

**S&P Dow Jones  
Indices**

A Division of **S&P Global**

# **Markit iBoxx EUR Liquid Diversified Indices Guide**

***January 2024***

# Table of Contents

1) The Markit iBoxx EUR Liquid Diversified indices	5
<b>1.1) Index family structure</b>	<b>5</b>
2) Markit iBoxx EUR Liquid Sovereign Diversified Indices Rules	6
<b>2.1) Bond selection rules for Markit iBoxx EUR Liquid Sovereign Diversified Indices</b>	<b>6</b>
2.1.1) Bond type	6
2.1.2) Credit rating	6
2.1.3) Time to maturity	7
2.1.4) Amount outstanding	7
2.1.5) Minimum run	7
<b>2.2) Index size, Bond ordering and Bond selection</b>	<b>7</b>
2.2.1) Index size	7
2.2.2) Ranking criteria	7
2.2.3) Limit on number of bonds from any issuer in an index	8
<b>2.3) Maturity bands</b>	<b>8</b>
3) Markit iBoxx EUR Liquid Germany Covered Diversified Index Rules	9
<b>3.1) Bond selection rules for Markit iBoxx EUR Liquid Germany Covered Diversified Index</b>	<b>9</b>
3.1.1) Bond type	9
3.1.2) Age	9
3.1.3) Time to maturity	9
3.1.4) Issuer rating	9
3.1.5) Amount outstanding	10
<b>3.2) Index size, bond ordering and bond selection</b>	<b>10</b>
3.2.1) Index size and capping procedure	10
3.2.2) Ranking criteria	10
3.2.3) Limit on number of bonds from any issuer in an index	11
4) Markit iBoxx EUR Liquid Corporates Diversified Index Rules	12
<b>4.1) Bond selection rules for Markit iBoxx EUR Liquid Corporates Diversified Index</b>	<b>12</b>
4.1.1) Bond type	12
4.1.2) Age	13

4.1.3) Time to maturity	13
4.1.4) Bond rating	13
4.1.5) Issuer origin	13
4.1.6) Issuer size	14
4.1.7) Amount outstanding	14
<b>4.2) Index size, bond ordering and bond selection</b>	<b>14</b>
4.2.1) Index size and capping procedure	14
4.2.2) Ranking criteria	14
4.2.3) Limit on number of bonds from any issuer in an index	15
5) Markit iBoxx EUR Liquid Non-Financials Diversified Index Rules	16
<b>5.1) Bond selection rules for Markit iBoxx EUR Liquid Non-Financials Diversified</b>	
<b>Index</b>	<b>16</b>
5.1.1) Bond type	16
5.1.2) Issuer type	16
5.1.3) Age	16
5.1.4) Time to maturity	16
5.1.5) Bond rating	17
5.1.6) Issuer origin	17
5.1.7) Issuer size	17
5.1.8) Amount outstanding	17
<b>5.2) Index size, bond ordering and bond selection</b>	<b>17</b>
5.2.1) Index size and capping procedure	17
5.2.2) Ranking criteria	17
5.2.3) Limit on number of bonds from any issuer in an index	18
6) Bond classification	19
<b>6.1) Sovereigns</b>	<b>19</b>
<b>6.2) Corporates</b>	<b>19</b>
<b>6.3) Covered bonds</b>	<b>21</b>
7) Index calculation	22
<b>7.1) Static data</b>	<b>22</b>
<b>7.2) Bond prices</b>	<b>22</b>
<b>7.3) Rebalancing process</b>	<b>22</b>
7.3.1) Rebalancing procedure	23
7.3.2) Weekly preview	23

<b>7.4) Index data</b>	<b>23</b>
<b>7.5) Index calculus</b>	<b>23</b>
<b>7.6) Treatment of the special intra-month events</b>	<b>23</b>
7.6.1) Index adjustments between scheduled rebalancings	24
7.6.2) Monthly bond substitution between scheduled rebalancings	24
7.6.3) Monthly cash reinvestment between scheduled rebalancing dates	25
<b>7.7) Determination of benchmarks</b>	<b>25</b>
<b>7.8) Index history</b>	<b>26</b>
<b>7.9) Settlement conventions</b>	<b>26</b>
<b>7.10) Calendar</b>	<b>26</b>
<b>7.11) Publication of the Index</b>	<b>26</b>
<b>7.12) Data publication and access</b>	<b>27</b>
<b>7.13) Annual index review</b>	<b>27</b>
8) Governance and regulatory compliance	28
9) Changes to the Markit iBoxx EUR Liquid Diversified indices	29
10) Further information	31
A) ESG Disclosures	32
Disclaimer	33

# 1) The Markit iBoxx EUR Liquid Diversified indices

The Markit iBoxx EUR Liquid Diversified indices consist of a subset of the bonds in the Markit iBoxx EUR index family of benchmark indices. The liquid diversified indices have been designed to provide a suitable basis for OTC, exchange-traded derivatives and Exchange Traded Funds (ETFs).

Broad benchmark indices generally consist of a large number of bonds, especially within the corporate sector. Portfolio managers tracking an index from the broad benchmark Markit iBoxx EUR index family may therefore incur substantial costs in attempting to replicate or hedge the individual bonds in the portfolio. Furthermore, bonds with special features or smaller amounts outstanding usually suffer from illiquid trading, resulting in relatively large bid-ask spreads.

The Markit iBoxx EUR Liquid Diversified indices are intended to address these deficiencies by limiting the number of bonds per index and excluding special bond types, thus reducing tracking and hedging costs.

All iBoxx indices are priced based on multiple data inputs. The Markit iBoxx EUR Index family uses multi-source prices as described in the document *iBoxx Pricing Methodology* publicly available on <https://www.spglobal.com/spdji/en/> under *Methodology*.

This document covers the index rules and calculation methodology.

## 1.1) Index family structure

The Markit iBoxx EUR Liquid Diversified index family is comprised of euro-denominated debt issued by Eurozone issuers. The index family is comprised of four different index sub-groups: sovereign diversified, Germany covered diversified, corporates diversified, and non-financials diversified.

The Markit iBoxx Sovereign Diversified index covers various maturity bucket indices.

The table below provides an overview of the index family structure:

Markit iBoxx EUR Liquid Diversified Indices			
Markit iBoxx EUR Liquid Sovereigns Diversified	Markit iBoxx EUR Liquid Diversified		
Sovereigns maturity indices (3m-1, 1-3, 3-5, 5-7, 7-10, 1-10, 10+, 10-15, 15+, 25+)	Markit iBoxx EUR Liquid Germany Covered Diversified	Markit iBoxx EUR Liquid Corporates Diversified	Markit iBoxx EUR Liquid Non-financials Diversified

## 2) Markit iBoxx EUR Liquid Sovereign Diversified Indices Rules

With the exception of the Markit iBoxx EUR Liquid Sovereigns Diversified 3 months – 1 year index, the indices are based exclusively on sovereign bonds contained in the universe of the Markit iBoxx EUR benchmark indices. However, unlike the benchmark indices, the number of bonds in each liquid index is limited. To ensure that only suitable bonds enter the liquid indices, further selection criteria have been added. In addition to the selection criteria used to define the eligible bond universe, ranking criteria have been defined to determine which bonds enter the Markit iBoxx EUR Liquid Sovereign Diversified indices.

### 2.1) Bond selection rules for Markit iBoxx EUR Liquid Sovereign Diversified Indices

The following selection criteria are designed to reduce the number of bonds for the Markit iBoxx EUR Liquid Sovereign Diversified indices:

- Bond type
- Credit rating
- Time to maturity
- Amount outstanding

#### 2.1.1) Bond type

The Markit iBoxx EUR Liquid Sovereign Diversified indices include only Euro and legacy currency denominated bullet fixed coupon bonds (plain vanilla bonds). Sinking funds and amortizing bonds are excluded from the indices. T-Bills are only eligible for the Markit iBoxx EUR Liquid Sovereign Diversified 3 months – 1 year index.

#### 2.1.2) Credit rating

All bonds in the Markit iBoxx EUR Liquid Diversified 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 Markit iBoxx EUR Liquid Diversified Indices.

If a bond is rated by more than one of the above agencies, then the iBoxx rating is the average of the provided ratings. The rating is consolidated to the nearest rating grade. Rating notches are not used. For more information on how the average rating is determined, please refer to the *iBoxx Rating Methodology* document available at <https://www.spglobal.com/spdji/en/> under *Methodology*.

Prior to 01 January 2008, the lowest rating was used as the Markit iBoxx Rating.

### **2.1.3) Time to maturity**

To qualify for the Markit iBoxx EUR Liquid Sovereign Diversified indices all eligible bonds must have a remaining time to maturity of at least 1.5 years measured from the respective rebalancing date to the maturity date. The time to maturity for substitutes is measured from the substitution date to the maturity date of the bond. Bonds in the liquid indices with a remaining time to maturity of less than 1.5 years will be excluded from the indices at the next rebalancing.

For the Markit iBoxx EUR Liquid Sovereign Diversified 3 months – 1 year index, the minimum time to maturity is 6 months for new bonds and 3 months for bonds already included in the index.

### **2.1.4) Amount outstanding**

All bonds must have a specific minimum amount outstanding of EUR 2 billion in order to be eligible for the indices. The amount outstanding of each bond is used to calculate its index weight. The indices are capitalization-weighted.

### **2.1.5) Minimum run**

Bonds in the Markit iBoxx EUR Liquid Sovereigns Diversified 3 months – 1 year Index need to stay in the index for at least six months. They are not replaced by higher ranked bonds unless they have already completed the minimum run period. There is no minimum run for the other Markit iBoxx EUR Liquid Sovereign Diversified indices.

## **2.2) Index size, Bond ordering and Bond selection**

### **2.2.1) Index size**

To facilitate the replication of the indices, the maximum number of bonds in each index is limited. For the Markit iBoxx EUR Liquid Sovereign Diversified 1–25 years index, the maximum number of bonds is 80, for all other indices, the maximum number of bonds is 25. In the event that the number of eligible bonds is less than or equal to the maximum number, all available bonds will be included in the index.

The weight of a country in an index is capped at 19%. If the weight of a country is capped, then the weighting of each bond from the country is reduced according to its relative weight.

### **2.2.2) Ranking criteria**

Should more than the maximum number of bonds be available for an index, ordering criteria are applied in order to rank the eligible bonds.

The following five criteria are applied:

1. Time since first settlement date between 0 and 4 years
2. Higher amount outstanding
3. More recent first settlement date
4. Longer time to maturity
5. Lower coupon

These criteria are applied to each pair of bonds in the order stated above until a difference can be established (i.e. if two bonds have a time since first settlement of between 0-4 years and have identical

amounts outstanding, but one has a more recent first settlement date, then criteria 1 to 3 are applied, but 4 and 5 are not). With the help of the ranking criteria, a bond hierarchy can be defined, with the bond that has the highest amount outstanding at the top of the hierarchy.

If there is still a tie after these criteria are applied, the bond with higher ISIN is ranked first.

### **2.2.3) Limit on number of bonds from any issuer in an index**

The number of bonds from an issuing country that may enter an index is limited to 4 bonds.

### **2.3) Maturity bands**

The sovereign bonds are categorized into maturity buckets, which are then used to calculate maturity indices. To take into account the current issuance pattern by Eurozone governments, the maturity bands for the indices are defined as:

- 3 months – 1 year
- 1-3 years
- 3-5 years
- 5-7 years
- 7-10 years
- 1-10 years
- 1-25 years
- 10-15 years
- 10+ years
- 15+ years
- 25+ years

For the 1-3, 3-5, 5-7, 7-10, 1-10 and 1-25 years indices, the index contains bonds with a maturity of 1.5-3.5 years, 3.5-5.5 years etc. at each quarterly rebalancing to account for slight divergences from the issuance conventions in the countries covered by the indices.



# 3) Markit iBoxx EUR Liquid Germany Covered Diversified Index Rules

The index is solely based on bonds included in the Markit iBoxx EUR Germany Covered index. To ensure that only suitable bonds enter the liquid indices, further selection criteria have been added. In addition to the selection criteria used to define the eligible bond universe, ranking criteria have been defined to determine which bonds enter the Markit iBoxx EUR Liquid Germany Covered Diversified Index.

## 3.1) Bond selection rules for Markit iBoxx EUR Liquid Germany Covered Diversified Index

The following selection criteria are designed to reduce the number of bonds for the Markit iBoxx EUR Liquid Germany Covered Diversified indices:

- Bond type
- Age
- Time to maturity
- Issuer rating
- Amount outstanding

### 3.1.1) Bond type

The Markit iBoxx EUR Liquid Germany Covered Diversified index includes only Euro and legacy currency denominated bullet fixed coupon bonds (plain vanilla bonds). Sinking funds and amortizing bonds are excluded from the index.

### 3.1.2) Age

All eligible bonds must have an age of no more than 4 years. The age is measured from the first settlement date of the bond to the rebalancing date. Bonds in the liquid indices with an age of more than 4 years will be excluded from the indices at the next rebalancing.

### 3.1.3) Time to maturity

To qualify for the Markit iBoxx EUR Liquid Germany Covered Diversified index all eligible bonds must have a remaining time to maturity of at least 1.5 years measured from the respective rebalancing date to the maturity date. The maximum time to maturity is 10 years. The time to maturity for substitutes is measured from the substitution date to the maturity date of the bond. Bonds in the liquid indices with a remaining time to maturity of less than 1.5 years will be excluded from the indices at the next rebalancing.

### 3.1.4) Issuer rating

In addition to the rating criteria for the Markit iBoxx EUR benchmark indices, the senior unsecured debt rating of the covered bond issuer needs to be BBB or higher. Bonds from issuers rated BBB- or lower are not eligible for the index.

Ratings from the following three credit rating agencies are considered:

1. Fitch Ratings
2. Moody's Investor Service

### 3. S&P Global Ratings

If more than one agency provides a rating, the average rating is used.

#### 3.1.5) Amount outstanding

All bonds must have a specific minimum amount outstanding of EUR 500 million in order to be eligible for the indices. The amount outstanding of each bond is used to calculate its index weight. The index is capitalization-weighted.

### 3.2) Index size, bond ordering and bond selection

#### 3.2.1) Index size and capping procedure

To facilitate the replication of the indices, the maximum number of bonds is limited to 30. In the event that the number of eligible bonds is less than or equal to the maximum number, all available bonds will be included in the index.

The weight of an issuer in the index is capped at 15%. If an issuer has to be capped the weight of the smallest bond from the issuer is reduced successively. If as a result of the capping the weight of a bond is reduced to zero, the next eligible bond from a non-capped issuer is included in the index, and the capping is reapplied. The 15% issuer cap will be applied based on the first parent entity instead of the issuer level.

The weight of all BBB/BBB+ issuers is capped at 50% of the index. If the BBB/BBB+ segment has to be capped, the weight of the smallest bonds in the index is reduced successively. If as a result of the capping the weight of a bond is reduced to zero, the next eligible bond from a non-BBB/BBB+ issuer is included in the index, and the capping is reapplied. If necessary, the 15% issuer cap is reapplied after the capping of the BBB segment.

The preliminary capping is performed with the closing prices of the third last trading day of the month. A bond whose first settlement date is later than the third last trading day of the month is assumed to have a price of 100. The final membership list is determined based on the results of the preliminary capping.

The final capping is applied after the close of the last trading day of the month with the final closing prices of all bonds. If as a result of the final capping, the weight of a bond is reduced to zero, it is not replaced.

#### 3.2.2) Ranking criteria

Should more than the maximum number of bonds be available for an index, ordering criteria are applied in order to rank the eligible bonds. The following four criteria are applied to establish a bond hierarchy:

1. Higher amount outstanding
2. More recent first settlement date
3. Longer time to maturity
4. Lower coupon

These criteria are applied to each pair of bonds in the order stated above until a difference can be established (i.e. if two bonds have identical amounts outstanding and the same first settlement date but one has a longer time to maturity, then criteria 1 to 3 are applied, but 4 is not). With the help of the ranking criteria, a bond hierarchy can be defined, with the bond that has the highest amount outstanding at the top of the hierarchy.

If there is still a tie after these criteria are applied, the bond with the higher ISIN (ranked in alpha-numerical order) is selected.

### **3.2.3) Limit on number of bonds from any issuer in an index**

The number of bonds from an issuer that may enter an index is limited to 4 bonds.

## 4) Markit iBoxx EUR Liquid Corporates Diversified Index Rules

The index is solely based on bonds included in the Markit iBoxx EUR Corporates index. To ensure that only suitable bonds enter the liquid indices, further selection criteria have been added. In addition to the selection criteria used to define the eligible bond universe, ranking criteria have been defined to determine which bonds enter the Markit iBoxx EUR Liquid Corporates Diversified Index.

### 4.1) Bond selection rules for Markit iBoxx EUR Liquid Corporates Diversified Index

The following selection criteria are designed to reduce the number of bonds for the Markit iBoxx EUR Liquid Corporates Diversified indices:

- Bond type
- Age
- Time to maturity
- Bond rating
- Issuer origin
- Issuer size
- Amount outstanding

#### 4.1.1) Bond type

Only Euro and legacy currency denominated bonds whose cash flows can be determined in advance are eligible for the index.

Bonds with the following characteristics are included:

- Fixed coupon bonds (plain vanilla bonds)
- Zero coupon bonds
- 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
- 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 excluded:

- Floating Rate Notes
- T-Bills and other money market instruments
- Subordinated debt
- Optionally and mandatory convertible bonds from non-financial issuers
- Bonds cum or ex-warrant
- Sinking funds and amortizing bonds
- Other bonds with American call options, and undated bonds
- Collateralized Debt Obligations (CDOs) and bonds collateralized by CDOs

- Bonds with differences between accrual and coupon payment periods and monthly-paying bonds
- Event-driven bonds with step-up and step-down coupons, such as rating- or tax-driven bonds
- Step-up bonds, step-up callable bonds with European options
- Private placements
- Retail bonds

For retail bonds and private placements, publicly available information is not always conclusive and the classification of a bond as a retail bond or 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 placement and retail bonds. The list is published on <https://www.spglobal.com/spdji/en/> for future reference and to ensure decisions' consistency.

In instances where a new bond type is not specifically excluded or included according to the published index rules, S&P DJI will analyse the features of such securities in line with the principles set out in section 4.1 of this guide. S&P DJI may consult the specific Index Committees. Any decision as to the eligibility or ineligibility of a new bond type will be published and the index rules will be updated accordingly.

#### **4.1.2) Age**

All eligible bonds must have an age of no more than 3 years. The age is measured from the first settlement date of the bond to the rebalancing date. Bonds in the liquid indices with an age of more than 3 years will be excluded from the indices at the next rebalancing.

#### **4.1.3) Time to maturity**

To qualify for the Markit iBoxx EUR Liquid Corporates Diversified index all eligible bonds must have a remaining time to maturity of at least 1.5 years measured from the respective rebalancing date to the maturity date. The maximum time to maturity is 10 years. The time to maturity for substitutes is measured from the substitution date to the maturity date of the bond. Bonds in the liquid indices with a remaining time to maturity of less than 1.5 years will be excluded from the indices at the next rebalancing.

#### **4.1.4) Bond rating**

The rating of a non-financial bond must be BBB- or higher. The rating of a financial bond must be A- or higher. The rating of the Markit iBoxx EUR benchmark indices is used.

#### **4.1.5) Issuer origin**

Only issuers which are headquartered in a Euro country or in Denmark, Norway, Sweden, Switzerland or the United Kingdom are eligible for inclusion. In addition, only bonds issued in a member country of the Euro or in Denmark, Norway, Sweden, Switzerland or the United Kingdom are eligible for inclusion.

#### **4.1.6) Issuer size**

The minimum outstanding debt for Non-Financials is EUR 5.0 billion. The amounts outstanding of all senior bonds in the Markit iBoxx EUR benchmark are counted regardless of the country of issue of the bond.

There are no issuer size restrictions for Financials.

#### **4.1.7) Amount outstanding**

All financial bonds must have a specific minimum amount outstanding of EUR 1 billion in order to be eligible for the indices. The minimum amount outstanding for non-financials is EUR 500 million.

The amount outstanding of each bond is used to calculate its index weight. The index is capitalization-weighted.

### **4.2) Index size, bond ordering and bond selection**

#### **4.2.1) Index size and capping procedure**

To facilitate the replication of the indices, the maximum number of bonds is limited to 75. In the event that the number of eligible bonds is less than or equal to the maximum number, all available bonds will be included in the index.

The weight of an issuer in the index is capped at 4%. If an issuer has to be capped the weight of the smallest bond from the issuer is reduced successively. If as a result of the capping the weight of a bond is reduced to zero, the next eligible bond from a non-capped issuer is included in the index, and the capping is reapplied.

The preliminary capping is performed with the closing prices of the third last trading day of the month. A bond whose first settlement date is later than the third last trading day of the month is assumed to have a price of 100. The final membership list is determined based on the results of the preliminary capping.

The final capping is applied after the close of the last trading day of the month with the final closing prices of all bonds. If as a result of the final capping, the weight of a bond is reduced to zero, it is not replaced.

#### **4.2.2) Ranking criteria**

Should more than the maximum number of bonds be available for an index, ordering criteria are applied in order to rank the eligible bonds. The following four criteria are applied to establish a bond hierarchy:

1. Higher amount outstanding
2. More recent first settlement date
3. Longer time to maturity
4. Lower coupon

These criteria are applied to each pair of bonds in the order stated above until a difference can be established (i.e. if two bonds have identical amounts outstanding and the same first settlement date but one has a longer time to maturity, then criteria 1 to 3 are applied, but 4 is not). With the help of the ranking criteria, a bond hierarchy can be defined, with the bond that has the highest amount outstanding at the top of the hierarchy.

If there is still a tie after these criteria are applied, the bond with the higher ISIN (ranked in alpha-numerical order) is selected.

#### **4.2.3) Limit on number of bonds from any issuer in an index**

The number of bonds from an issuer that may enter an index is limited to 2 bonds.

# 5) Markit iBoxx EUR Liquid Non-Financials Diversified Index Rules

The index is solely based on bonds included in the Markit iBoxx EUR Corporates index. To ensure that only suitable bonds enter the liquid indices, further selection criteria have been added. In addition to the selection criteria used to define the eligible bond universe, ranking criteria have been defined to determine which bonds enter the Markit iBoxx EUR Liquid Non-Financials Diversified Index.

## 5.1) Bond selection rules for Markit iBoxx EUR Liquid Non-Financials Diversified Index

The following selection criteria are designed to reduce the number of bonds for the Markit iBoxx EUR Liquid Non-Financials Diversified index:

- Bond type
- Issuer type
- Age
- Time to maturity
- Bond rating
- Issuer origin
- Issuer size
- Amount outstanding

### 5.1.1) Bond type

The Markit iBoxx EUR Liquid Non-Financials Diversified index include only Euro and legacy currency denominated bullet fixed coupon bonds (plain vanilla bonds). Step-up coupon bonds are excluded as are sinking funds and amortizing bonds. Only senior debt is eligible for the indices.

### 5.1.2) Issuer type

Only bonds from non-financial issuers qualify.

### 5.1.3) Age

All eligible bonds must have an age of no more than 3 years. The age is measured from the first settlement date of the bond to the rebalancing date. Bonds in the liquid indices with an age of more than 3 years will be excluded from the indices at the next rebalancing.

### 5.1.4) Time to maturity

To qualify for the Markit iBoxx EUR Liquid Non-Financials Diversified index all eligible bonds must have a remaining time to maturity of at least 1.5 years measured from the respective rebalancing date to the maturity date. The maximum time to maturity is 10 years. The time to maturity for substitutes is measured from the substitution date to the maturity date of the bond. Bonds in the liquid indices with a remaining time to maturity of less than 1.5 years will be excluded from the indices at the next rebalancing.



### **5.1.5) Bond rating**

The rating of a non-financial bond must be BBB- or higher. The rating of the Markit iBoxx EUR benchmark indices is used.

### **5.1.6) Issuer origin**

Only issuers who are headquartered in a Euro country or in Denmark, Norway, Sweden, Switzerland or the United Kingdom are eligible for inclusion. In addition, only bonds issued in a member country of the Euro or in Denmark, Norway, Sweden, Switzerland or the United Kingdom are eligible for inclusion.

### **5.1.7) Issuer size**

The minimum outstanding debt of an issuer is EUR 3.0 billion. The amounts outstanding of all senior bonds in the Markit iBoxx EUR benchmark index are counted regardless of the country of issue of the bond.

### **5.1.8) Amount outstanding**

All bonds must have a specific minimum amount outstanding of EUR 750 million in order to be eligible for the indices. The amount outstanding of each bond is used to calculate its index weight. The indices are capitalization-weighted.

## **5.2) Index size, bond ordering and bond selection**

### **5.2.1) Index size and capping procedure**

To facilitate the replication of the indices, the maximum number of bonds is limited to 40. In the event that the number of eligible bonds is less than or equal to the maximum number, all available bonds will be included in the index.

The weight of an issuer in the index is capped at 4%. If an issuer has to be capped the weight of the smallest bond from the issuer is reduced successively. If as a result of the capping the weight of a bond is reduced to zero, the next eligible bond from a non-capped issuer is included in the index, and the capping is reapplied.

The preliminary capping is performed with the closing prices of the third last trading day of the month. A bond whose first settlement date is later than the third last trading day of the month is assumed to have a price of 100. The final membership list is determined based on the results of the preliminary capping.

The final capping is applied after the close of the last trading day of the month with the final closing prices of all bonds. If as a result of the final capping, the weight of a bond is reduced to zero, it is not replaced.

### **5.2.2) Ranking criteria**

Should more than the maximum number of bonds be available for an index, ordering criteria are applied in order to rank the eligible bonds. The following four criteria are applied to establish a bond hierarchy:

1. Higher amount outstanding
2. More recent first settlement date

3. Longer time to maturity
4. Lower coupon

These criteria are applied to each pair of bonds in the order stated above until a difference can be established (i.e. if two bonds have identical amounts outstanding and the same first settlement date but one has a longer time to maturity, then criteria 1 to 3 are applied, but 4 is not). With the help of the ranking criteria, a bond hierarchy can be defined, with the bond that has the highest amount outstanding at the top of the hierarchy.

If there is still a tie after these criteria are applied, the bond with the higher ISIN (ranked in alpha-numerical order) is selected.

There are 40 bonds selected from the list in descending rank with one bond per issuer selected first, and if less than 40 issuers qualify, a second bond per issuer is selected subsequently until 40 bonds have been selected.

### **5.2.3) Limit on number of bonds from any issuer in an index**

The number of bonds from an issuer that may enter an index is limited to 2 bonds.

## 6) 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 very clear due to the diversified business of the entity, decision will be made at S&P DJI's discretion. S&P DJI will assign the classification according to its evaluation of the business risk presented in the security prospectus and annual reports, if available. S&P DJI will also compare 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.

### 6.1) 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.

### 6.2) Corporates

Bonds issued by public or private corporations. Corporate bonds are further classified into Financials and Non-Financials bonds and then into their multiple-level economic sectors, according to the issuer's business scope. The category 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 shown in Table 1 below.

*Table 1: Overview of Markit iBoxx Corporates Sectors*

	Economic Sector	Market Sector	Market Sub-Sector
Financials	Core Financials	Banks	Banks
		Insurance	Life Insurance
			Nonlife Insurance
	Financial Services	Financial Services	Equity Investment Instruments
			General Financial
			Nonequity Investment Instruments
		Insurance-wrapped	*
	Real Estate	Real Estate	Real Estate Investment & Services
Real Estate Investment Trusts			
Non-Financials	Basic Materials	Basic Resources	Forestry & Paper
			Industrial Metals

	Economic Sector	Market Sector	Market Sub-Sector
			Mining
		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	Integrated Telecommunications
			Wireless Telecommunications
	Utilities	Utilities	Electricity
			Gas / Water & Multiutilities

### 6.3) 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

# 7) Index calculation

## 7.1) Static data

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

## 7.2) 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/>.

## 7.3) Rebalancing process

The indices are rebalanced every quarter at the end of January, April, July and October. The indices are rebalanced on the last calendar day of the month after the last index calculation. Rebalancing also takes place if the last day of the month falls on a non-business day.

Changes to amounts 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 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.

The rebalancing procedure for the Markit iBoxx EUR Liquid Diversified Indices is analogous to the rebalancing of the Markit iBoxx EUR Benchmark indices.

A preliminary membership list is published on the 6th calendar day of the month (moved to the next business day in case of holiday/weekend).

Four business days before the end of each month, another preliminary membership list is published on the FTP server.

Three business days before the end of each month, a membership list with final 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 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.

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.

### 7.3.1) Rebalancing procedure

In a first step the selection criteria are applied:

- Amounts outstanding are applied as of three business days before the rebalancing date
- A bond remains in its respective maturity bucket until the next rebalancing
- Only bonds with a first settlement date on or before the rebalancing date are included in the selection process

Once the eligible bond universe has been defined, the ranking criteria are employed to determine a distinct hierarchy of bonds in the universe.

Bonds enter the respective index according to their rank in the hierarchy (with the highest rank entering first) until the maximum number of bonds per index has been reached.

### 7.3.2) Weekly preview

In addition to the regular rebalancing, a preview list (including sector classification for new bonds) is published each Friday of the rebalancing month with predicted changes to the index constituents at the next rebalancing. The preview list includes the next month's index constituents and shows bonds joining or leaving the indices at the next rebalancing, based on information available on such Fridays.

The first weekly preview will be published on the Friday of the rebalancing month that is at least three business days after the preceding month-end.

### 7.4) Index data

The calculation of the indices is based on bid prices. New securities are included in the indices 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.

### 7.5) Index calculus

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

### 7.6) 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.

## 7.6.1) Index adjustments between scheduled rebalancings

### Coupon changes

While most index adjustments are made during the quarterly rebalancing procedure, coupon changes will be effective immediately and the indices are adjusted in the same way.

### Bonds no longer in benchmark index

Bonds may drop out of the Liquid index at the end of a month, because they have left the benchmark indices. In this case they are replaced by suitable substitutes, or the proceeds are invested in existing bonds.

### Cash investment

Cash from coupon payments and proceeds from bonds that could not be used to buy other suitable bonds is invested in the money market at the end of each month.

## 7.6.2) Monthly bond substitution between scheduled rebalancings

Bonds can leave the Markit iBoxx EUR Liquid Diversified Indices universe due to:

- Default of the issue or issuer
- Rating downgrade to sub-investment grade of the issue or issuer
- Reduction in the amount outstanding due to repurchases below threshold level
- Other reasons

Bonds dropping out of the benchmark index will also leave the liquid index at month-end. The procedures described below are applied only if a bond has left a liquid index between rebalancing dates.

### Substitution list

At the end of the month, the eligible bond universe for the coming month is compiled and published for all liquid indices in accordance with the selection and ranking criteria. These are applied to establish a hierarchy within the eligible bond universe. For each index, all bonds already in the index are eliminated from the hierarchy, resulting in a substitution list for each index.

In case of multiple substitutions, all substitutes and deleted bonds are ranked in order to assign one specific substitute to each deleted bond. Ranking criteria from section 2 are applied. The assignment is essential for the determination of the fictitious amount outstanding.

### Bond substitution

If the bonds are no longer in the Markit iBoxx EUR Corporates benchmark index, they will also leave the liquid indices. For each bond that has left, another bond will become a substitute and enter the index. The proceeds from the sale of a dropped bond are invested in its substitute. The substitute will have a fictitious amount outstanding:

$$O_{substitute} = \frac{(P_{dropped}^b + A_{dropped}) \cdot O_{dropped}}{P_{substitute}^a + A_{substitute}}$$

where:



$A_{dropped}$	Accrued interest of a dropped bond
$A_{substitute}$	Accrued interest of a substitute bond
$O_{dropped}$	Amount outstanding of a dropped bond
$O_{substitute}$	Fictitious amount outstanding of a substitute bond
$P_{substitute}^a$	Ask price of a substitute bond
$P_{dropped}^b$	Bid price of a dropped bond

The substitute will have a notional amount outstanding based on formula above.

In the Markit iBoxx EUR Liquid indices a substitute bond enters the index at the ask price.

In the event that no substitute is available, the proceeds from the sale of the dropped bond are invested as cash.

### 7.6.3) Monthly cash reinvestment between scheduled rebalancing dates

Cash from received coupons and non-substituted bonds is reinvested at the end of each month in the money market until the end of the following month. Cash from earlier months is also re-invested at the end of each month at the 1-month EURIBOR minus 12.5 basis points. At the next scheduled rebalancing cash is invested back in the index.

### 7.7) Determination of benchmarks

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.

### 7.8) Index history

The Index history starts on 31 October 2005. The indices have a base value of 100 on that date.

### 7.9) Settlement conventions

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

### 7.10) 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.

### 7.11) Publication of the Index

The Markit iBoxx EUR Liquid Diversified 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.

## 7.12) Data publication and access

The table below summarizes the publication of the Markit iBoxx EUR Liquid Diversified Indices 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
Weekly	Preview components (Rebalancing months only)	FTP Server / website
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
	XREF files	FTP Server

## 7.13) 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.

## 8) Governance and regulatory compliance

IHS Markit Benchmark Administration Limited (IMBA UK) is the Index Administrator of iBoxx indices. Information on IMBA UK's governance and compliance approach can be found [here](#). This document covers:

- Governance arrangements
- Input data integrity
- Conflicts of interest management
- Market disruption and Force Majeure
- Methodology changes and cessations
- Complaints
- Errors and restatements
- Reporting of infringements and misconduct
- Methodology reviews
- Business continuity

More details about IMBA UK can be found on the [Administrator's website](#).

## 9) Changes to the Markit iBoxx EUR Liquid Diversified indices

<b>01 Feb 2024</b>	<ul style="list-style-type: none"> <li>Country weight cap for the iBoxx EUR Liquid Sovereign Diversified indices lowered from 20% to 19%</li> </ul>
<b>01 May 2023</b>	<ul style="list-style-type: none"> <li>For the iBoxx € Germany Covered Capped Diversified Index, the 15% issuer cap will be applied based on the first parent entity instead of the issuer level</li> </ul>
<b>31 Mar 2022</b>	<p><b>Annual Index Review 2021</b></p> <ul style="list-style-type: none"> <li>Introduction of new market sector classification "Education" with market sub-sector classification "Academic &amp; Educational Services"</li> </ul>
<b>31 Mar 2021</b>	<ul style="list-style-type: none"> <li>Governance and Regulatory Compliance section added</li> </ul>
<b>23 Sep 2020</b>	<ul style="list-style-type: none"> <li>Corrected rebalancing months to January, April, July and October in accordance with already existing rebalancing schedule</li> </ul>
<b>31 Jul 2020</b>	<p><b>Annual Index Review 2019</b></p> <ul style="list-style-type: none"> <li>Introduction of updated corporate classification schema</li> <li>Implementation of updated Bank Tier Classification</li> <li>Updates as part of the changes in definition and treatment of hybrid bonds</li> </ul>
<b>31 Jan 2020</b>	<p><b>Annual Index Review 2019</b></p> <ul style="list-style-type: none"> <li>Definition update of 'Other Sub-Sovereigns' classification</li> <li>Addition of German structural covered bonds as eligible bond type under 'Covered bonds'</li> <li>Inclusion of zero coupon bonds into EUR Liquid indices</li> </ul>
<b>30 Sep 2018</b>	<p><b>Annual Index Review 2018</b></p> <ul style="list-style-type: none"> <li>Treatment of bond rating upgrades on t-2</li> <li>Clarification on bond eligibility during tender</li> <li>Clarification of treatment of called bonds</li> </ul>
<b>31 Jul 2017</b>	<p><b>Annual Index Review 2017</b></p> <ul style="list-style-type: none"> <li>Inclusion of Senior Callable Bank bonds</li> <li>Classification of Insurance Tier 3 notes</li> </ul>
<b>30 Nov 2016</b>	<p><b>Annual Index Review 2016</b></p> <ul style="list-style-type: none"> <li>Update of seniority levels for Markit iBoxx indices</li> <li>Rule clarification: Bonds trading flat of accrued</li> </ul>
<b>30 Nov 2016</b>	<p><b>Annual Index Review 2015</b></p> <ul style="list-style-type: none"> <li>Eligibility of subordinated financial debt with a contingent conversion feature at the point of non-viability</li> </ul>

<b>01 May 2015</b>	<b>Annual Index Review 2014</b> <ul style="list-style-type: none"> <li>● Change to Markit iBoxx tier classification of subordinated debt issued by insurance entities</li> </ul>
<b>01 Dec 2014</b>	<ul style="list-style-type: none"> <li>● Markit iBoxx EUR Liquid index family will follow the pricing methodology described in the document 'Markit iBoxx Pricing Rules'</li> <li>● Index restatement, complaints sections added</li> <li>● Additional clarifications on bond eligibility, classification and corporate actions</li> </ul>
<b>31 Jul 2013</b>	<ul style="list-style-type: none"> <li>● The minimum notional amount requirement changes from 1 billion to 500 million for the Markit iBoxx EUR Liquid Germany Covered Diversified Index</li> </ul>
<b>31 Jul 2011</b>	<ul style="list-style-type: none"> <li>● Maximum issuer weight in Markit iBoxx EUR Liquid Corporates Diversified and Markit iBoxx EUR Liquid Non-Financials Diversified index lowered from 7.5% to 4%</li> </ul>
<b>31 Jan 2011</b>	<ul style="list-style-type: none"> <li>● Exclusion of step-up and rating-driven bonds from the Markit iBoxx EUR Liquid Corporates Diversified and launch of Markit iBoxx EUR Liquid Non-Financials Diversified Index</li> </ul>

# 10) Further information

## **Client support**

For client support please contact [index\\_services@spglobal.com](mailto:index_services@spglobal.com).

## **Formal complaints**

Formal complaints should be emailed to [spdji\\_compliance@spglobal.com](mailto:spdji_compliance@spglobal.com).

Please note: [spdji\\_compliance@spglobal.com](mailto: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](mailto:index_services@spglobal.com).

# A) ESG Disclosures

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY [1]		
1	Name of the benchmark administrator.	IHS Markit Benchmark Administration Limited (IMBA)
2	Underlying asset class of the ESG benchmark. [2]	N/A
3	Name of the S&P Dow Jones Indices benchmark or family of benchmarks.	<a href="#">iBoxx Benchmark Statement</a>
4	Do any of the indices maintained by this methodology take into account ESG factors?	No
Appendix latest update:		May 2023
Appendix first publication:		May 2023

[1] The information contained in this Appendix is intended to meet the requirements of the European Union Commission Delegated Regulation (EU) 2020/1817 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the minimum content of the explanation of how environmental, social and governance factors are reflected in the benchmark methodology and the retained EU law in the UK (The Benchmarks (amendment and Transitional Provision) (EU Exit) Regulations 2019).

[2] The 'underlying assets' are defined in European Union Commission Delegated Regulation (EU) 2020/1816 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the explanation in the benchmark statement of how environmental, social and governance factors are reflected in each benchmark provided and published.



# Disclaimer

## Performance Disclosure/Back-Tested Data

Where applicable, S&P Dow Jones Indices and its index-related affiliates (“S&P DJI”) defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index’s Launch Date are considered back-tested. S&P DJI defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company’s public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed “Date of introduction”) is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index’s public release date.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Information presented prior to an index’s launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate certain ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using “Backward Data Assumption” (or pulling back) of ESG data for the calculation of back-tested historical performance. “Backward Data Assumption” is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as “product involvement”) were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on “Backward Data Assumption” please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used. Index returns shown do not represent the results of actual trading of investable assets/securities. S&P DJI maintains the index and calculates the index levels and performance shown or discussed but does not manage any assets.

Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US \$100,000 investment for a 12-month period (or US \$10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US \$1,650), the net return would be 8.35% (or US \$8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US \$5,375, and a cumulative net return of 27.2% (or US \$27,200).

### **Intellectual Property Notices/Disclaimer**

© 2024 S&P Dow Jones Indices. All rights reserved. S&P, S&P 500, SPX, SPY, The 500, US500, US 30, S&P 100, S&P COMPOSITE 1500, S&P 400, S&P MIDCAP 400, S&P 600, S&P SMALLCAP 600, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, Select Sector, S&P MAESTRO, S&P PRISM, S&P STRIDE, GICS, SPIVA, SPDR, INDEXOLOGY, iTraxx, iBoxx, ABX, ADBI, CDX, CMBX, MBX, MCDX, PRIMEX, HHPI, and SOVX are registered trademarks of S&P Global, Inc. ("S&P Global") or its affiliates. DOW JONES, DJIA, THE DOW and DOW JONES INDUSTRIAL AVERAGE are trademarks of Dow Jones Trademark Holdings LLC ("Dow Jones"). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P DJI does not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P DJI is impersonal and not tailored to the needs of any person, entity, or group of persons. S&P DJI receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P DJI does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P DJI makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P DJI is not an investment advisor, commodity trading advisor, fiduciary, "promoter" (as defined in the Investment Company Act of 1940, as amended) or "expert" as enumerated within 15 U.S.C. § 77k(a), and S&P DJI makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. S&P DJI is not a tax advisor. Inclusion of a security, commodity, crypto currency, or other asset within an index is not a recommendation by S&P DJI to buy, sell, or hold such security, commodity, crypto currency, or other asset, nor is it considered to be investment or trading advice.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof ("Content") may be modified, reverse engineered, reproduced, or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P DJI. The Content shall not be used for any unlawful or unauthorized purposes. S&P DJI and its third-party data providers and licensors (collectively "S&P Dow Jones Indices Parties") do not guarantee the accuracy, completeness, timeliness, or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" "WHERE IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIMS ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any

direct, indirect, incidental, exemplary, compensatory, punitive, special, or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related information and other analyses, including ratings, research and valuations are generally provided by licensors and/or affiliates of S&P Dow Jones Indices, including but not limited to S&P Global's other divisions such as S&P Global Market Intelligence. Any credit-related information and other related analyses and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. Any opinion, analyses and rating acknowledgement decisions are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P Dow Jones Indices does not assume any obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P DJI does not act as a fiduciary or an investment advisor. While S&P DJI has obtained information from sources it believes to be reliable, S&P DJI does not perform an audit or undertake independent verification of any information it receives. S&P DJI reserves the right to vary or discontinue any index at any time for regulatory or other reasons. Various factors, including external factors beyond S&P DJI's control might necessitate material changes to indices.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P Global Ratings reserves the right to assign, withdraw or suspend such acknowledgement at any time and in its sole discretion. S&P Dow Jones Indices, including S&P Global Ratings, disclaim any duty whatsoever arising out of the assignment, withdrawal, or suspension of an acknowledgement as well as any liability for any damage alleged to have been suffered on account thereof. Affiliates of S&P Dow Jones Indices LLC, including S&P Global Ratings, may receive compensation for its ratings and certain credit-related analyses, normally from issuers or underwriters of securities or from obligors. Such affiliates of S&P Dow Jones Indices LLC, including S&P Global Ratings, reserve the right to disseminate its opinions and analyses. Public ratings and analyses from S&P Global Ratings are made available on its Web sites, [www.standardandpoors.com](http://www.standardandpoors.com) (free of charge), and [www.ratingsdirect.com](http://www.ratingsdirect.com) and [www.globalcreditportal.com](http://www.globalcreditportal.com) (subscription), and may be distributed through other means, including via S&P Global Ratings publications and third-party redistributors. Additional information about our ratings fees is available at [www.standardandpoors.com/usratingsfees](http://www.standardandpoors.com/usratingsfees).

S&P Global keeps certain activities of its various divisions and business units separate from each other to preserve the independence and objectivity of their respective activities. As a result, certain divisions and business units of S&P Global may have information that is not available to other business units. S&P Global has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions, and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate, or otherwise address.

Some indices use the Global Industry Classification Standard (GICS<sup>®</sup>), 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 or any third party involved in making or compiling any GICS classifications have any liability for any direct,

indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

S&P Dow Jones Indices products are governed by the terms and conditions of the agreements under which they may be provided. A license is required from S&P Dow Jones Indices to display, create derivative works of and/or distribute any product or service that uses, is based upon and/or refers to any S&P Dow Jones Indices and/or index data.