

iBoxx EUR Liquid Germany Sovereign and Sub-Sovereign Index Methodology

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iBoxx EUR Liquid Germany Sovereign and Sub-Sovereign Index

The iBoxx EUR Liquid Germany Sovereign and Sub-Sovereign Index consists of the investment grade fixed-income market for Eurozone-currency denominated bonds issued by the Federal Republic of Germany and sub-sovereign entities domiciled in Germany.

The iBoxx EUR Liquid Germany Sovereign and Sub-Sovereign Index consists of a subset of the bonds in the iBoxx EUR index benchmark family of indices. The index rules have been designed to provide a balanced representation of EUR denominated German sovereign and sub-sovereign debt. The index is an integral part of the global suite of iBoxx Liquid Indices which provide the marketplace with liquid and investible versions of the broader iBoxx benchmark index families.

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 iBoxx EUR Liquid 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 iBoxx EUR Index family uses multisource prices as described in the document *iBoxx Pricing Methodology* publicly available at <https://www.spglobal.com/spdji/en/>.

This document covers the index rules and calculation methodology of the iBoxx EUR Liquid Germany Sovereign and Sub-Sovereign Index.

Bonds selection rules

Only bonds eligible for the Markit iBoxx EUR benchmark index are eligible for the index. The following selection criteria are used to determine the index constituents:

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

Bond type

Only fixed rate bonds whose cash flows can be determined in advance are eligible for the iBoxx EUR Liquid Germany Sovereign and Sub-Sovereign Index.

The index is comprised solely of bonds. T-Bills and other money market instruments are not eligible. The index includes only Euro denominated bonds from entities domiciled in Germany.

The list of proposed eligible bond types is as follows:

- Fixed coupon bonds (“plain vanilla bonds”)
- Zero coupon bonds
- Step-up bonds

Retail bonds and Private placements are excluded from the index.

For retail bonds and private placements, publicly available information is not always conclusive and the classification of a bond as a retail bond or a private placement will be made at S&P DJI’s discretion based on the information available at the time of determination. Any bond classified as retail or private placement is added to the list of excluded private placements and retail bonds. The list is published on <https://www.spglobal.com/spdji/en/> under *News & Information* for future reference and to ensure decision’s consistency.

In instances where a new bond type is not specifically excluded or included according to the published index rules, S&P DJI will analyze the features of such securities in line with the principles set out in 2.1 of this guide. S&P DJI may consult the specific Index Advisory Committees. Any decision as to the eligibility or ineligibility of a new bond type will be published and the index rules will be updated accordingly.

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.

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

Time to maturity

All bonds entering the Index must have a minimum remaining time to maturity of at least 18 months at the rebalancing date. Any bond existing in the Index with a time to maturity of less than 15 months is removed from the Index.

The time to maturity is measured from the rebalancing date to the maturity date of the bond.

Amount outstanding

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

- Sovereigns: EUR 2 billion
- Sub-sovereigns: EUR 1 billion

Age

The age of bonds entering the index should be greater than or equal to 40 days at the rebalancing day.

The age of the bond is measured from the first settlement date of the bond to the current rebalancing date.

Bond selection

Only sovereign and sub-sovereign debt issued from entities domiciled in Germany are eligible for the Index. In the event that less than 13 different issuers are eligible for the Index, supranational issuers that are part of the Markit iBoxx EUR index become eligible for the Index. Debt issued by winding-up agencies is excluded from the Index. As of September 30, 2011, the two issuers excluded by this rule are Erste Abwicklungsanstalt and FMS Wertmanagement (FMS).

Ranking Criteria

For the selection of sub-sovereign debt (excluding debt issued by KfW) the number of eligible bonds from each issuer is limited to two and the following ranking order is used for the selection:

1. Higher amount outstanding
2. Smaller minimum denomination size
3. More recent first settlement date
4. Longer time to maturity
5. Lower coupon

The number of bonds from the Federal Republic of Germany and KfW is limited to five each. If less than 13 issuers are eligible for the Index, supranational entities are added to the index until the number of eligible issuers is 13. A supranational bond added to the Index needs to stay in the Index for at least six months if it is eligible according to the other index rules.

The following ranking order is applied to determine the eligible supranational entities.

1. Rating – the entities are ranked according to their rating, entities rated AAA are receiving the

- highest ranking
- 2. Issuer outstanding debt – the size of the outstanding debt that is eligible for the Markit iBoxx EUR Index
- 3. More recent first settlement date of the newest issue

Issuer Capping

The following capping rules are applied to the index:

- 1. German sovereign debt and debt from KfW (Kreditanstalt fuer Wiederaufbau) are capped at 24% each per issuer, and at 4.8% per issue.
- 2. All remaining issuers are capped at 4.75%.

The capping is determined based on the market-values as of the rebalancing day.

The weight of the issuer is distributed to each selected issue of the issuer pro-rata based on the relative market values of the individual bonds.

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 the German central government denominated in EUR.

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 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.
- **Regions:** Bonds issued by local governments.

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 index is rebalanced every quarter at the end of October, January, April and July. 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 iBoxx EUR Liquid Germany Sovereign and Sub-Sovereign Index is analogous to the rebalancing of the Markit iBoxx EUR Benchmark indices.

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.

Index data

The calculation of the index is based on bid prices. New securities are included in the index at their respective ask prices when they enter the index family. If no price can be established for a particular security, the index continues to be calculated based on the last available price. This might be the case in periods of market stress, or disruption as well as in illiquid or fragmented markets. If the required inputs become impossible to obtain, S&P DJI may consult market participants prior to the next rebalancing date. Decisions are made publicly available on a timely basis and S&P DJI may refer back to previous cases.

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

Index Calculus

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

Treatment of the special intra-month events

Data for the application of corporate actions in the index may not be fully or timely available at all times, e.g. the final call prices for make-whole calls or the actual pay-in-kind percentage for PIK-payment options. In such cases, S&P DJI will estimate the approximate value based on the available data at the time of calculation.

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).

Cash

Cash from coupon payments and redemptions is held as cash in the Index and reinvested into the Index at the rebalancing day. During the month the cash component is not earning any interest.

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.

Monthly bond substitution between scheduled rebalancings

Bonds can leave the iBoxx EUR Liquid Germany Sovereign and Sub-Sovereign Index 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:

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

where:

A_{dropped}	Accrued interest of a dropped bond
$A_{\text{substitute}}$	Accrued interest of a substitute bond
O_{dropped}	Amount outstanding of a dropped bond
$O_{\text{substitute}}$	Fictitious amount outstanding of a substitute bond
$P_{\text{substitute}}^a$	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 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.

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.

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 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 neighboring bonds is also exactly the same, then the younger of the two benchmark bonds is chosen.

Index history

The Index history starts on 31 January 2006. The index has 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 Liquid Germany Sovereign and Sub-Sovereign Index is computed and disseminated once per minute between 9:00 am and 5:15 pm CET every day except on common European bank holidays.

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. In addition, midday fixing levels for bond prices and indices are also published.

Data publication and access

The table below summarizes the publication of the indices at <https://www.spglobal.com/spdji/en/> for registered users and on the FTP server.

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

Table: Frequency, File type and Access

Frequency	File Type	Access
Daily	Underlying files – Bond level	FTP Server
	Indices files – Index level	FTP Server / website / Bloomberg for index levels only
Monthly	End of Month Components	FTP Server / website
	XREF files	FTP Server

The index identifiers for the publication channels are:

Index Name	iBoxx EUR Liquid Germany Sovereign and Sub-Sovereign Index	
Return Type	TRi	CPi
SEDOL	—	—
ISIN	GB00B42GST86	GB00B4TRZK49
Ticker	IBXXXZAA	IBXXXZAC
RIC	.IBXXXZAA	.IBXXXZAC

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.

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](#).

Changes to the iBoxx EUR Liquid Germany Sovereign and Sub-Sovereign Index

01 May 2024	Annual Index Review 2023 <ul style="list-style-type: none"> • Update to Agencies' Classification Definition > Updated definition of 'Agencies' > Updated definition for 'Other Sub-Sovereigns'
31 Mar 2021	<ul style="list-style-type: none"> • Governance and Regulatory Compliance section added
31 Jan 2020	Annual Index Review 2019 <ul style="list-style-type: none"> • Definition update of 'Other Sub-Sovereigns' classification • Addition of German structural covered bonds as eligible bond type under 'Covered bonds' • Inclusion of zero coupon bonds into EUR Liquid indices
30 Sep 2018	Annual Index Review 2018 <ul style="list-style-type: none"> • Treatment of bond rating upgrades on t-2 • Clarification on bond eligibility during tender • Clarification of treatment of called bonds
30 Nov 2016	Annual Index Review 2016 <ul style="list-style-type: none"> • Clarification of the rule regarding bonds trading flat of accrued
01 Dec 2014	<ul style="list-style-type: none"> • Markit iBoxx EUR index family will follow the pricing methodology described in the document 'Markit iBoxx Pricing Rules' • Index restatement, complaints sections added • Additional clarifications on bond eligibility, classification and corporate actions
20 Dec 2011	<ul style="list-style-type: none"> • Launch of the Markit iBoxx EUR Liquid Germany Sovereign & Sub-Sovereign Liquid Index

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.

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.	S&P Dow Jones Indices Limited
2	Underlying asset class of the ESG benchmark.²	N/A
3	Name of the S&P Dow Jones Indices benchmark or family of benchmarks.	iBoxx Benchmark Statement
4	Do any of the indices maintained by this methodology take into account ESG factors?	No
Appendix latest update:		May 2023
Appendix first publication:		May 2023

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

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

Disclaimer

Performance Disclosure/Back-Tested Data

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

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

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

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

represent the results of actual trading of investable assets/securities. S&P DJI maintains the index and calculates the index levels and performance shown or discussed but does not manage any assets.

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

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