

**iBoxx EUR
Corporates PAB &
CTB Indices
Methodology**

December 2025

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iBoxx EUR Corporates PAB & CTB Indices

The iBoxx EUR Corporates PAB & CTB Indices measure the performance of euro-denominated (EUR) investment-grade debt. The indices aim to incorporate the EU's minimum standards for EU Climate Transition Benchmarks (EU CTBs) and EU Paris-aligned Benchmarks ('EU PABs') under Regulation (EU) 2019/2089 amending Regulation (EU) 2016/10111. The indices also incorporate factors that seek to manage transition risk and climate change opportunities in alignment with the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) 2017 Final Report¹ covering transition risk, climate change opportunities, and stranded assets.

The indices, administered by S&P Dow Jones Indices Limited, measure the performance of eligible corporate bonds from the iBoxx EUR Corporates Index (the "underlying index"). The corporate bonds are selected and weighted to be collectively compatible with a 1.5°C global warming climate scenario² at the index level, with no or limited overshoot. The indices apply exclusions based on company involvement in specific business activities, company violations against the principles of the United Nations Global Compact (UNGC), and involvement in relevant controversies, all outlined in the ESG criteria section. The index rules aim to efficiently track the EUR investment grade corporate bond universe, whilst upholding minimum standards of investability and liquidity.

The indices are designed to address turnover and transaction cost challenges, ratings changes, and other factors which lead to monthly constituent changes. The indices aim to minimize the turnover and efficiently track the maturity, rating, industry and option adjusted duration (OAD) profile of the parent index while achieving the following constraints:

- Reduced overall absolute greenhouse gas (GHG expressed in CO₂ equivalents) emission levels compared to their respective underlying parent index
- Minimum self-decarbonization rate of absolute GHG emissions in accordance with the trajectory implied by Intergovernmental Panel on Climate Change's (IPCC) most ambitious 1.5°C scenario (with no or limited overshoot), equating to at least 7% GHG intensity reduction on average per annum
- Increased exposure to green bonds as deemed by Climate Bonds Initiative (CBI), Environmental Finance (EF), and S&P Market Intelligence Reference Data using the concept of use of proceeds
- Constituent-level capping to address liquidity and diversification
- Reduced exposure to fossil fuel reserves compared to the parent index
- Yield-to-worst (YTW) improvement against the parent index

The index features the exclusion of companies from the underlying parent index as follows:

- Companies with involvement in controversial weapons and tobacco as captured by Sustainalytics
- Companies with involvement in small arms, military contracting, thermal coal, oil & gas production and power generation, oil sands, shale energy as captured by Sustainalytics (applicable for the ParisAligned Indices only)

1. Financial Stability Board's Task Force on Climate-related Financial Disclosures' (TCFD). (2017). Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, available at <https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf>.

2. A climate scenario of 1.5°C above preindustrial levels has been deemed important by the IPCC: Masson-Delmotte, V., Zhai, P., Pörtner, H. O., Roberts, D., Skea, J., Shukla, P. R. Waterfield, T. (2018). Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C. IPCC, available at www.ipcc.ch/sr15.

- Companies whose revenues from coal, oil, or natural gas exploration or processing activities exceed defined thresholds, and electricity generation companies that exceed stated revenue thresholds as captured by S&P Global Trucost (applicable for the PAB Indices only)
- Companies non-compliant with United Nations Global Compact (UNGC) principles around human rights, labor, environment, and anti-corruption as captured by Sustainalytics
- Companies involved in relevant ESG controversies as captured by the Sustainalytics Controversies Methodology

The indices use multi-source pricing as described in the document *iBoxx Pricing Rules* publicly available at <https://www.spglobal.com/spdji/en/>.

Bond selection rules

Bond type

Only fixed-rate bonds with cash flow that can be determined in advance are eligible. The indices are comprised solely of bonds. T-Bills and other money market instruments are not eligible. The iBoxx EUR Corporates PAB & CTB Indices include only Euro and legacy currency denominated bonds. The issuer's domicile is not relevant.

Bonds with the following characteristics are eligible for the index:

- Fixed coupon bonds (“plain vanilla bonds”)
- Zero coupon bonds
- Step-up bonds
- Callable bonds with American options
- 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
- Subordinated financial debt with a contingent conversion feature at the point of non-viability, in line with the capital adequacy requirements of Basel III
- Subordinated financial fixed-to-floating rate bonds with a reset date on or after the first call date
- Senior bank bonds with call options where the first call date is 25 months or less prior to final maturity

Bonds with the following characteristics are ineligible for the index :

- 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 is 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 analyses the features of such securities in line with the principles set out in 2.1 of this guide. S&P DJI may consult specific Index Committees. Any decision as to the eligibility or ineligibility of a new bond type is published and the index rules are updated accordingly.

Credit Rating

All bonds in the indices must have an iBoxx Rating of investment grade. Ratings from the following three credit rating agencies are considered for the calculation of the iBoxx Rating:

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

Investment grade is defined as BBB- or higher from Fitch Ratings and S&P Global Ratings and Baa3 or higher from Moody's Investor Service. Bonds with an RD/SD rating are excluded from the indices. If more than one of the above agencies rates a bond, then the iBoxx rating is the average of the provided ratings. The index consolidates ratings to the nearest rating grade and does not use rating notches.

If a new tranche of a bond is not rated, the rating of its parent applies.

For more information on average ratings, please refer to the iBoxx Rating Methodology, available at <https://www.spglobal.com/spdji/en/>.

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
- For senior callable bank bonds, the first call date is considered as the workout date if the call date is more than 11 months prior to the final maturity. In case the first call date is 11 months or less prior to the maturity date, the final maturity date is assumed as the workout date to calculate the time to maturity

Amount outstanding

All bonds require a specific minimum amount outstanding in order to be eligible for the index, as shown below. The figures indicate minimum issue sizes.

- Corporates: EUR 500 million – EUR 1 billion for legacy bonds (converted from pre-EUR currencies)

Climate & ESG Criteria

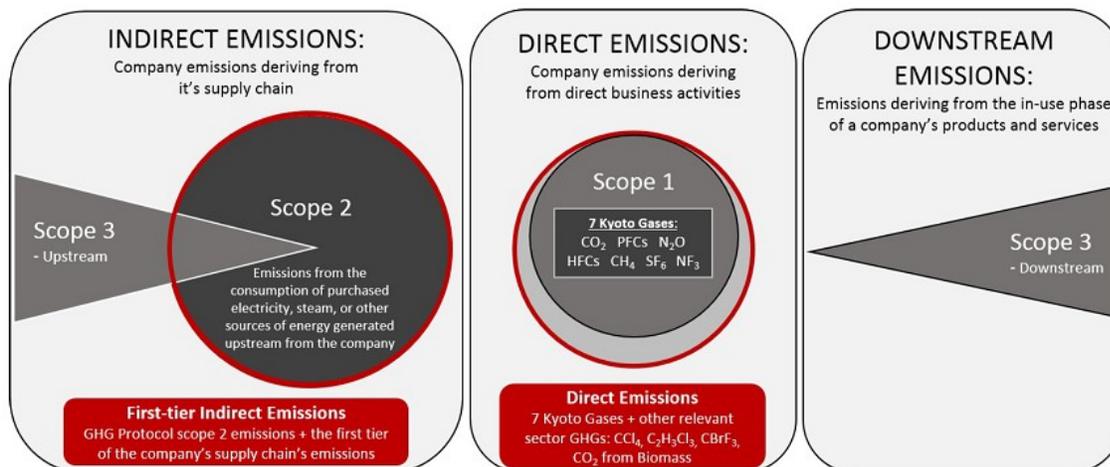
The climate and ESG data is sourced from different vendors, based on data availability and focus.

Greenhouse Gas Emissions

S&P Global Trucost Green House Gas Emissions

Scope 1, 2, and 3 emissions are sourced from S&P Global Trucost to meet decarbonization objectives which are in line with the European Union's benchmark regulations ("EU BMR"). All three scope emissions are measured in tons of CO₂ equivalent units. Issuers without full coverage of all three scope emissions are excluded from the index. Any Trucost data with financial year five years or more prior to the rebalancing reference date's year is considered as not covered.

- **Scope 1 emissions** - emissions from directly emitting sources that are owned or controlled by a company, for example, the emissions produced by the internal combustion engines of a trucking company's lorry fleet
- **Scope 2 emissions** -emissions from the consumption of purchased electricity, steam, or other sources of energy generated upstream from a company's direct operations
- **Scope 3 emissions** - all other emissions associated with a company's operations but that are not directly owned or controlled by the company. Scope 3 emissions therefore include several sources of indirect emissions in both the company's supply chain and downstream from the company's owned or controlled operations (e.g. the emissions from the in-use phase of a company's products or services, such as the driving of a lorry produced by automobile manufacturer). By such a definition, scope 3 emissions are attributed the largest quantity of a company's emissions footprint



Fossil Fuel Reserves

S&P Global Trucost Fossil Fuel Reserves

Fossil fuel companies hold vast oil, gas, and coal reserves which help determine their market value. Fossil fuel reserves pose climate risks when they are burned. S&P Global Trucost measures fossil fuel reserves across a range of activities including metallurgical coal, thermal coal, conventional oil, unconventional oil, natural gas, shale gas, and many other categories. The reserves are measured in million tons CO₂.

Fossil Fuel operations and Power Generation

S&P Global Trucost Sector Revenues

S&P Global Trucost defines 464 sectors that are closely aligned with the North American Industry Classification System (NAICS). S&P Global Trucost's sectors form the basis for the classification process used in the Environmental Register (TER) research process. Companies' revenues for a given financial year are assigned to each relevant S&P Global Trucost sector, mapping a single company to a number of S&P Global Trucost sectors. The sector revenue mapping can be used for excluding companies with a large % of revenue generated from environmental harmful activities (e.g. coal exploration).

As of each rebalancing reference date, companies considered for the iBoxx EUR PAB Indices are excluded from the eligible universe if the sum of their revenues derived from the relevant S&P Global Trucost sectors breach the following revenue thresholds:

Exclusion Type	S&P Global Trucost Revenue Sectors	Revenue Threshold
Coal Exploration or Processing	Bituminous Coal and Lignite Surface Mining Bituminous Coal Underground Mining All Other Petroleum and Coal Products Manufacturing Pipeline Transportation	≥ 1%
Oil Exploration or Processing	All Other Petroleum and Coal Products Manufacturing Crude Petroleum and Natural Gas Extraction Drilling Oil and Gas Wells Support Activities for Oil and Gas Operations Petroleum Lubricating Oil and Grease Manufacturing Mining and Oil and Gas Field Machinery Manufacturing Tar Sands Extraction Petroleum Refineries Petrochemical Manufacturing Pipeline Transportation	≥ 10%
Natural Gas Exploration or Processing	Crude Petroleum and Natural Gas Extraction Drilling Oil and Gas Wells Support Activities for Oil and Gas Operations Mining and Oil and Gas Field Machinery Manufacturing Natural Gas Liquid Extraction Natural Gas Distribution Industrial Gas Manufacturing Pipeline Transportation	≥ 50%
Power Generation	Coal Power Generation Petroleum Power Generation Natural Gas Power Generation Biomass Power Generation	≥ 50%

These exclusions use the sector revenues dataset from S&P Global Trucost.

For more information, please refer to <https://www.spglobal.com/esg/trucost>. For information on Trucost's methodology, please refer [here](#).

Controversies

Sustainalytics Controversy Score

Sustainalytics Controversies Research identifies companies' involved in incidents and events that may pose a business or reputation risk to a company due to the potential impact on stakeholders or the environment. The controversy score is based on the most up-to-date information from a wide range of reliable international and local news and NGO sources. Controversies are rated on a scale from one to five with five denoting controversies that have the most severe impact to stakeholders and the environment, leading to business risks to companies. In particular, the iBoxx EUR Corporates PAB & CTB Indices exclude companies that have a controversy score of 5.

For more information, please refer to [Sustainalytics Controversies Research](#).

UNGC/GSS screening

Sustainalytics Global Standards Screening

Companies are expected to operate within internationally accepted norms and standards related to:

- Human Rights
- Society
- Labor
- Environment

Sustainalytics Global Standards Screening (GSS) assesses companies compliance with the United Nations (UN) Global Compact Principles. It identifies companies that are violating or are at risk of violating these principles, by assigning one of the following three statuses:

- Non-Compliant. Classification given to companies that do not act in accordance with the UNGC principles and its associated standards, conventions, and treaties
- Watchlist. Classification given to companies that are at risk of violating one or more principles, for which all dimensions for Non-Compliant status could not be established or confirmed
- Compliant. Classification given to companies that act in accordance with the UNGC principles and its associated standards, conventions, and treaties

The nature and scope of impact on stakeholders is one of the primary ways Sustainalytics determine compliance status.

Companies classified as Non-Compliant, according to Sustainalytics, are ineligible for the indices. Companies not covered by Sustainalytics are excluded from the indices.

For more information, please refer to the [Sustainalytics Global Standards Screening](#).

Product Involvement

Sustainalytics Product Involvement Screening

Product Involvement (PI) provides research on company involvement in products and services, which allow for screening companies according to specific criteria motivated by ethical, impact, compliance or ESG risk considerations. Level of Involvement refers to the company's direct exposure to such products through revenue generation, while Significant Ownership indicates where the company has indirect involvement above a specified level of ownership of a subsidiary company with involvement. Companies not covered by Sustainalytics are excluded from the index. Issuers without coverage or with exposure to the following activities and at the following thresholds are excluded:

CT	PA	Product Involvement	Category of Involvement	Level of Involvement Revenue Threshold	Significant Ownership Threshold
X	X	Controversial Weapons	Tailor Made and Essential: The company is involved in the core weapon system, or components/services of the core weapon system that are considered tailor-made and essential for the lethal use of the weapon.	> 0%	≥ 25%
			Non-Tailor Made and NonEssential: The company provides components/services for the core weapon system, which are either not considered tailor-made or not essential to the lethal use of the weapon.	> 0%	≥ 25%
X	X	Tobacco	Production: The company manufactures tobacco products.	> 0%	≥ 25%
			Related Products/ Services: The company supplies tobacco-related products/services.	≥ 5%	≥ 25%
			Retail: The company derives revenues from the distribution and/or retail sale of tobacco products.	≥ 5%	≥ 25%
	X	Small Arms	Civilian Customers (Assault Weapons): The company manufactures and sells assault weapons to civilian customers.	> 0%	≥ 25%

CT	PA	Product Involvement	Category of Involvement	Level of Involvement Revenue Threshold	Significant Ownership Threshold
			Civilian Customers (Non-Assault Weapons): The company manufactures and sells small arms (non-assault weapons) to civilian customers.	> 0%	≥ 25%
			Key Components: The company manufactures and sells key components of small arms.	> 0%	≥ 25%
			Military / Law Enforcement Customers: The company manufactures and sells small arms to military/law enforcement.	> 0%	≥ 25%
			Retail/Distribution (Assault Weapons): The company is involved in the retail and/or distribution of assault weapons.	≥ 5%	NA
			Retail/Distribution (Non-Assault Weapons): The company is involved in the retail and/or distribution of small arms (non-assault weapons)	≥ 5%	NA
	X	Military Contracting	Weapons: The company manufactures military weapon systems and/ or integral, tailor-made components or these weapons.	≥ 10%	NA
			Weapons-Related Products and Services: The company provides tailor-made products and/or services that support military weapons.	≥ 10%	NA
	X	Thermal Coal	Extraction: The company extracts	≥ 5%	NA

CT	PA	Product Involvement	Category of Involvement	Level of Involvement Revenue Threshold	Significant Ownership Threshold
			thermal coal		
			Power Generation: The company generates electricity from thermal coal	≥ 5%	NA
	X	Oil Sands	Extraction: The company extracts oil sands.	≥ 5%	NA
	X	Shale Energy	Extraction: The company is involved in shale energy exploration and/or production	≥ 5%	NA
	X	Oil & Gas	Production: The company is involved in oil and gas exploration, production, refining, transportation and/or storage.	≥ 10%	NA
			Power Generation: The company generates electricity from oil and/or gas.	≥ 50%	NA

For more information, please refer to the [Sustainalytics' Product Involvement Research Methodology](#).

Green Bonds

The indices leverage external, independent data sources for determining “Green” bonds. The data is provided by Climate Bonds Initiative (CBI), Environmental Finance (EF) and S&P Market Intelligence Reference Data and contains self-labelled as well as other eligible Green bond issuances. The index considers bonds broadly based on the International Capital Market Association’s (ICMA) voluntary Green Bond Principles (GBP). The methodology uses dual sourcing, supplemented with (in-house) professional expertise, to determine whether multiple sources classify a given bond as “Green” based on the use of proceeds. This ensures each bond is “Green” labelled based upon at least 2 independent sources. All bonds need to have a clear commitment for the use of proceeds. Data is further verified based on publicly available prospectus and other relevant documents. Bonds for which the classification is pending or unlabeled are not considered “Green”.

ICMA is a trade association that serves capital markets to promote greater transparency, efficiency and harmony.

Climate Bonds Initiative (CBI)

Climate Bonds Initiative is an international organization working to mobilize global capital for climate action. CBI achieves this through the development of the [Climate Bonds Standard](#) and [Certification Scheme](#). Policy Engagement and Market Intelligence work. CBI provide weekly and monthly files to classify green bonds based on use of proceeds.

For more information on CBI, please refer to <https://www.climatebonds.net>.

Environmental Finance (EF)

Environmental Finance has a reputation in delivering market-leading content on the risks and opportunities present to the financial community of the move to a lower-carbon environment.

For more information on EF, please refer to <https://efdata.org/>.

S&P Market Intelligence Reference Data

S&P Market Intelligence Reference Data offers detailed reference data for bonds which enables a comprehensive view of assets from issuance to maturity. Self-labelled bonds green are captured based on information provided in the bond prospectus.

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 indices 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.

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.

Other sovereigns

Bonds issued by a central government that is not a member country of the Eurozone and denominated in Euro or in a pre-Euro currency are considered as "Other Sovereigns". In the classification schema, these bonds are shown as a sub-group in the category "Sub-Sovereigns".

Sub-sovereigns

Bonds issued by entities with explicit or implicit government backing due to legal provision, letters of comfort, or the public service nature of the issuer's business. The issuer requires a strong central government ownership/relationship if its bonds are not explicitly guaranteed by the central government.

The five main sub-sovereign sectors are:

- **Agencies:** Bonds issued by entities with a major focus on government-sponsored, public, noncompetitive services. The issuers are financial in nature and carry out government policies through special development programs, often explicitly government-backed or with a business scope defined by a specific law.
- **Supranationals:** Bonds issued by supranational entities, i.e. entities that are owned by more than one central government (e.g. World Bank, EIB).
- **Public Banks:** Bonds issued by publicly owned and backed banks that provide regular commercial banking services (e.g. NV Bank Nederlandse Gemeenten).
- **Regions:** Bonds issued by local governments (e.g. Isle of Man).
- **Other Sub-Sovereigns:** All remaining bonds considered sub-sovereign, classified into the following three main categories:
 - **Non-Financials:** Bonds issued by entities from the non-financial sector with an explicit or strong implicit debt guarantee from the state. The issuer's credit rating is closely correlated to the sovereign rating and expresses a strong credit uplift based on a high level of

government support. S&P DJI expects the issuer's credit rating to be no worse than on par or two notches below the sovereign rating. A 'strong implicit guarantee' means the issuer is 100% owned by the state or public sector with its debt consolidated into state public debt, or the issuer has preexisting access to government financing or funding derived from tax revenues. State-owned issuers that are profit-oriented, provide competitive services, and operate under a regulatory framework are considered Corporates.

- *Guaranteed Financials*: A specific bond issued by a private sector financial institution that is irrevocably guaranteed by a government. Most of these bonds are issued under programs set-up after the 2008 financial crisis.
- Bonds issued by unguaranteed institutions with an irrevocable and explicit guarantee by a central government that covers amount and timeliness of all interest and principal payments until the maturity of the bond.

Collateralized

There are three main categories: covered bonds, securitized bonds and other collateralized bonds.

Covered bonds

Bonds which are secured by a general pool of assets in case the issuer becomes insolvent, in particular bonds conforming to the criteria specified in UCITS 22.4 or similar directives, e.g. CAD III. In addition, bonds with a structure affording an equivalent risk and credit profile that are considered by the market as covered bonds are also included in the iBoxx Covered Bond Indices. The criteria taken into account in evaluating the status of a bond will be the structure, trading patterns, issuance process, liquidity and spread-levels.

Currently, the list of eligible covered bond types includes, but is not limited to:

- Austrian Pfandbriefe and Fundierte Bankschuldverschreibungen
- Australian, Belgian, Canadian, Danish, Dutch, Estonian, Finnish, Hungarian, Italian, Japanese, New Zealand, Norwegian, Polish, Portuguese, Singaporean, Slovakian, South Korean, Swedish, Swiss, Turkish, UK, and US covered bonds
- French Obligations Foncières, Obligations à l'Habitat, CRH and General Law Based Covered Bonds
- German Pfandbriefe, German contractual covered bonds
- Irish Asset Covered Securities
- Luxembourg Lettres de Gage
- Spanish Cédulas Hipotecarias and Cédulas Territoriales

Securitized bonds

Bonds secured against specific assets or receivables (ABS), mortgages (MBS) or cash flows from a whole business segment (Whole Business Securitizations) in each case via a special purpose vehicle.

Other collateralized bonds

Collateralized bonds not falling into the above two categories.

Corporates

Corporate bonds are issued by public or private corporations. Corporate bonds are further classified into Financials and Non-Financials bonds, and then into multiple-level economic sectors according to the issuer's business scope. The category insurance-wrapped is added under Financials for corporate bonds whose timely coupon and/or principal payments are guaranteed by a special mono-line insurer such as AMBAC or MBIA. The sector overview is as follows.

iBoxx Corporates Sector Overview

	Economic Sector	Market Sector	Market Sub-Sector		
Financials	Core Financials	Banks	Banks		
		Insurance	Life Insurance Nonlife Insurance		
	Financial Services	Financial Services	Equity Investment Instruments General Financial Nonequity Investment Instruments		
		Insurance-wrapped	*		
	Real Estate	Real Estate	Real Estate Investment & Services Real Estate Investment Trusts		
				Forestry & Paper Industrial Metals Mining	
	Non-Financials	Basic Materials	Basic Resources	Chemicals	
			Chemicals	Chemicals	
Consumer Goods		Automobiles & Parts	Automobiles & Parts		
		Food & Beverage	Beverages Food Producers		
			Personal & Household Goods	Household Goods Leisure Goods Personal Goods Tobacco	
		Consumer Services		Education	Academic & Educational Services
				Media	Media
			Retail	Food & Drug Retailers General Retailers	
Travel & Leisure			Travel & Leisure		
Energy		Oil & Gas	Oil Equipment / Services & Distribution Oil & Gas Producers		
		Renewable Energy	Renewable Energy		
Health Care		Health Care	Health Care Equipment & Services Pharmaceuticals & Biotechnology		
			Industrials	Construction & Materials	Construction & Materials
Industrial Goods & Services		Aerospace & Defense Electronic & Electrical Equipment General Industrials Industrial Engineering Industrial Transportation Support Services			
		Technology		Technology	Software & IT Services Technology Hardware & Equipment
				Telecommunications	Telecommunications
		Utilities			Utilities

Additional classification

Corporate debt is further classified into senior and subordinated debt. 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: 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 callable
			T2 non-callable	T2 non-callable
		T2 (pre-Jan '13 issuances)	LT2 callable	LT2 non-callable
			LT2 non-callable	UT2
			T1	T1 step
		T1 non-step		
Insurance	SEN	*	*	
	SUB	T3	*	
		T2 dated	T2 dated callable	T2 dated callable
			T2 dated non-callable	T2 dated non-callable
		T2 perpetual	*	*
T1	*	*		
Other sectors	SEN	*	*	
	SUB	Other	Hybrid** 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

Index calculation

Static data

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

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/>.

Rebalancing process

The iBoxx EUR Corporates PAB & CTB Indices are rebalanced monthly on the last business day of the month after the close of business. Changes to outstanding amounts are only taken into account if they are publicly known three business days before the end of the month. Changes in ratings are only taken into account if they are publicly known two business days before the end of the month. New bonds issued are taken into account if they are publicly known to settle until the last calendar day of the month, inclusive, and if their rating has become known at least three trading days before the end of the month.

Four business days before the end of each month, a preliminary membership list is published on the FTP server and in the *Indices* section at <https://www.spglobal.com/spdji/en/> for registered users.

Three business days before the end of each month, a membership list with final amount outstanding for each bond is published.

Two business days before the end of each month, the rating information for the constituents is updated and the list is adjusted for all rating changes which are known to have taken place two trading days before the end of the month. Bonds which are known to have been upgraded to investment grade two trading days before the end of the month are not included in the membership, but bonds which are known to have been downgraded to sub-investment grade two trading days before the end of the month do get excluded from the membership. However, if any bonds which are part of the broader EUR universe become eligible two business days prior to rebalancing because of rating or amount changes, they will be included in the Index.

On the last business day of each month, 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.

Index Construction

At each rebalancing, the eligible constituents are selected from the underlying parent index. Next, an optimization process is applied to the eligible constituents to efficiently track the parent index while minimizing the turnover. This section will cover the objective function and constraints which are used in the optimization process.

Objective Function

The objective function is designed to efficiently track the parent index at the sector level and minimize turnover.

$$\text{Minimize} \left(\frac{1}{n} \sum \left[\frac{(\text{OptimizedWeight}_i - \text{PriorWeight}_i)^2}{\text{PriorWeight}_i} \right] + \frac{1}{s} \sum \left[\frac{(\text{OptimizedSectorWeight}_i - \text{ParentSectorWeight}_i)^2}{\text{ParentSectorWeight}_i} \right] \right)$$

where:

n	number of bonds
s	number of sectors
ParentWeight_i	targets the parent bond weight at each rebalance date. Weights associated with bonds that drop out are reallocated to all remaining bonds on a pro rata basis
$\text{ParentSectorWeight}_i$	reflect sector weights of the parent index
OptimizedWeight_i	is solved via optimization
$\text{OptimizedSectorWeight}_i$	is solved via optimization

Optimization Constraints

The optimization incorporates transition risk, climate opportunities, return, risk, and tracking constraints.

Transition Risk Constraints

Transition risk constraints meet or exceed the EU BMR regulatory requirements and reduce absolute emissions over time. Below constraints help to meet the objectives of increasing exposure to companies with lower environment, social, and governance risk scores and reducing exposure to companies which possess high fossil fuel reserves.

- **Absolute Carbon Emissions (ACE*) Target based on S&P Global Trucost data:** For PAB indices, at least 50% less ACE than the underlying parent index, with a 2.5% buffer; for Climate Transition indices, at least 30% less ACE than the underlying parent index, with a 2.5% buffer.
- **7% Decarbonization Trajectory ACE* Target based on S&P Global Trucost data:** At least 7% reduction in ACE per year, compared to the index history start date, with a 2.5% buffer. If there are significant changes in the calculation methodology for GHG emissions, the base date resets.
- **Fossil Fuel Reserves Intensity (FFR*) based on S&P Global Trucost data:** At most 20% FRR compared to the underlying parent index (applicable to the PAB indices only) * *Further defined in Constraint-Related Definitions below.*

Table: Transition Risk Constraints

Constraint*	iBoxx EUR CTB Indices	iBoxx EUR PAB Indices	Data Source
Absolute Carbon Emission (ACE) Target	\leq underlying ACE \times 30% \times Buffer**	\leq underlying ACE \times 50% \times Buffer**	S&P Global Trucost
7% Decarbonization Trajectory ACE Target	where: t = number of months since index history start date		S&P Global Trucost
Fossil Fuel Reserves Intensity (FFR)	\leq FFR of underlying index	\leq 20% \times FFR of underlying index	S&P Global Trucost
* Constraints are defined in Constraint-Related Definitions below.			
** Where Buffer = 97.5% to represent a 2.5% margin to allow for drift between targeted and realized ACE.			

Constraint*	iBoxx EUR CTB Indices	iBoxx EUR PAB Indices	Data Source
*** AnchorACE corresponds to the index ACE level as of the index history start date.			

Climate Opportunities Constraints

The iBoxx EUR Corporates PAB & CTB Indices use climate opportunities constraints to increase exposure to green companies which issue green bonds through the concept of use of proceeds. Refer to the Green Bonds ESG Eligibility Criteria section for additional details.

Table 4: Climate Opportunities Constraints

Constraint	iBoxx EUR CTB Indices	iBoxx EUR PAB Indices	Data Source
Green Bond Improvement	≥ Green Bond Weight of underlying index	≥ 125% x Green Bond Weight of underlying index	CBI / EF / S&P

Risk, Exposure and Yield-to-Worst Constraints

These additional constraints are incorporated to manage concentration risk, tracking to the parent index, and yield-to-worst improvement against the parent index.

Table 5: Risk, Exposure and Yield-to-Worst Constraints

Constraint	iBoxx EUR Corporates PAB & CTB Indices
Yield-to-worst (YTW) Improvement	≥ Parent YTW
OAD Absolute Deviation Cap	+/- 0.25yrs
Maturity Bucket Weight Deviation Cap	≤ 2%
Rating Bucket Weight Deviation Cap	≤ 2%
Max Issuer Cap	≤ 5%
Minimum Issuer Threshold for Inclusion	≥ min(0.01%, 0.5 × Parent Weight)
Max Issue Deviation Cap	≤ 5 x Parent Weight
One-way Turnover (excluding Parent Adds / Drops)	≤ 5%

Constraint Relaxation Hierarchy

In the case that the optimization does not solve for a certain period each constraint in the hierarchy will be partially relaxed in 10% increments in the order listed below and repeated, until a solution is found.

- One-way Turnover
- Green Bond Improvement
- Fossil Fuel Reserves Constraint
- OAD absolute deviation constraint
- Max Issuer Constraint
- Max Issue Constraint
- Maturity Deviation Constraint
- Ratings Deviation Constraint
- Yield-to-worst Improvement

The following constraints are considered hard constraints and will not be relaxed:

- Absolute Carbon Emission (ACE) Target
- 7% Decarbonization Trajectory ACE Target

Constraint-Related Definitions

Absolute Carbon Emissions (ACE)

To calculate the absolute emissions for the parent index, the total base market value of the index is aggregated as debt outstanding for parent index.

To calculate the carbon footprint, as the parent index is a subset of the broader universe of iBoxx indices, the approximate total base market value (BMV) of each ticker, sourced from the all its bonds included in public iBoxx indices is appended. The total BMV is aggregated at the Trucost issuer level as debt outstanding for each company to determine its Carbon Footprint.

The Parent index emissions are calculated as follows:

$$\sum w_i \times Carbon\ Footprint_i \times Debt^{Parent}$$

where:

w_i	weight of company i in index
$Carbon\ Footprint_i$	$\frac{GHG1_i + GHG2_i + GHG3_i}{Debt_i}$
$GHG1_i$	Scope 1 GHG emissions in tCO_2e for company i
$GHG2_i$	Scope 2 GHG emissions in tCO_2e for company i
$GHG3_i$	Scope 3 (upstream and downstream) GHG emissions in tCO_2e for company i
$Debt_i$	market value of debt outstanding for company i in all iBoxx indices
$Debt^{Parent}$	total market value of debt outstanding in the parent index

Fossil Fuel Reserves (FFR)

$$\sum w_i \times \frac{Fossil\ Fuel\ Reserves_i}{Debt_i}$$

where:

w_i	weight of company i in index
$Fossil\ Fuel\ Reserves_i$	the embedded emissions (tCO2) within the fossil fuel reserves owned by company i
$Debt_i$	market value of debt outstanding for company i in iBoxx indices

The ACE target is calculated using the same currency for all underlying assets and recalculated on a yearly basis

Index data

The calculation of each index is based on bid prices. New securities are included in an index at their respective ask prices when they enter the iBoxx EUR 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 iBoxx EUR Corporates PAB & CTB Indices are calculated as end-of-day index and distributed once daily. The index is calculated every Monday to Friday. In addition, the index is calculated with the previous trading day's closing prices on the last calendar day of each month if that day is not a trading day as well as on common bank holidays as published in the iBoxx index calculation calendar available at <https://www.spglobal.com/spdji/en/>. Index data is also available from the main information vendors. Bond and index analytical values are calculated every day using that day's closing prices, or the previous trading day's closing prices on the last calendar day of each month if that day falls on a weekend or a common bank holiday as published in the iBoxx index calculation calendar. Closing index values and key statistics are published at the end of each calculation day in the Indices section at <https://www.spglobal.com/spdji/en/> for registered users.

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

Index Calculus

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

Index and Analytics Weight

The iBoxx EUR Corporates PAB & CTB Indices is weighted through an optimization process to ensure the EU PACT regulations and constraints are met. The amount outstanding of a bond is adjusted to reflect optimized weights.

All calculations are based on the adjusted amount outstanding.

Treatment of the special intra-month events

Data for the application of corporate actions in the indices 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.

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 funge 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 funge date, the prices for both the securities are the same, because they constitute one uniform bond. This is reflected in the indices as follows:

Parent and new tranche are both index constituents

- After the funge 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

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

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

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.

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).

Maturity extension

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.

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

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 nonoccurrence) 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.

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 exdividend 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.

Determination of benchmarks

Benchmark spreads are calculated for every constituent bond as the difference between the annual or semi-annual yield of the bond and the annual or semi-annual yield of its benchmark. The benchmark assignment for the bonds is reviewed monthly. Benchmarks for the bonds in the iBoxx EUR Corporates PAB & CTB Indices are equivalent to the benchmarks for the respective bonds in the iBoxx EUR Benchmark universe.

A benchmark bond of the Markit iBoxx EUR Benchmark universe is defined as the most liquid and low risk bond in each of the maturity bands listed below.

The procedure starts at first running a regression algorithm on all bonds in the Markit iBoxx Eurozone index in order to determine the benchmark curve, and bonds with a positive spread to the curve are eliminated. The procedure is then repeated until one of the following is met:

1. R-square above 0.99
2. Standard deviation of yield-spread to curve is less than 3.5 bps
3. Number of bonds left is between 15 and 40.

The bonds remaining after running the procedure above are assigned to Sets A or B depending on their age. An eligible bond is assigned to Set A within a maturity band if it is not older than two years. Otherwise, it is assigned to Set B. The age of a bond is calculated from the first settlement date to the current rebalancing date. The largest bond (by amount outstanding) of all bonds in Set A is selected as the respective benchmark for each defined maturity band. If Set A is empty, then the most recently issued bond of Set B is chosen as the respective benchmark of the band.

Maturity bands are defined as follows:

Benchmark Maturity Bands	Bond Maturity
1 year	< 1.5 years
2 years	1.5 to < 2.5 years
3 years	2.5 to < 3.5 years
4 years	3.5 to < 4.5 years
5 years	4.5 to < 5.5 years
6 years	5.5 to < 6.5 years
7 years	6.5 to < 7.5 years
8 years	7.5 to < 8.5 years
9 years	8.5 to < 9.5 years
10 years	9.5 to < 12.5 years
15 years	12.5 to < 17.5 years
20 years	17.5 to < 25 years
Long	≥ 25 years

For every bond in the Markit iBoxx EUR indices, the benchmark bond with the closest maturity is selected as a benchmark. Therefore, the chosen benchmark is not necessarily the same as the benchmark for the maturity band of the bond. If the time to maturity distance of a bond to its two neighboring benchmarks is exactly the same, then the benchmark bond with the closer coupon is chosen. If the coupon distance of the two neighbouring bonds is also exactly the same, then the younger of the two benchmark bonds is chosen.

Index history

The history start date for each index is included in the table in *Data publication and access*. All indices have a base value of 100 on that date.

Settlement conventions

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

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.

Publication of the Index

The iBoxx EUR Corporates PAB & CTB Indices are calculated as end-of-day indices and distributed once daily after market close.

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

Closing index values and key statistics are published at the end of each calculation day in the *Indices* section of the website for registered users.

Data publication and access

The table below summarizes the publication of iBoxx EUR Corporates PAB & CTB Indices 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: 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
Weekly	Preview components	FTP Server / website
T-3 and T-2	Preview components	FTP Server / website
Monthly	End of month components	FTP Server / website

The index identifiers for the publication channels are:

Index name	Version	SEDOL	ISIN	BBG	RIC	Index history start date
iBoxx EUR Corporates PAB Index	TRI	BT971H8	GB00BT971H88	IBXXEUPT	.IBXXEUPT	January 31, 2019
iBoxx EUR Corporates PAB Index	CPI	BT971G7	GB00BT971G71	IBXXEUPP	.IBXXEUPP	January 31, 2019
iBoxx EUR Corporates CTB Index	TRI	BT971F6	GB00BT971F64	IBXXEUCT	.IBXXEUCT	January 31, 2019
iBoxx EUR Corporates CTB Index	CPI	BT971D4	GB00BT971D41	IBXXEUCP	.IBXXEUCP	January 31, 2019

Footnotes

Footnotes

1. Pursuant to Articles 19(a)(2) and 19(b)(1) of Regulation (EU) 2019/2089, Commission Delegated Regulation (EU) 2020/1818 lays down the minimum standards for EU CTBs and EU PABs <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R1818>.
2. UNFCCC. (2015). The Paris Agreement: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.
3. Financial Stability Board's Task Force on Climate-related Financial Disclosures' (TCFD). (2017). Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, available at <https://www.fsb-tcfd.org/wpcontent/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf>
4. A climate scenario of 1.5°C above preindustrial levels has been deemed important by the IPCC: Masson-Delmotte, V., Zhai, P., Pörtner, H. O., Roberts, D., Skea, J., Shukla, P. R. Waterfield, T. (2018). Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C. IPCC, available at <https://www.ipcc.ch/sr15/>. 2020/1818 lays down the minimum standards for EU CTBs and EU PABs <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R1818>. Recommendations of the Task Force on Climate-related Financial Disclosures, available at <https://www.fsb-tcfd.org/wpcontent/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf>

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](#).

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.

Changes to the indices

December 1, 2025	<ul style="list-style-type: none">• The index names are changing:<ul style="list-style-type: none">◦ From iBoxx EUR Corporates Paris-Aligned Index to iBoxx EUR Corporates PAB Index◦ From iBoxx EUR Corporates Climate Transition Index to iBoxx EUR Corporates CTB Index
May 15, 2025	<ul style="list-style-type: none">• iBoxx EUR Corporates Paris-Aligned Index launch• iBoxx EUR Corporates Climate Transition Index launch

Related Indices

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

iBoxx EUR Corporates PAB Indices

Underlying Index

iBoxx EUR Corporates Paris-Aligned Index

Index Identifiers

Index Name	Version	ISIN	BBG Ticker	RIC Ticker
iBoxx EUR Corporates PAB Index - Financial Senior A 1-5Y	CPI	GB00BT978X32	IBXXEPS7	.IBXXEPS7
	TRI	GB00BT978Y49	IBXXEPS8	.IBXXEPS8
iBoxx EUR Corporates PAB Index - Financial Senior A 5-10Y	CPI	GB00BT978V18	IBXXEPS5	.IBXXEPS5
	TRI	GB00BT978W25	IBXXEPS6	.IBXXEPS6
iBoxx EUR Corporates PAB Index - Financial Senior AA 1-5Y	CPI	GB00BT978S88	IBXXEPF7	.IBXXEPF7
	TRI	GB00BT978T95	IBXXEPF8	.IBXXEPF8
iBoxx EUR Corporates PAB Index - Financial Senior AA 5-10Y	CPI	GB00BT978Q64	IBXXEPF5	.IBXXEPF5
	TRI	GB00BT978R71	IBXXEPF6	.IBXXEPF6
iBoxx EUR Corporates PAB Index - Financials Senior BBB 1-5Y	CPI	GB00BT978N34	IBXXEPF3	.IBXXEPF3
	TRI	GB00BT978P57	IBXXEPF4	.IBXXEPF4
iBoxx EUR Corporates PAB Index - Financials Senior BBB 5-10Y	CPI	GB00BT978L10	IBXXEPF1	.IBXXEPF1
	TRI	GB00BT978M27	IBXXEPF2	.IBXXEPF2
iBoxx EUR Corporates PAB Index - Non-Financials Senior A 1-5Y	CPI	GB00BT978J97	IBXXEPS3	.IBXXEPS3
	TRI	GB00BT978K03	IBXXEPS4	.IBXXEPS4
iBoxx EUR Corporates PAB Index - Non-Financials Senior A 5-10Y	CPI	GB00BT978G66	IBXXEPS1	.IBXXEPS1
	TRI	GB00BT978H73	IBXXEPS2	.IBXXEPS2
iBoxx EUR Corporates PAB Index - Non-Financials Senior AA 1-5Y	CPI	GB00BT978D36	IBXXEPN7	.IBXXEPN7
	TRI	GB00BT978F59	IBXXEPN8	.IBXXEPN8
iBoxx EUR Corporates PAB Index - Non-Financials Senior AA 5-10Y	CPI	GB00BT978B12	IBXXEPN5	.IBXXEPN5
	TRI	GB00BT978C29	IBXXEPN6	.IBXXEPN6
iBoxx EUR Corporates PAB Index - Non-Financials Senior BBB 1-5Y	CPI	GB00BT975T80	IBXXEPN3	.IBXXEPN3
	TRI	GB00BT975V03	IBXXEPN4	.IBXXEPN4
iBoxx EUR Corporates PAB Index - Non-Financials Senior BBB 5-10Y	CPI	GB00BSF2XF27	IBXXEPN1	.IBXXEPN1
	TRI	GB00BSF2XG34	IBXXEPN2	.IBXXEPN2

Summary of Key ESG Factors

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY*			
1.	Name of the Benchmark Administrator.	S&P Dow Jones Indices Limited ('S&P DJI Ltd')	
2.	Type of benchmark or family of benchmarks. **	Fixed Income - Corporate and Sovereign	
3.	Name of the benchmark or family of benchmarks	iBoxx EUR Paris-Aligned & Climate Transition (PACT) Indices	
4.	Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?	Yes	
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 into account ESG factors, please refer to the S&P Dow Jones Indices Limited Benchmark Register .	
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		
	ESG Factors***	S&P DJI ESG Factor	Comments
6.a List of Environmental factors considered	<i>Regulation (EU) 2020/1818. Article 12(1)(d): companies that derive 1 % or more of their revenues from exploration, mining, extraction, distribution or refining of hard coal and lignite.</i>	Fossil Fuel operations and Power Generation: <i>Coal Exploration or Processing</i>	Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the ' <i>Fossil Fuel operations and Power Generation</i> ' subsection, of the methodology.
	<i>Regulation (EU) 2020/1818. Article 12(1)(e): companies that derive 10 % or more of their revenues from the exploration, extraction, distribution or refining of oil fuels.</i>	Fossil Fuel Operations and Power Generation: <i>Oil Exploration or Processing</i>	Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the ' <i>Fossil Fuel operations and Power Generation</i> ' subsection, of the methodology.
	<i>Regulation (EU) 2020/1818. Article 12(1)(f): companies that derive 50 % or more of their revenues from the exploration, extraction, manufacturing or distribution of gaseous fuels.</i>	Fossil Fuel Operations and Power Generation: <i>Natural Gas Exploration or Processing</i>	Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the ' <i>Fossil Fuel operations and Power Generation</i> ' subsection, of the methodology.
	<i>Regulation (EU) 2020/1818. Article 12(1)(g): companies that derive 50 % or more of their revenues from electricity generation with a GHG intensity of more than 100 g CO2 e/kWh.</i>	Fossil Fuel Operations and Power Generation: <i>Power Generation</i>	Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the ' <i>Fossil Fuel operations and Power Generation</i> ' subsection, of the methodology.
	N/A	Sustainalytics Product Involvement	Exclusion. For more information, please refer to

		Screening: <i>Thermal Coal</i>	the 'Bond Selection Rules' section, the ' <i>Green Bonds</i> ' subsection, of the methodology.
	N/A	Sustainalytics Product Involvement Screening: <i>Oil Sands</i>	Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the ' <i>Green Bonds</i> ' subsection, of the methodology.
	N/A	Sustainalytics Product Involvement Screening: <i>Shale Energy</i>	Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the ' <i>Green Bonds</i> ' subsection, of the methodology.
	N/A	Sustainalytics Product Involvement Screening: <i>Arctic Oil & Gas Exploration</i>	Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the ' <i>Green Bonds</i> ' subsection, of the methodology.
	GHG intensity of the benchmark	Absolute Carbon Emissions (ACE*) Target; 7% Decarbonization Trajectory ACE* Target	Weighting. For more information, please refer to the 'Index Calculation' section, the 'Transition Risk Constraints' sub-section, of the methodology.
	N/A	Fossil Fuel Reserves (FFR) Intensity Constraint	Weighting. For more information, please refer to the 'Index Calculation' section, the 'Transition Risk Constraints' sub-section, of the methodology.
	Percentage of green bonds in the benchmark portfolio	Green Bond Improvement	Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the ' <i>Green Bonds</i> ' subsection, of the methodology.
	<i>Regulation (EU) 2020/1818. Article 12(2): companies that are found or estimated by them or by external data providers to significantly harm one or more of the environmental objectives referred to in Article 9 of Regulation (EU) 2020/852 of the European Parliament and of the Council (8), in accordance with the rules on estimations laid down in Article 13(2) of this Regulation.</i>	Sustainalytics Controversy Score	Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the ' <i>Controversies</i> ' subsection, of the methodology.
6.b List of Social factors considered.	Number of benchmark constituents subject to social violations (absolute number and relative divided by all benchmark constituents), as referred to in international treaties and conventions, United Nations principles or, where applicable, national law. <i>Regulation (EU) 2020/1818.</i>	Sustainalytics Global Standards Screening: ' <i>Non-compliant</i> '	Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the ' <i>UNGC/GSS screening</i> ' subsection, of the methodology.

	<p><i>Article 12(1)(c): companies that benchmark administrators find in violation of the United Nations Global Compact (UNGC) principles or the Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises</i></p>		
	<p>International treaties and conventions, United Nations principles or, where applicable, national law used in order to determine what constitutes a 'controversial weapon'.</p>	<p>Sustainalytics Product Involvement Screening: <i>Controversial Weapons</i></p>	<p>Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the '<i>Product Involvement</i>' sub-section, of the methodology.</p>
	<p>Weighted average percentage of benchmark constituents in the controversial weapons sector. <i>Regulation (EU) 2020/1818. Article 12(1)(a): companies involved in any activities related to controversial weapons</i></p>	<p>Sustainalytics Product Involvement Screening: <i>Controversial Weapons</i></p>	<p>Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the '<i>Product Involvement</i>' sub-section, of the methodology.</p>
	<p>Weighted average percentage of benchmark constituents in the tobacco sector. <i>Regulation (EU) 2020/1818. Article 12(1)(b): companies involved in the cultivation and production of tobacco.</i></p>	<p>Sustainalytics Product Involvement Screening: <i>Tobacco</i></p>	<p>Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the '<i>Product Involvement</i>' sub-section, of the methodology.</p>
	N/A	<p>Sustainalytics Product Involvement Screening: <i>Small Arms</i></p>	<p>Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the '<i>Product Involvement</i>' sub-section, of the methodology.</p>
	N/A	<p>Sustainalytics Product Involvement Screening: <i>Military Contracting</i></p>	<p>Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the '<i>Product Involvement</i>' sub-section, of the methodology.</p>
	N/A	<p>Sustainalytics Controversy Score</p>	<p>Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the '<i>Controversies</i>' subsection, of the methodology.</p>
6.c List of Governance factors considered	N/A	<p>Sustainalytics Controversy Score</p>	<p>Exclusion. For more information, please refer to the 'Bond Selection Rules' section, the '<i>Controversies</i>' subsection, of the methodology.</p>
7.	Data and standards used		
7.a	Data sources, verification	The datasets are defined as either:	

	and quality of data	<ul style="list-style-type: none"> Reported: All data in the dataset are provided as disclosed by companies, or as stated in the public domain. Modeled: All data are derived using a proprietary modelling process with only proxies used in the creation of the dataset. Reported and Modeled: The dataset is either a mix of reported and Modeled data or is derived by the vendor using reported data/information in a proprietary scoring or determination process. <p>The index methodology uses the following ESG datasets.</p>
7.b	Data Source	Dataset
	S&P Trucost Limited (a part of S&P Global) (external data source)	<p>This methodology uses several datasets provided by S&P Trucost Limited:</p> <ul style="list-style-type: none"> Physical risk scores dataset (Reported and Modeled) Greenhouse gas emissions and emissions disclosure dataset (Reported and Modeled) Green-to-brown share dataset (Reported and Modeled) • Trucost sector revenues dataset (Reported and Modeled) <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>
	Sustainalytics (external data source)	<p>This methodology uses the following datasets provided by Sustainalytics, a global leader in sustainability research and analytics: • Product Involvement (Reported and Modeled)</p> <ul style="list-style-type: none"> Global Standards Screening (Reported and Modeled) Controversy Ratings (Reported and Modeled) <p>For more information, please refer to www.sustainalytics.com.</p>
	Other data sources	<p>Data is also sourced externally from Climate Bonds Initiative (“CBI”), Environmental Finance and S&P Market Intelligence Reference Data, supplemented with professional expertise and bond prospectuses.</p>
7.c	Verification and quality of data.	<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>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:</p> <ol style="list-style-type: none"> 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

	<p>System (NAICS), but goes into greater granularity in some areas, such as power generating utilities.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>For further information, please refer to: https://support.marketplace.spglobal.com/en/datasets/alternative/trucost_environmental_trucost_environmental_data_methodology_guide.pdf</p> <p>Sustainalytics Datasets:</p> <p>1. Quality Approach to Controversies Company Research:</p> <ul style="list-style-type: none"> • Continuous improvement and maintenance of quality and research standards; Continuous refinement of methodologies and guidance to adjust to emerging societal ESG developments; • Continuous screening and curation of news and NGO sources; Screening of corporate reporting and web disclosure; Senior sector lead quality reviews of controversy assessments before publication. • For high scoring controversy ratings (Categories 4 and 5), companies are contacted to verify allegations that are relevant in the controversy ratings methodology and their response is taken into consideration, and whenever relevant included; proposals for assessment changes are reviewed by an internal oversight body. If the proposal is approved, a written indicator assessment is drafted according to Sustainalytics Controversy guidelines. Before such assessment is published, a quality and editorial review is conducted. <p>Data and deliverable management: Quality and reliability of Covered Company and identifier data through automated quality assurance; Quality and reliability of Sustainalytics proprietary (i.e. research) data through automated quality assurance, prior to publication; Senior sector lead quality reviews of controversy assessments before publication; Quality and reliability of biweekly client</p>
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		<p>deliverables through end-of-gate quality assurance processes (automated and manual); Monitoring and investigating ESG score fluctuations and their root causes using manual and automated tools.</p> <p>Update cycle: Continuous daily news monitoring is conducted as incidents occur and feed into updates of controversy indicators; Quarterly reviews of high scoring cases regardless the occurrence of incidents; Three year back controversy screen for entities added to the research universe after every quarterly rebalance; Annual review of all company's controversy ratings when the overall Risk Rating of a company is annually updated; Analyst discretion to react to relevant developments at any time, regardless the above scheduled reviews.</p> <p>2. Quality Approach to Global Standards Screening (GSS) Company Research: Continuous improvement and maintenance of quality and research standards; Companies are contacted to verify allegations that are relevant in the Global Standards Screening methodology and their response is taken into consideration, and whenever relevant included; Quality reviews of ESG assessments before publication. For the Global Standards Screening, proposals for assessment changes are reviewed by an internal oversight body. If the proposal is approved, a written report is drafted according to the GSS guidelines. Before a Watchlist or Non Compliant status for an issue is published, a quality and editorial review is conducted on the report and the sources used therein.</p> <p>3. Data and deliverable management: Quality and reliability of Covered Company and identifier data through automated quality assurance; Quality and reliability of Sustainalytics 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 custom client deliverables through end-of-gate quality assurance processes (automated and manual); Monitoring and investigating ESG score fluctuations and their root causes using automated tools.</p> <p>Update cycle:</p> <ul style="list-style-type: none"> • Continuous monitoring is conducted as incidents occur and feed into updates of Global Standards Screening reports • Quarterly updates to Global Standards Screening reports • New companies added to the universe as a result of rebalancing are researched and updated in client systems quarterly • Corporate actions are processed in client systems on a quarterly basis in order to capture any involvement changes arising from mergers, acquisitions or other corporate actions. <p>4. Quality Approach to Product Involvement Company Research: Continuous improvement and maintenance of quality and research standards; All Product Involvement research is reviewed by senior analysts. The review comprises checking the accuracy of the involvement analysis by studying the original source as well as consistency with the research methodology and framework; Final validation of the research before publication is done by the Research Manager. Assessment changes are additionally reviewed by an internal oversight body.</p> <p>Data and deliverable management: Quality and reliability of Covered Company and identifier data through automated quality assurance; Quality and reliability of Sustainalytics</p>
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<p>7.d</p>	<p>Reference standards</p>	<p>GHG Emissions data is sourced externally from S&P Global Trucost. Trucost uses the following standards:</p> <ul style="list-style-type: none"> • Scopes 1 and 2: the GHG Protocol Corporate Standard. • Scope 3 (upstream & downstream): The Corporate Value Chain Standard, which is a supplement to the GHG Protocol specific to Scope 3. <p>S&P DJI uses international sustainability disclosure frameworks such as, SASB, GRI, UN Global Compact and the recommendations of the Financial Stability Board’s Task Force for Climate-related Financial Disclosures as published in the 2017 Final Report.</p> <p>The methodology behind Sustainalytics Global Standards Screening is based on the following international standards:</p> <ul style="list-style-type: none"> • UN Global Compact Principles • OECD • World Governance Indicators • Industry-specific standards or initiatives. <p>Examples are the Round Table on Sustainable Palm Oil, the standards for Systemically Important Banks, local Corporate Governance codes, and many others. Said industry-specific standards are incorporated in assessments of companies’ management of ESG issues in ESG Risk Ratings</p> <p>Sustainalytics Datasets: Controversies Research tracks incidents through various media and NGO sources and is not a comprehensive screening product. The following standards are included in the framework for analysis for the Controversies research, however, reference to the exact standards or norms breaches is not described, given that Sustainalytics impact the reported allegations may have for businesses and stakeholders</p> <ul style="list-style-type: none"> • UN Global Compact Principles • OECD

		<ul style="list-style-type: none"> Industry specific standards, initiatives or principles as further elaborated in underlying conventions and authoritative guidelines ICMA Green Bond Principles (GBP), Social Bond Principles (SBP) and Sustainability Bond Guidelines (SBG).
Appendix latest update:		October 2025 - Addition of regulatory references to ESG Factors
Appendix updates:		N/A
Appendix first publication:		May 2025

* 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].

** The “type of benchmark” refers to the type of ‘underlying asset’ as selected from the list provided in Annex II in the 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.

*** ‘ESG factors’ means the environmental, social and governance factors (i) referred to 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; and (ii) additional ESG factors taken into account by the methodology. Where relevant this column also includes cross references to the mandatory exclusions under Article 12 Regulation (EU) 2020/1818.

Disclaimer

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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.

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