

**S&P Dow Jones
Indices**

A Division of **S&P Global**

**iBoxx EUR Sovereigns ESG
Tilted Index Methodology**

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1 iBoxx EUR Sovereigns ESG Tilted Index

The iBoxx EUR Sovereigns ESG Tilted Index measures the performance of EUR denominated sovereign bonds, allocating higher weights to countries with favorable Sustainalytics Country-Risk Scores while reducing the weights of countries with less favorable Sustainalytics Country-Risk Scores.

The Index uses multi-source prices as described in the document “*iBoxx Pricing Methodology*” publicly available at <https://www.spglobal.com/spdji/en/>.

This document covers the index rules and calculation methodology.

2 Bond selection rules

The following selection criteria are used to determine the index constituents:

- Bond type
- Credit rating
- Time to maturity
- Amount outstanding
- Freedom House Global Freedom Status
- Sustainalytics Country-Risk Category
- Sustainalytics Country-Risk Score

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 EUR Sovereigns ESG Tilted Index include only Euro and legacy currency denominated bonds. The issuer's domicile is not relevant.

In particular, bonds with the following characteristics are included:

- Fixed coupon bonds ("plain vanilla bonds")
- Zero coupon bonds
- Step-up bonds
- Event-driven bonds with step-up and step-down coupons, such as rating- or tax-driven bonds
- Dated and undated callable subordinated corporate bonds, including fixed-to-floating rate bonds
- Soft bullet bonds. These are bonds with an initial fixed-coupon period, and a variable or step-up coupon period thereafter, that are structured so that they are expected to be redeemed at the end of the initial period
- Bonds with call options where the first and subsequent call dates are on a date when the bond is otherwise no longer eligible for the index, i.e. bonds with American call options within the last year prior to maturity

The following bond types are specifically excluded from the indices:

- Sinking funds and amortizing bonds
- Other callable and undated bonds
- Floating rate notes and other fixed-to-floater bonds
- Optionally and mandatory convertible bonds from non-financial issuers
- Subordinated financial debt with mandatory contingent conversion features that are based on an observable trigger, or with any conversion options before the first call date, is ineligible for the index
- Collateralized Debt Obligations (CDOs) and bonds collateralized by CDOs
- Retail bonds
- Private placements
- Bonds with differences between accrual and coupon payment periods and monthly-paying bonds
- Extended bonds as defined under section 'Maturity extension' in this document

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 S&P DJI's discretion based on the information available at the time of determination. 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.. Any bond classified as retail or private placement is added to the list of excluded private placements and retail bonds. The list is published at <https://www.spglobal.com/spdji/en/> for future reference and to ensure consistency.

In instances where a new bond type is not specifically excluded or included according to the published index rules, S&P DJI will analyze the features of such securities in line with the principles set out in this guide. S&P DJI may consult 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.

2.2 Credit rating

All countries in the iBoxx EUR Sovereigns ESG Tilted Index require a long-term local currency sovereign debt rating of investment grade. The average rating from the rating agencies below determines the index rating, which is used for all government bonds from the country.

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. Bonds with an RD/SD rating are excluded from the iBoxx EUR Sovereigns ESG Tilted Index. If a country 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, available at <https://www.spglobal.com/spdji/en/>. Prior to Jan.1, 2008, the lowest rating was used as the iBoxx Rating.

2.3 Time to maturity

At each rebalancing effective date, all bonds must have a minimum time to maturity of at least 12 months, calculated from the rebalancing effective date to the expected workout date using the respective bond's day count convention.

For the specific bond types below, the indices determine the bond's expected workout date as follows:

- Plain vanilla bonds: the expected workout date is the final maturity date
- Dated and undated callable financial hybrid capital bonds: the expected workout date is the first call date
- Non-financial hybrid capital bonds with an interest rate reset: the expected workout date is the first reset date
- Soft bullets: the expected workout date is the first call date

2.4 Amount outstanding

All bonds need to be denominated in EUR and need to have a minimum amount outstanding of EUR 1 billion.

2.5 Freedom House Global Freedom Status

To be eligible for the index, issuers must have a Freedom House Global Freedom Status of Free or Partly Free. In the case of a Freedom Status change, the country will be added or removed during the quarterly country allocation rebalancing. The information must be publicly available before the quarterly country allocation cut-off date (t-3).

2.6 Sustainalytics Country-Risk Category

All issuers with a Country-Risk Category of "Severe" will be excluded from the index. In the case of category change, the country will be added or removed during the quarterly country allocation rebalancing.

For more information, please refer to the [Sustainalytics Country Risk Ratings](#).

2.7 Sustainalytics Country-Risk Score

The use of Sustainalytics Country-Risk Score for each country is outlined in the following section "Country weight allocation"

2.8 Country weight allocation

For the iBoxx EUR Sovereigns ESG Tilted Index, country weights are decided by their relative Sustainalytics Country-Risk Scores.

The Sustainalytics Country-Risk Score is collected for all countries that are part of the iBoxx EUR Sovereigns ESG Tilted Index and have the information available before the quarterly country allocation cut-off date (t-3).

Table 1: Interpretation signs of factor

Sustainalytics Factor	Factor Interpretation Sign	Comment on sign
Country-Risk Score	Negative	High number implies lower weight

After the data above has been collected, the re-weight factor is calculated using the following steps:

- Normalize the data using a cross-sectional Z-score
- Adjust the sign of the Z-scores according to the expected impact of the Country-Risk Score as shown in above table. After the adjustment, a high Z-score is considered as a positive signal and a low Z-score a negative signal.

According to a country's Z-score relative to the whole group, non-linear adjustments are applied to country market-value weights in the form of a re-weight factor. The country with highest Z-score will be assigned a re-weight factor of 2, while the country with the lowest Z-score will be assigned a re-weight factor of 0.5. Countries in between are adjusted based on the calculation below.

If country Z-score is positive,

$$reweightingfactor_i = \frac{Zscore_i}{\max(Zscore_1, Zscore_2, \dots, Zscore_n)} + 1$$

Otherwise,

$$reweightingfactor_i = 1 - \frac{Zscore_i}{2 \times \min(Zscore_1, Zscore_2, \dots, Zscore_n)}$$

Country weights, determined three business days before quarterly rebalancing dates, are calculated by multiplying the iBoxx EUR Sovereigns ESG Tilted Index weight for each country by that country's respective re-weight factor outlined above. Country weights will then be normalized so they sum to 100%.

Additional capping will be applied as defined in the "Index weights" section.

Country weights are determined quarterly, at month end rebalancing on on Feb. 28, May 31, Aug. 31, and Nov. 30.

If a new country becomes eligible between quarterly rebalancing dates, it will not be considered into the index until the next quarterly rebalancing date. If an existing country in the index no longer satisfies all criteria defined earlier and thus becomes ineligible between quarterly rebalancing dates, all bonds from that country will drop out of the index at the next month end, and their weights will be proportionally allocated to all other countries in 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 Sovereigns

Bonds issued by a central government of a member country of the Eurozone and denominated in Euro or in a pre-Euro currency. The bonds are further broken down into Issuer Country.

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 iBoxx EUR Sovereigns ESG Tilted Index is rebalanced monthly on the last business day of the month after the close of business. Country weights are re-allocated every three months, on Feb. 28, May 31, Aug. 31, and Nov. 30 each year. Reweighting factors will be applied on Feb. 28, May 31, Aug. 31, or Nov. 30 to all debt-issuing developed market countries that are part of the iBoxx EUR Sovereigns ESG Tilted Index as of that date.

During the months between quarterly country weight allocations, country weights are determined in the following way: multiply country weight on last rebalancing day by country average total return in the past month and then normalize the sum of all country weights to 1. Bonds issued by the same country are market-value weighted according to the country weight.

Changes to amount outstanding are only taken into account if they are publicly known three business days before the end of the month. Changes in ratings are only taken into account if they are publicly known two business days before the end of the month. New bonds issued by existing countries in the index are taken into account at the end of the month 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. Bonds which are known to have been upgraded to investment grade two trading days before the end of the month are not included in the membership, but bonds which are known to have been downgraded to sub-investment grade two trading days before the end of the month do get excluded from the membership.

Any other changes 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.

Three business days before the end of each month, a membership list with the amount outstanding for each bond is published. This list contains the maximum number of constituents for the next month.

Two business days before the end of the month, the rating information for the bonds on the list is updated and the list is adjusted for all new rating changes that have occurred three business days prior to month-end. The weight of each country and the notional amount for each bond is calculated. The resulting list is the final membership list for the following month and is published as soon as all rating changes are confirmed.

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

4.4 Index weights

Once the eligible bond universe has been defined and the country weights determined using the methodology defined in section 2.7 Country weight allocation, the aggregate weight for any country will be capped at 35%. Any excess will be distributed to all the remaining countries on a pro rata basis.

Since these capping restrictions are applied in accordance with the country weight calculation three days prior to rebalance, there will be price movement in the final three days and therefore the caps may breach at month end.

Bonds issued by the same country are market-value weighted according to the constrained country weights.

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. If 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, S&P DJI may consult market participants prior to the next rebalancing date. Decisions are made publicly available on a timely basis and S&P DJI 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 Index Calculus

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

4.7 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.

4.7.1 Funged bonds

Bonds may be issued in several tranches. The different tranches are initially legally separate and therefore trade independently for a certain period. On and after the fungue date, the tranches will be combined into one bond, i.e. the parent tranche will contain the original security, as well as the additional notional(s) from the new tranche(s). After the fungue date, the prices for both the securities are the same, because they constitute one uniform bond. This is reflected in the indices as follows:

4.7.1.1 Parent and new tranche are both index constituents

- After the fungue date, the price from the parent tranche is used for the funged tranche; no price for the funged bond
- Funged tranche leaves the index at the next rebalancing and parent amount outstanding increases accordingly

4.7.1.2 Parent is an index constituent, but the new tranche is not

- No special intra-month treatment necessary
- Parent amount outstanding increases at the next rebalancing

4.7.1.3 Parent is not an index constituent but the new tranche is

- No special intra-month treatment necessary
- Funged tranche leaves the index; parent tranche enters the index at the next rebalancing

4.7.2 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.

4.7.3 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).

4.7.4 Maturity extension

4.7.4.1 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.

4.7.4.2 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

4.7.5 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.

4.7.6 Ex-dividend conventions

Some markets have ex-dividend conventions. Ex-dividend means that the next coupon is detached from the bond several days in advance of the coupon payment date. The date on which the next coupon is detached is the ex-dividend date and the period between the ex-dividend date and the coupon payment date is the ex-dividend period. If a bond is in the ex-dividend period, the next coupon payment will not be paid to a buyer of this bond, but will be paid to the original bond holder.

The indices and analytics calculations take ex-dividend conventions into account. During the ex-dividend period, the accrued interest of the bond is negative, while the next coupon payment is held separate in the variable coupon adjustment. If the bond enters the index during the ex-dividend period, then the next coupon payment and the coupon adjustment will not accrue to the index. However, if the bond was already in the index, the next coupon payment needs to be included in the total return calculations. This is controlled via the ex-dividend indicator which is 0 if the bond enters the index during the current ex-dividend period and 1 if not. The same treatment is also applied to all analytics calculation, i.e. the first cash flow is excluded from the calculations if the bond enters during the current ex-dividend period.

4.8 Index history

The Index history starts on 30 November 2010. The index has a base value of 100 on that date.

4.9 Settlement conventions

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

4.10 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.

4.11 Publication of the iBoxx EUR Sovereigns ESG Tilted Index

The iBoxx EUR Sovereigns ESG Tilted Index is calculated using end-of-day closing values and is distributed every Monday to Friday.

Bond and index analytical values are calculated each day using that day's closing prices. In addition, bond and index analytical values are calculated using the previous trading day's closing prices on the last calendar day of each month if that day is not a regular trading day as well as on common bank holidays as published in the iBoxx index calculation calendar. This index calculation calendar is available at <https://www.spglobal.com/spdji/en/>. Index data is also available from the main information vendors.

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

4.12 Data publication and access

The table below summarizes the publication of the iBoxx EUR Sovereigns ESG Tilted Index in the *Indices* section of the S&P DJI website at <https://www.spglobal.com/spdji/en/> for registered users and on the FTP server.

Table 2: Frequency, File type 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 the next index publication day if the 6th calendar day falls on a non-business day)	Forwards	FTP Server
Monthly	End of month components	FTP Server / website

4.13 Annual 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 Related Indices

Unless otherwise specified, the related indices follow the same methodology as the respective underlying index.

5.1 iBoxx EUR Sovereigns ESG Tilted Select Indices

Index Objective

The iBoxx EUR Sovereigns ESG Tilted Select Indices measure the performance of bonds in the iBoxx EUR Sovereigns ESG Tilted Index (the underlying index) by further reducing country weights for countries ranking within the highest 20% of all countries' carbon emissions using the Production-Based Carbon Emissions per GDP from the Trucost Sovereign Environmental Dataset.

The index family includes:

- iBoxx EUR Sovereigns ESG Tilted 1-3 Select Index [ISIN: GB00BT95X760]
- iBoxx EUR Sovereigns ESG Tilted 3-5 Select Index [ISIN: GB00BT95XB07]
- iBoxx EUR Sovereigns ESG Tilted 5-7 Select Index [ISIN: GB00BT95XC14]
- iBoxx EUR Sovereigns ESG Tilted 7-10 Select Index [ISIN: GB00BT95X877]
- iBoxx EUR Sovereigns ESG Tilted 10+ Select Index [ISIN: GB00BT95X984]

Eligibility Criteria

In addition to the underlying index eligibility criteria, at each rebalancing reference date, bonds must satisfy the following to be eligible for index eligibility:

- **Listed Countries:** not be included in the EU's list of non-cooperative jurisdictions for tax purposes.
- **Issue amount outstanding:** have an aggregate amount outstanding at issue level more than or equal to EUR 2 billion.
- **Issuer amount outstanding:** have an aggregate amount outstanding at the issuer/country level more than or equal to EUR 5 billion, calculated based on issue amount outstanding of EUR 2 billion and above
- **Maturity:** Bonds with the following time to maturities are eligible for the respective maturity-based indices: 1-3 years, 3-5 years, 5-7 years, 7-10 years, and 10+ years.

For more information on the EU's list of non-cooperative jurisdictions, please refer [here](#).

Constituent Weighting

In addition to the underlying index weighting, the index country tilt weights constituents based on relative carbon intensity. The country tilt weights calculate quarterly, effective on the following dates: February 28th, May 31st, August 31st, and November 30th.

Calculation of Carbon Intensity (CI)

The carbon intensity calculates as Production Based Carbon Emissions per GDP sourced from the Trucost Sovereign Environmental dataset.

Carbon Intensity (CI) of the index calculates as the weighted score of country weight in an index multiplied by the carbon intensity of the country.

The Trucost Country CI calculates for all countries that are part of the iBoxx EUR Sovereigns ESG Tilted Index and have the information available before the quarterly country allocation cut-off date (T-3). If a country does not have information available before the cut-off date, the country's CI score from the prior quarter carries over.

Calculation of Country Tilt Weights at Quarterly Reweightings

1. At each quarterly reweighting, rank countries represented in the iBoxx EUR Sovereigns ESG Tilted index [ISIN: GB00BPMVMT88] by carbon emissions. Assign the highest-ranking 20% carbon emitting countries a tilting factor of 0.5.
2. After applying the tilting factor, recalculate the country weights for specific maturity indices by multiplying weights, adjusted for index composition changes from the above eligibility criteria. After adjustment, normalize the country weights in the index to sum up to 100%.
3. Calculate the index's CI based on the calculated country weights and compare to the corresponding CI of the relevant iBoxx EUR Sovereigns maturity index ('Standard Index') (e.g., the iBoxx EUR Sovereigns 1-3 Index (ISIN: DE0009682856) for the 1-3 years maturity-based index).
4. If the calculated CI for that maturity index is less than that of the Standard Index, the index uses the country tilt weights as determined in Step 2. If the calculated CI for the maturity index is greater than or equal to that of the Standard Index, apply the following Fail-Safe Mechanism:
5. Fail-Safe Mechanism:
 - a. Reduce the tilting factor for the highest-ranking 20% carbon emitting countries by 0.1 (from 0.5 to 0.4) and simultaneously increase the tilting factor for the lowest-ranking 20% carbon emitting countries by 0.1 (from 1 to 1.1).
 - b. Recalculate the index's carbon intensity by repeating the steps as listed in the Rebalancing process from Step 2 onwards.
 - c. Repeat this process iteratively by simultaneously reducing and increasing the tilt factor (by 0.1 in each iteration) until the index's carbon intensity as per the tilt weights is lower than the Standard Index.

Calculation of Country Tilt Weights at Non-Quarterly Rebalancing Months

At each non-quarterly monthly rebalancing, multiply country weights from the prior rebalancing day by country average total return during the past month. Then, normalize the sum of all country weights to 1. Bonds issued by the same country are market-value weighted according to the country weight.

Index Maintenance

Additions. If a new country becomes eligible between quarterly rebalancing dates, it is not considered eligible for the index until the next quarterly rebalancing date.

Deletions. If an existing country in the index no longer satisfies all eligibility criteria between quarterly rebalancing dates, all bonds from that country are removed from the index at the next month end and the bonds' weights are proportionally allocated to all other countries in the index.

Index Data

The indices calculate based on bid prices. New securities are included in the indices at the respective ask prices when entering the maturity reference indices.

Index History

The indices' history starts on February 28, 2015, with a base value of 100.

6 Summary of key ESG Factors

Explanation of how ESG factors are reflected in the key elements of the benchmark methodology <i>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].</i>	
Item 1: Name of Benchmark Administrator	S&P Dow Jones Indices Limited
Item 2: Type of benchmark or family of benchmarks <i>The “type of benchmark” refers to the type of ‘underlying asset’, as selected from the list provided in Annex II to 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.</i>	Sovereign debt
Item 3: Name of benchmark or family of benchmarks	iBoxx EUR Sovereigns ESG Tilted Index
Item 4: Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?	Yes
Item 5. If the response to (4) is “Yes,” the indices stated here take into account ESG factors.	For a list of the benchmarks within this family that take in account ESG factors, please refer to the S&P Dow Jones Indices Limited Benchmark Register .
Item 6: Where the response to (4) is ‘Yes’, the section below lists those ESG Factors* that are taken into account by the ESG indices governed by the methodology, including those ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816. <i>*ESG factors’ are defined in Annex II of 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.</i>	
Item 6a: List of Environmental factors considered	<ul style="list-style-type: none"> • <i>Weighting:</i> For the Related Indices (Section 5) - Carbon Intensity from the Production-Based Carbon Emissions per GDP from the Trucost Sovereign Environmental Dataset – Section 5.1.
Item 6b: List of Social factors considered	<ul style="list-style-type: none"> • <i>Exclusion:</i> Freedom House Global Freedom Status – Section 2.5.
Item 6c: List of Governance factors considered	N/A
Item 6d: List of any other overall ESG factors	<ul style="list-style-type: none"> • <i>Exclusion:</i> Sustainalytics Country-Risk Category– Section 2.6. • <i>Weighting:</i> Sustainalytics Country-Risk Score - Section 2.8. • <i>Weighting:</i> Calculation of Carbon Intensity (CI) – Section 5.1.
Item 8: Data and standards used:	
Item 8a(i): Source of input	Data is sourced externally from Sustainalytics ESGResearch , Freedom House and S&P Trucost Limited (a part of S&P Global).

<p>Item 8a(ii): Data input</p>	<p>Sustainalytics</p> <p>Sustainalytics is a leading independent ESG and corporate governance research, ratings and analytics firm that support investors around the world with the development and implementation of responsible investment strategies.</p> <p>In particular, this index uses the following ESG Products: Sustainalytics Country Ratings</p> <p>For details on Sustainalytics ESG Research's full suite of ESG products, please refer to: http://www.sustainalytics.com</p> <p>Sustainalytics' research process involves the collection and analysis of information made available by third parties, including civil society, corporate, government, industry association, investor, media and regulatory sources. Sustainalytics also uses 3rd party data providers about which information is available at https://www.sustainalytics.com/legal-disclaimers/</p> <p>Freedom House</p> <p>Freedom House is a non-profit organization that conducts research and advocacy on democracy, political freedom, and human rights.</p> <p>In particular, this index uses the following ESG Product: Freedom House Global Freedom Status</p> <p>For more details, please refer to: http://www.freedomhouse.org</p> <p>S&P Trucost Limited (a part of S&P Global)</p> <p>This methodology uses several datasets provided by S&P Trucost Limited:</p> <ul style="list-style-type: none"> Trucost Sovereign Environmental Dataset <p>For further information, please refer to: https://www.support.marketplace.spglobal.com/en/datasets/alternative/trucost_environmental/trucost_environmental_data_methodology_guide.pdf</p>
<p>Item 8b: Verification and quality of data</p>	<p>S&P DJI's Global Data Management Team holds the responsibility of data quality assurance and validation of third-party data sources, including all ESG datasets. This process involves regular reviews of new data received, and includes comparison with previous data, coverage and identifier checks as well as escalation of suspect data to data vendors. S&P DJI also hold regular feedback sessions with data partners and vendors to share any quality concerns and to remedy any issues that are observed during data validations performed by the Global Data Management Team. In addition, all users of third-party data perform their own review of data used in the maintenance of indices.</p> <p>Sustainalytics Quality Approach to:</p> <p>Country Risk Ratings:</p> <p>Company Research:</p> <ul style="list-style-type: none"> Continuous improvement and maintenance of quality and research standards: Sustainalytics follows a set of Quality Assurance (QA) protocols that provide guidance to the Country Research (CR) and the Product Strategy & Development (PSD) team members on the Country Risk Rating (CRR) quarterly update process. <p>The CR team members review that the indicator data reflects the third-party's latest data releases in a correct and consistent manner on a quarterly basis. It does so by documenting any relevant updates for the indicators, checking consistency of the data (in relation to the previous quarters), and performing data validation on the updated indicators. Furthermore, the Country</p>

Risk team members perform a check of the standardization and momentum score calculations. The QA process includes confirming that the raw data is stored correctly and validating the consistency of the raw data and all the formulas for standardization and momentum score calculations. Lastly, the CR team members complete a final validation of the deliverables to review the data prior to delivering it to the PSD team members to feed into the calculations model.

The PSD team members conduct a routine maintenance of the calculations model prior and post running of the calculations to review that all the formulas, transformations, standardizations, logic tests, rules are in place and correct. The PSD team members also validate the model output by running the calculations manually on a sample of countries that were randomly selected to review that the model output is correct. A new quarter's calculation results are compared with the previous quarter and changes are logged. Basic statistical testing is done to validate the deviations and change between quarters. Any change that is above the trend or average is investigated to check for relevance and to understand what is driving the change. The calculated results are then fed into an upload file. The ESG Factors Score and Country Risk Score calculations are manually done once more to verify that all calculations and the final outputs are indeed correct. The data entries are matched with the calculations model to review that there have been no distortions or data left behind.

An upload file is then provided to Sustainalytics' Data Services team to upload into our systems and internal servers. Each field has pre-defined rules embedded that provides an error & reject if any field in the upload file does not match the specified rules. The data is then uploaded into the data lake and a change log is produced. The PSD team members use this change log to verify that only the indicators and data points being updated are reflecting any changes. Again any changes/fluctuations that do not match with the long term trend for that data point is flagged. A review is done to confirm that the change or fluctuation is representative of actual risk and validated by data, external news points and research. The data is then uploaded into a TEST environment after which test deliverables are produced. The test deliverables are then checked for any errors by the CR and PSD teams. The data is pulled from the Test environment and used to produce our country risk ratings PDF reports. A sample of reports are tested to confirm that the data is being represented appropriately in the graphs and figures in the country reports. Once the review is done, the data is ready to be delivered to our clients

Data and deliverable management

- Quality and reliability of our proprietary (i.e. research) data through automated quality assurance, prior to publication;
- Quality and reliability of standard deliverables through end-of-gate quality assurance process.
- Quality and reliability of client deliverables through end-of-gate quality assurance processes (automated and manual);

Update cycle

- Country Risk Rating Research is updated quarterly. Although, the indicator data is typically updated annually by our third-party sources, these updates occur at different times throughout the year. Each quarter, we include all the indicators that have changed in the past three months.

Freedom House Quality Approach to:

Global Freedom Status:

Data is produced each year by a team of in-house and external analysts and external advisers from the academic, think tank, and human rights communities. The analysts, who prepare the draft reports and scores, use a broad range of sources, including

news articles, academic analyses, reports from nongovernmental organizations, individual professional contacts, and on-the-ground research. The analysts score countries and territories based on the conditions and events within their borders during the coverage period. The analysts' proposed scores are discussed and defended at a series of review meetings, organized by region and attended by Freedom House staff and a panel of expert advisers. The end product represents the consensus of the analysts, outside advisers, and Freedom House staff, who are responsible for any final decisions.

Freedom House staff thoroughly vet analysts prior to contracting them in order to avoid political bias or lack of methodological rigor. Once selected, analysts are asked to ground any proposed score changes in the real-world events of the year under review, typically confirmed through reputable news media or other credible sources. After analysts submit their proposed scores and draft narrative reports, all submissions are reviewed and discussed by fellow analysts, Freedom House staff, and outside experts. Scores are also compared with those of other countries in the region and the world, both that year and across time, to ensure that they are rational and proportional, and that the methodology is being applied consistently.

For the S&P Global Trucost Research Process:

S&P Global Trucost follows a four-step research process designed to minimize the environmental reporting burden of companies ("survey fatigue") and to provide a transparent system for companies to verify their environmental performance profile, and, at any time, contribute to their most recently available data.

Fourstep research process:

1. **MAP company business segments:**S&P Global Trucost maps company business segments to more than 450 business activities in the S&P Global Trucost model. The model is based on the North American Industry Classification System (NAICS), but goes into greater granularity in some areas, such as power generating utilities.
2. **ESTIMATE data-modelled profile:**Once company business segments have been mapped to S&P Global Trucost sectors and their share of revenue apportioned to each, S&P Global Trucost is able to efficiently generate a data modelled profile for the company. S&P Global Trucost uses its environmentally extended input/output (EEIO) model to estimate data for over 800 environmental and operational metrics across the entire operations of companies, from the raw materials they depend on in their supply chains to the electricity they purchase to power their operations.
3. **COLLECT public disclosure:**S&P Global Trucost searches for environmental performance information in annual reports, sustainability reports, websites, and other publicly disclosed sources. Third party datasets, like disclosures to the CDP, are also reviewed. We then standardize reported environmental performance data to best practice guidelines so that it can be compared across companies, regions, and business activities. To correct reporting errors, vigorous data control procedures are applied, such as sector specialist data reviews, automated outlier identifications and year-on-year comparisons. Wherever a material metric is not disclosed, S&P Global Trucost uses its modelled value, thus ensuring that all data gaps have been filled.
4. **ENGAGE with company:**S&P Global Trucost then conducts an annual engagement with every company, providing the opportunity to verify environmental performance and provide additional information. Companies are further welcomed to contact S&P Global Trucost analysts at any point in their environmental reporting cycle to provide their most recently available data. This ensures S&P Global Trucost's data is both accurate and up to date.

	5. For further information, please refer to: https:// www.support.marketplace.spglobal.com/en/ datasets/alternative/trucost_environmental/trucost_environmental_data_methodology_guide.pdf
Item 8c: International reference standards	<ul style="list-style-type: none"> • For Country Risk Ratings Sustainalytics does not rely on international standards or conventions. • For Global Freedom Status the report's methodology is derived in large measure from the Universal Declaration of Human rights, adopted by the UN General Assembly in 1948.
Item 9a: Information updated on	November 2024
Item 9b: Reason for update	New index addition

7 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](#).

8 Changes to the iBoxx EUR Sovereigns ESG Tilted Index

Nov. 22, 2024	Launch of iBoxx EUR Sovereigns ESG Tilted Select Indices
Aug. 31, 2023	Annual Index Review 2022 <ul style="list-style-type: none"> ● Treatment of distressed debt exchanges ● Introduction of new economic sector classification "Energy" with new market sector classification "Renewable Energy" ● Maturity extension section added
June 30, 2022	<ul style="list-style-type: none"> ● Monthly forward start date updated from 10th calendar day to 6th calendar day
May 2022	<ul style="list-style-type: none"> ● Launch of iBoxx EUR Sovereigns ESG Tilted Index

9 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.

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

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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Some indices use the Global Industry Classification Standard (GICS[®]), which was developed by, and is the exclusive property and a trademark of, S&P Global and MSCI. Neither MSCI, S&P DJI nor any other party involved in making or compiling any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability, or fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P DJI, any of their affiliates

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ESG Indices Disclaimer

S&P DJI provides indices that seek to select, exclude, and/or weight index constituents based on, but not limited to, certain environmental, social or governance (ESG) indicators, or a combination of those indicators, including the following: environmental indicators (including the efficient use of natural resources, the production of waste, greenhouse gas emissions, or impact on biodiversity); social indicators (such as, inequality and investment in human capital); governance indicators (such as sound management structures, employee relations, remuneration of staff, tax compliance, respect for human rights, anti-corruption and anti-bribery matters), specific sustainability or values-related company involvement indicators (for example, production/distribution of controversial weapons, tobacco products, or thermal coal), or controversies monitoring (including research of media outlets to identify companies involved in ESG-related incidents).

S&P DJI ESG indices use ESG metrics and scores in the selection and/or weighting of index constituents. ESG scores or ratings seek to measure or evaluate a company's, or an asset's, performance with respect to environmental, social and corporate governance issues.

The ESG scores, ratings, and other data used in S&P DJI ESG indices is supplied directly or indirectly by third parties (note these parties can be independent affiliates of S&P Global or unaffiliated entities) so an S&P DJI ESG index's ability to reflect ESG factors depends on these third parties' data accuracy and availability.

ESG scores, ratings, and other data may be reported (meaning that the data is provided as disclosed by companies, or an asset, or as made publicly available), modelled (meaning that the data is derived using a proprietary modelling process with only proxies used in the creation of the data), or reported and modelled (meaning that the data is either a mix of reported and modelled data or is derived from the vendor using reported data /information in a proprietary scoring or determination process).

ESG scores, ratings, and other data, whether from an external and/or internal source, is based on a qualitative and judgmental assessment, especially in the absence of well-defined market standards, and due to the existence of multiple approaches and methodologies to assess ESG factors and considerations. An element of subjectivity and discretion is therefore inherent in any ESG score, rating, or other data and different ESG scoring, rating, and/or data sources may use different ESG assessment or estimation methodologies. Different persons (including ESG data ratings, or scoring providers, index administrators or users) may arrive at different conclusions regarding the sustainability or impact of a particular company, asset, or index.

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objectives may change over time, especially as further regulatory or industry rules and guidance are issued and the ESG sustainable finance framework becomes more sophisticated.

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