="list-style-type: none"> • Updated issuer amount outstanding determination parameters • Removed rating stabilization rule • Updated insurance classification
31 Jul 2020	Annual Index Review 2019 <ul style="list-style-type: none"> • Introduction of updated corporate classification schema • Implementation of updated bank tier classification • Updates as part of the changes in definition and treatment of hybrid bonds
21 Jul 2017	Launch of the Markit iBoxx USD Liquid High Yield High Low Beta Indices
15 Mar 2016	Index rebalancing chapter 4.3
21 Dec 2015	Clarification of bond pricing cut-off time in chapter 4.5
27 Aug 2015	Clarification of issue amount outstanding for exchanged bonds in chapter 2.4.1
01 Feb 2015	Defaulted or flat trading bonds treatment added in Chapter 2.2
01 Oct 2014	Index restatement, complaints sections added. Additional clarifications on bond eligibility, classification and corporate actions.

31 Mar 2014	Clarification of perpetual bonds eligibility in chapter 2.1. Clarification of the issuer amount outstanding rule in chapter 2.4.2 Clarification of sector classification in chapter 3.3
31 Mar 2013	Markit iBoxx USD Liquid High Yield Indices will be based on the pricing methodology described in the document 'Markit iBoxx Pricing Rules'
31 Aug 2012	Exclusion of bonds where the issuer is not incorporated in the list of developed countries (3.5 Issuer Country)
30 Apr 2012	Extension of the Markit iBoxx USD Liquid High Yield Index (Appendix II)
30 Jun 2009	Extension of the Markit iBoxx USD Liquid High Yield Index (Appendix I)
29 Feb 2008	Addition of new rule concerning exchange of bonds from same issuer
01 Nov 2006	Launch of Markit iBoxx USD Liquid High Yield Index

11 Further information

Client support

For client support please contact index_services@spglobal.com.

Formal complaints

Formal complaints should be emailed to spdji_compliance@spglobal.com.

Please note: spdji_compliance@spglobal.com should only be used to log formal complaints.

General index inquiries

For general index inquiries, please contact index_services@spglobal.com.

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 by 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. Also, the treatment of corporate actions in back-tested performance may differ from treatment for live indices due to limitations in replicating index management decisions. 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

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