S&P Dow Jones Indices

A Division of S&P Global

iBoxx Standardized Total Return Swaps (TRS) *Trading Convention Guide*

September 2022

S&P Dow Jones Indices: Index Methodology

Table of Contents

iBoxx Standardized TRS Overview

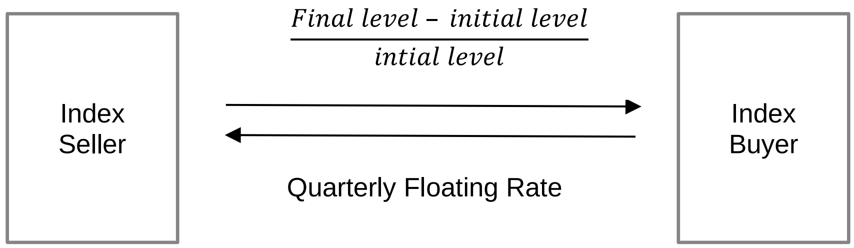
iBoxx Standardized Total Return Swaps (TRS) offer the possibility to take a synthetic long or short position on iBoxx indices. The index buyer (i.e., long position on the index) receives the total return (TR) of the index referenced in the trade, which is paid out at maturity. In return, the index buyer pays the index seller the funding cost (Coupon Amount) on a quarterly basis until the contract maturity. The Coupon Amount is based on the funding rate, i.e., Floating Rate Option, and is paid on each International Monetary Market (IMM) Date, following the IMM credit market convention.

iBoxx Standardized TRS contracts enable investors to gain or hedge exposure to the bond and leveraged loan markets easily and efficiently. They benefit from providing zero-tracking error to the underlying index and from strong liquidity due to their standardized trading structure. iBoxx Standardized TRS utilize standard trading documentation, including Standard Terms Supplement and Confirmation documents. The trading documentation reference the 2006 International Swaps and Derivatives Association (ISDA) Definitions and can be electronically confirmed via MarkitSERV.

Licenses and Data. iBoxx is a registered trademark of Markit Indices Limited. Markit Indices Limited owns all iBoxx data, database rights, indices, and all intellectual property rights therein. A license is required from Markit Indices Limited to create and/or distribute any product that uses, is based upon, or refers to any iBoxx index or data.

Trade Mechanics

Cash Flow Cycle



As shown in the diagram above, the index buyer receives the index performance at maturity, and pays the funding rate on a quarterly basis during the life of the contract. For trades that exceed one IMM quarter, the funding rate may be different for each quarter. The dealer quotes the initial level (live bid/offer) of the index, while the final level is the official closing index level on the maturity date of the TRS contract.

Maturity Dates

iBoxx Standardized TRS contracts trade with set maturity dates, which are business-day-adjusted IMM dates – 20th Mar/Jun/Sep/Dec. Contracts are traded with set 3-month maturity intervals. The 3-month contract is the shortest-dated contract and references the next IMM date, which means the 3M contract always has 3 months or less in maturity. Common maturities that are quoted are 3, 6, 9, and 12 months. For example, on March 25, 2021, a market maker may send iBoxx Standardized TRS quotes for the following four different contracts on the iBoxx USD Liquid High Yield Index as per below:

Maturity Date	Bid/Ask
June 2021	317.575 / 318.495
September 2021	317.111 / 318.671
December 2021	316.899 / 318.767
March 2022	316.575 / 319.013

Full First Coupon

iBoxx Standardized TRS contracts trade with a full first coupon convention, which allows trade fungibility and simplified coupon processing. The following trading documents support the full first coupon convention in iBoxx Standardized TRS contracts:

- Standard Terms Supplement (February 2015) – Full First Coupon
- Confirmation February (February 2015) – Full First Coupon

Under the full first coupon convention, all funding rate payments made by index buyers are for the entire IMM quarter, regardless of when the trade is executed within the initial IMM quarter. In the IMM quarter in which the trade is struck, an upfront payment is made by the index seller to the index buyer to compensate for the funding rate overpayment that the index buyer will make at the end of the initial period. This initial payment is equal to the accrued from the starting IMM date of the initial quarter through to the effective date.

Funding Rates

London Inter-Bank Offered Rate (LIBOR) Transition

Background. Since the inception of the iBoxx Standardized TRS in 2012, the applicable quarterly funding rates in the contracts has been the 3M LIBOR/EURIBOR rate for the respective underlying currency. Due to the transition away from LIBOR, iBoxx Standardized TRS contracts, which are administered by IMBA UK, will require changes in the trade mechanics specifically for the calculation of the funding leg in a Standardized iBoxx TRS contract that uses the LIBOR as the Floating Rate Option. This will have implications in the calculation of upfront and unwind amounts at the beginning and closing out of trades.

iBoxx Standardized TRS trades are governed by a Confirmation and a Standard Terms Supplement which incorporate by reference the definitions and provisions included in ISDA's *2006 Definitions*. With the impending cessation of the various Interbank Offered Rates (IBORs), iBoxx Standardized TRS will undergo the following changes:

- Alternative rates will be selected that can be used as the Floating Rate Options for iBoxx Standardized TRS trades.
- For legacy and new iBoxx Standardized TRS trades that continue to reference the IBORs, a fallback mechanism is in place for adhering parties once the IBORs are ceased or deemed non-representative by the regulatory authorities.

Conventions

While the trading conventions below are broadly accepted market standards in trading iBoxx Standardized TRS, they are not contractually binding. The iBoxx Standardized TRS trades are governed by a Confirmation and a Standard Terms Supplement which allow counterparties to select whichever funding rates they prefer.

iBoxx Standardized TRS is currently available on underlying indices that are denominated in EUR, GBP, and USD currencies. The full list of underlying indices is provided in this document's *Appendix*. As the administration and regulatory bodies for each of the currencies operate in separate jurisdictions, there are differences in the Floating Rate Options to be used for the funding component of the respective iBoxx Standardized TRS contracts.

The funding leg of a Standardized iBoxx TRS contract involves quarterly coupon payments referencing the Floating Rate Option as specified in the relevant Confirmation.

Prior to 20 December 2021

Commonly, the 3M LIBOR/EURIBOR is chosen as the Floating Rate Option to calculate the funding leg of an iBoxx Standardized TRS contract, and the currency of the LIBOR depends on the currency of the underlying index being referenced by the Standardized iBoxx TRS contract.

- **Standardized TRS on iBoxx EUR Indices**
    - The funding leg for Standardized TRS on iBoxx EUR indices commonly use the 3M Euro Interbank Offered Rate (EURIBOR), which is administered by European Money Markets Institute (EMMI) and authorized under the EU Benchmarks Regulation (BMR).

- **Standardized TRS on iBoxx GBP Indices**
    - The funding leg for Standardized TRS on iBoxx GBP indices commonly use the 3M GBP LIBOR, which is administered by the Intercontinental Exchange (ICE) Benchmark Administration (IBA) and authorized under the UK Financial Conduct Authority (FCA).
- **Standardized TRS on iBoxx USD Indices**
    - The funding leg for Standardized TRS on iBoxx USD indices commonly use the 3M USD LIBOR, which is administered by ICE Benchmark Administration (IBA) and authorized under the UK FCA.

From 20 December 2021 Onward

The following are the conventions for the Floating Rate Option for each of the currencies of the underlying index being referenced by the Standardized iBoxx TRS contract:

- **Standardized TRS on iBoxx EUR Indices**
    - The 3M EURIBOR is expected to continue to be published for the foreseeable future, and Standardized TRS on iBoxx EUR indices will continue to use the 3M EURIBOR as the Floating Rate Option.
- **Standardized TRS on iBoxx GBP Indices**
    - The Sterling Overnight Index Average (SONIA) compounded-in-arrears rate will be used as the Floating Rate Option for the relevant IMM periods. For this purpose, the SONIA Compounded Index published by the Bank of England will be used to determine the applicable SONIA compounded-in-arrears rate for the quarterly coupons, upfront and unwind amounts.
    - The SONIA Compounded Index methodology and the historical data can be accessed via the Bank of England website.
- **Standardized TRS on iBoxx USD Indices**
    - The Secured Overnight Financing Rate (SOFR) compounded-in-arrears rate will be used as the Floating Rate Option for the relevant IMM periods. For this purpose, the SOFR Index published by the Federal Reserve will used to determine the applicable SOFR compounded-in-arrears rate for quarterly coupons, upfront and unwind amounts.
    - The SOFR Index methodology and the historical data can be accessed via the Federal Reserve website.

Summary

The table below summarizes the conventions for the Floating Rate Option used to calculate the funding leg of the iBoxx Standardized TRS contracts.

iBoxx Standardized TRS Underlying Index Currency	Prior to 20 December 2021	From 20 December 2021 Onward
EUR	3M EURIBOR	3M EURIBOR
GBP	3M GBP LIBOR	SONIA Compounded in Arrears
USD	3M USD LIBOR	SOFR Compounded in Arrears

Fallback Mechanism for IBOR Cessation

For cases where IBORs are used in new and legacy iBoxx Standardized TRS trades prior to their cessation, a fallback mechanism has been put in place in the event that the IBORs are ceased or deemed non-representative by the respective regulatory authorities. This fallback mechanism is built into the ISDA's 2020 Supplement, which has been applicable since 25th January 2021.

ISDA's 2020 Supplement

Cessation Trigger Events. In October 2020, ISDA published a 2020 Supplement to the *2006 Definitions*. For purposes of the Standardized iBoxx TRS, this Supplement provides the following three cessation Trigger Events to initiate the fallback to a Risk-Free Rate (RFR) adjusted rate published by Bloomberg:

A public statement or publication of information by or on behalf of the administrator of the Applicable Rate announcing that it has ceased or will cease to provide the Applicable Rate permanently or indefinitely, provided that, at the time of the statement or publication, there is no successor administrator that will continue to provide the Applicable Rate;

- A public statement or publication of information by the regulatory supervisor for the administrator of the Applicable Rate, the central bank for the currency of the Applicable Rate, an insolvency official with jurisdiction over the administrator for the Applicable Rate, a resolution authority with jurisdiction over the administrator for the Applicable Rate or a court or an entity with similar insolvency or resolution authority over the administrator for the Applicable Rate, which states that the administrator of the Applicable Rate has ceased or will cease to provide the Applicable Rate permanently or indefinitely, provided that, at the time of the statement or publication, there is no successor administrator that will continue to provide the Applicable Rate;

  or

- If the Applicable Rate is Sterling LIBOR, Swiss Franc LIBOR, U.S. Dollar LIBOR, Euro, or Yen LIBOR only, a public statement or publication of information by the regulatory supervisor for the administrator of such Applicable Rate announcing the following:

  A. The regulatory supervisor has determined that such Applicable Rate is no longer—or, as of a specified future date will no longer be—representative of the underlying market and economic reality that such Applicable Rate is intended to measure, and that representativeness will not be restored,

     and

  B. It is being made with the awareness that the statement or publication will engage certain contractual triggers for fallbacks activated by pre-cessation announcements by such supervisor (howsoever described) in contracts. The first two bullet points above relate to permanent cessation, and the third bullet point above is the 'pre-cessation' trigger.

More information can be found on ISDA's website here.

Fallback Rate Approach

Bloomberg publishes the "all-in" RFR adjusted rates to account for the following:

- The fact that RFRs are overnight rates without a term structure
- The historical spread differential between LIBORs and the respective RFR compounded rates

The fallback rate will be compounded in arrears to align with the 3M tenor for the Standardized iBoxx TRS funding component. It will also incorporate a spread adjustment, using a five-year median comparison calculation between the relevant ‘compounded in arrears’ RFR and LIBOR.

The fallback rates applicable for the Standardized iBoxx TRS contracts will be based on the respective iBoxx index currencies as shown below:

iBoxx Index Currency	IBOR Funding Rate	Fallback RFR	Fallback Tenor	IBOR Fallback Bloomberg Ticker
EUR	3M EURIBOR	ESTR	3M	FEUR0003M
GBP	3M GBP LIBOR	SONIA	3M	FBP0003M
USD	3M USD LIBOR	SOFR	3M	FUS0003M

More information can be found on Bloomberg’s website here.

Impact on New and Legacy Trades

New Trades. ISDA launched the 2020 Supplement on October 23, 2020 which has been effective from January 25, 2021 onward. As noted earlier, the 2020 Supplement to the *2006 ISDA Definitions* includes the new cessation triggers and fallback provisions.

All new Standardized iBoxx TRS contracts entered on or after the Effective Date of the 2020 Supplement will include the amended floating rate option (i.e., the floating rate option with the fallback [counterparties will not have to take any additional steps]).

As mentioned above, the floating rate option with the fallback rates will only be applicable once one of the Trigger Events has occurred.

Legacy/Existing Trades. Counterparties with existing contracts executed before the new Standard Terms Supplement will need to adhere to a planned protocol by ISDA to align with the terms of the new Standard Terms Supplement. Any existing Standardized iBoxx TRS contract where one or both counterparties decline to adhere to the protocol will require bilateral settlement upon occurrence of the Trigger Events.

Upfront/Unwind and Coupon Calculus

The upfront/unwind amount (i.e., Accrued Amount at the time of entering into a new trade or closing out a trade) is calculated as follows:

If $\boldsymbol{Trade\ Date \neq\ Final\ Fixing\ Date}$:

$$Accrued\ Amount = Notional * Accrued\ Floating\ Rate * \frac{Effective\ Date - IMM\ Period\ Start\ Date}{y}$$

If $\boldsymbol{Trade\ Date =\ Final\ Fixing\ Date}$:

$$Accrued\ Amount = Notional * Coupon\ Floating\ Rate * \frac{Effective\ Date - IMM\ Period\ Start\ Date}{y}$$

The Coupon Amount for any IMM period that is not the last IMM period of the swap is calculated thusly:

$$Coupon\ Amount = Notional * Coupon\ Floating\ Rate * \frac{IMM\ Period\ End\ Date - IMM\ Period\ Start\ Date}{y}$$

The Coupon Payment for an IMM period that is the last IMM period of the swap is calculated as follows:

$$Coupon\ Amount = Notional * Coupon\ Floating\ Rate * \frac{IMM\ Period\ End\ Date - IMM\ Period\ Start\ Date + 1}{y}$$

Index Currency	Annual Days (*y*)
GBP	365
EUR	360
USD	360

Finally, the index buyer's trade value (TV) of the contract at maturity (Final Fixing Date) is calculated as follows:

$$TV\ at\ Final\ Fixing\ Date = Notional * \left(\frac{Index\ Level\ at\ Final\ Fixing\ Date}{Index\ Level\ at\ Entry\ Date} - 1\right)$$

However, if the contract is unwound prior to maturity of the contract, the index buyer's TV of the contract at unwind trade date is calculated as follows:

$$TV\ at\ Unwind\ Trade\ Date = Notional * \left(\frac{Index\ Level\ at\ Unwind\ Trade\ Date}{Index\ Level\ at\ Entry\ Date} - 1\right) - Accrued\ Amount$$

Forward-Looking Floating Rate Option

When the Floating Rate Option is a forward-looking term rate such as LIBOR, then the following is true:

$$Coupon\ Floating\ Rate\ =\ Accrued\ Floating\ Rate\ =\ 3M\ Libor/Euribor\ (as\ per\ fixing\ convention)$$

The LIBOR/EURIBOR fixing convention is as follows:

Index Currency	Forward-Looking Term Rate Publication Used
EUR	3M EURIBOR as of the IMM Period Start Date minus 2 Business Days
GBP	3M GBP LIBOR as of the IMM Period Start Date
USD	3M USD LIBOR as of the IMM Period Start Date minus 2 Business Days

Compounded-in-Arrears Floating Rate Option

When the Floating Rate Option is a compounded-in-arrears RFR based on SOFR or SONIA, then calculations are as follows:

$$Coupon\ Floating\ Rate\ = \left(\frac{RFR\ Index_{IMM\ Period\ End\ Date-2\ Business\ Days}}{RFR\ Index_{IMM\ Period\ Start\ Date-2\ Business\ Days}} - 1\right) * \frac{y}{d_C}$$

where:

$$d_C = (IMM\ Period\ End\ Date - 2\ Business\ Days) - (IMM\ Period\ Start\ Date - 2\ Business\ Days).$$

$$Accrued\ Floating\ Rate\ = \left(\frac{RFR\ Index_{Trade\ Date-1\ Business\ Day}}{RFR\ Index_{IMM\ Period\ Start\ Date-2\ Business\ Days}} - 1\right) * \frac{y}{d_A}$$

where:

$$d_A = (Trade\ Date - 1\ Business\ Day) - (IMM\ Period\ Start\ Date - 2\ Business\ Days).$$

Index Currency	RFR Index	Annual Days (*y*)
GBP	SONIA Compounded Index (IUDZOS2)	365
USD	SOFR Index (SOFRAI)	360

Glossary

Term	Definition
Accrued Amount	Initial Payment Amount as specified in the Confirmation
Business Days	• London and TARGET2 for GBP and EUR • New York for USD
Coupon Amount	Quarterly amounts based on the Floating Rate Option
Effective Date	Trade Date + 1 Calendar Day
Day Count Convention	ACT/360 for EUR and USD, ACT/365 for GBP
Floating Rate Option	Relevant funding rate as specified in the Confirmation
Final Fixing Date	• Specified in the trade confirmation • IMM date on which the trade payout is determined
Floating Rate Accrued for any IMM Period *(i.e., <u>not</u> the last IMM period of the swap)*	IMM date (inclusive) to IMM date (exclusive)
Floating Rate Accrued for IMM Period *(i.e., the last IMM period of the swap)*	IMM date (inclusive) to IMM date (inclusive)
IMM Period Start Date	Start date of the relevant IMM Period
IMM Period End Date	End date of the relevant IMM Period
Index Level	Index level of the index underlying the iBoxx Standardized TRS contract
Quarterly IMM Dates	Mar/Jun/Sep/Dec 20th or the next Business Day
Trade Date	Date on which trade is agreed

Further details of the relevant contract terms are defined in the iBoxx Standardized TRS Standard Terms Supplement and Confirmation, which is available for download via the iBoxx TRS website at > Tradable – Standardized TRS.

Governance and Regulatory Compliance

IMBA UK is the Administrator of the iBoxx Standardized Total Return Swaps (TRS) indices. Information on IMBA UK's governance and compliance approach can be found here. This document covers the following topics:

- Governance arrangements, including external committees
- 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: Benchmark Administration by IMBA UK | IHS Markit

Further Information

Contractual or Content Issues

For queries about contract- or content-related matters, please refer to the following:

Markit Indices Limited
Friedrich-Ebert-Anlage 35-37
60327 Frankfurt am Main
Germany

Tel +49 (0) 69 299 868 100 Fax +49 (0) 69 299 868 149

E-mail: *indices@ihsmarkit.com*.
Internet: https://ihsmarkit.com/index

Technical Issues and Client Support

For technical and client support, please e-mail *indices@ihsmarkit.com*, or call the relevant telephone number below:

Asia Pacific	Europe	USA
Japan: +81 3 6402 0127	**General**: +800 6275 4800	**General**: +1 877 762 7548
Singapore: +65 6922 4210	**UK**: +44 20 7260 2111	

Formal Complaints

Formal complaints should be e-mailed to *spdji_compliance@spglobal.com*.

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

For general index inquiries, please contact *indices@ihsmarkit.com*.

Appendix

Indices Currently Available for iBoxx Standardized TRS

iBoxx Index	International Securities Identification Number (ISIN)	Ticker	Reference Entity Data (RED) Code
iBoxx EUR Contingent Convertible Liquid Developed Market AT1	GB00BQY78372	IBXXC2D1	4J624GAA3
iBoxx USD Contingent Convertible Liquid Developed Market AT1	GB00BQY78F97	IBXXC1D1	4J624DAA0
iBoxx EUR Corporates	DE0006301161	QW5A	4J623OAA7
iBoxx EUR Liquid High Yield	GB00B57G6H43	IBOXXMJA	4J623RAA0
iBoxx GBP Corporates	DE0005993174	IYDU	4J623NAA9
iBoxx USD Liquid High Yield	GB00B4K07738	IBOXHY	4J623JAA8
iBoxx USD Liquid Investment Grade	GB00B4K4X773	IBOXIG	4J622TAA7
iBoxx USD Liquid Leveraged Loans	GB00B4Q2XT74	IBXXLLTR	4J623WAA9
iBoxx USD Liquid High Yield Oil & Gas (5/25/50 Issuer Cap)	GB00BZ1NN361	IBXXLOG1	4J624NAA8
iBoxx USD Liquid Investment Grade 10+ Index	GB00BN56M180	IBXXLIG1	4J624PAA3
iBoxx USD Emerging Markets Sovereigns & Sub-Sovereigns Capped	GB00BD05BC41	IBXXEM11	4J625JAA6
iBoxx USD Liquid Investment Grade BBB 0+	GB00BL09SP43	IBXXUQ0T	4J625PAA2

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

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

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.