



Deutsche Bank AG

Notes or Securities Linked to an Index and/or an Exchange-Traded Fund, or a Basket of Indices and/or Exchange-Traded Funds

Deutsche Bank AG may from time to time offer and sell notes or securities, as part of our Senior Notes, Series A (collectively, the “**securities**”) linked to one or more indices and/or exchange-traded funds, or a basket of indices and/or exchange traded funds. This underlying supplement describes some of the potential indices to which the securities may be linked and/or to which an exchange-traded fund to which your securities are linked tracks, as well as related matters concerning the relationship, if any, between Deutsche Bank AG and the sponsor or publisher of such indices. This underlying supplement supplements the disclosure in any pricing supplement that may reference it, any applicable product supplement, the accompanying prospectus supplement and prospectus. A separate term sheet or pricing supplement (referred to herein as a “**pricing supplement**”) will describe terms that apply to specific issuances of the securities and may include changes to the description of any relevant index or exchange traded fund contained in this underlying supplement. The relevant pricing supplement should be read in connection with this underlying supplement, any applicable product supplement and the accompanying prospectus and prospectus supplement. To the extent that the disclosure in the relevant pricing supplement is inconsistent with the disclosure herein, the disclosure in the relevant pricing supplement will control.

Any payments on the securities are subject to the credit of Deutsche Bank AG and you may lose your entire investment.

By acquiring the securities, you will be bound by and will be deemed to consent to the imposition of any Resolution Measure by the competent resolution authority, which may include the write down of all, or a portion, of any payment on the securities or the conversion of the securities into ordinary shares or other instruments of ownership. If any Resolution Measure becomes applicable to us, you may lose some or all of your investment in the securities. Please see the section “Risk Factors” beginning on page 20 in the accompanying prospectus and the section “Resolution Measures” beginning on page 76 in the accompanying prospectus for more information.

Investing in the securities involves risks not associated with an investment in conventional securities. See “Risk Factors” beginning on page 19 of the accompanying prospectus and page PS-5 of the accompanying prospectus supplement as well as the risk factors in the relevant pricing supplement and any applicable product supplement for risks related to an investment in the securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the securities or passed upon the accuracy or the adequacy of this underlying supplement, the accompanying prospectus, prospectus supplement, the relevant pricing supplement or any applicable product supplement. Any representation to the contrary is a criminal offense.

The securities are not deposits or savings accounts and are not insured or guaranteed by the Federal Deposit Insurance Corporation or any other U.S. or foreign governmental agency or instrumentality.

April 26, 2024

ADDITIONAL INFORMATION ABOUT THE SECURITIES

You should read this underlying supplement together with the prospectus dated April 26, 2024, as supplemented by the prospectus supplement dated April 26, 2024, relating to our Series A senior notes, any applicable product supplement and the relevant pricing supplement, which together contain a description of the terms of the securities to be offered and other disclosures relevant to the securities.

Our Central Index Key, or CIK, on the SEC website is 0001159508. As used in this underlying supplement, “**we**,” “**us**” or “**our**” refers to Deutsche Bank AG, including, as the context requires, acting through one of its branches.

You should carefully consider, among other things, the risk considerations set forth in accompanying prospectus and prospectus supplement, any applicable product supplement and the relevant pricing supplement, as the securities involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisers before deciding to invest in the securities.

In this underlying supplement, when we refer to the “**securities**,” we mean certain securities or notes that may be offered by Deutsche Bank AG from time to time linked to one or more indices or exchange traded funds. Also, references to the “**accompanying prospectus**” and “**prospectus supplement**” mean, respectively, the accompanying prospectus dated April 26, 2024 and the prospectus supplement dated April 26, 2024, relating to our Series A senior notes and references to “**any applicable product supplement**” refer to the relevant product supplement that we may file from time to time relating to the particular category of your securities. References to the “**relevant pricing supplement**” mean the pricing supplement that describes the specific terms of your securities.

Specific Terms Will Be Described in Relevant Pricing Supplements

The specific terms of your securities will be described in the relevant pricing supplement, including any additions or changes to the terms specified in the relevant product supplement or the description of the relevant index or indices set forth in this underlying supplement.

TABLE OF CONTENTS

INDICES	US-2
The Bloomberg Commodity Index SM	US-2
The DAX [®] Index.....	US-9
The Dow Jones Industrial Average [®]	US-18
The Dow Jones U.S. Real Estate Index	US-20
The FTSE [®] 100 Index.....	US-23
The MSCI Indices	US-25
<i>The MSCI ACWI Index[®]</i>	US-25
<i>The MSCI EAFE Index[®]</i>	US-25
<i>The MSCI Emerging Markets IndexSM</i>	US-25
The NASDAQ-100 [®] Index	US-30
The Nikkei Stock Average Index	US-34
The Russell Indices	US-37
<i>The Russell 1000[®] Index</i>	US-37
<i>The Russell 2000[®] Index</i>	US-37
<i>The Russell 3000[®] Index</i>	US-37
<i>The Russell Midcap[®] Index</i>	US-37
The S&P/ASX 200 Index	US-41
The S&P Select Industry Indices.....	US-44
<i>The S&P[®] Biotechnology Select Industry Index</i>	US-44
<i>The S&P[®] Homebuilders Select Industry Index</i>	US-44
<i>The S&P[®] Oil & Gas Exploration & Production Select Industry Index</i>	US-44
<i>The S&P[®] Retail Select Industry Index</i>	US-44
The S&P U.S. Indices.....	US-48
<i>The S&P 500[®] Index</i>	US-48
<i>The S&P MidCap 400[®] Index</i>	US-48
<i>The S&P SmallCap 600[®] Index</i>	US-48
The Select Sector Indices.....	US-54
<i>The Consumer Discretionary Select Sector Index</i>	US-54
<i>The Energy Select Sector Index</i>	US-54
<i>The Financial Select Sector Index</i>	US-54
<i>The Health Care Select Sector Index</i>	US-54
<i>The Industrials Select Sector Index</i>	US-54
<i>The Technology Select Sector Index</i>	US-55
The STOXX Benchmark Indices	US-57
<i>The STOXX[®] Europe Total Market Index</i>	US-57
<i>The STOXX[®] Europe 600 Index</i>	US-57
<i>The EURO STOXX[®] Index</i>	US-58
<i>The STOXX[®] Europe 600 Supersector Indices and the EURO STOXX[®] Supersector Indices</i>	US-58
<i>The STOXX[®] Europe 50 Index</i>	US-58
<i>The EURO STOXX 50[®] Index</i>	US-59
The Swiss Market Index	US-64
The TOPIX [®] Index	US-67
License Agreements	US-70
EXCHANGE-TRADED FUNDS	US-72

INDICES

The Bloomberg Commodity IndexSM

We obtained all information contained in this underlying supplement regarding the Bloomberg Commodity IndexSM, its single-commodity sub-indices and the forward-month version of the Bloomberg Commodity IndexSM and its single-commodity sub-indices (each, a “**Bloomberg Commodity Index**” and collectively, the “**Bloomberg Commodity Indices**”), including, without limitation, their make up, methods of calculation and changes in their components, from publicly available information. This information reflects the policies of, and is subject to change by, Bloomberg Index Services Limited (“**BISL**” and, collectively with its affiliates, “**Bloomberg**”), the index sponsor. Bloomberg has no obligation to continue to publish, and may discontinue publication of, the Bloomberg Commodity Indices at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the Bloomberg Commodity Indices in connection with the offer and sale of securities.

In addition, information about the Bloomberg Commodity Indices may be obtained from other sources including, but not limited to, the Bloomberg Commodity Indices sponsor’s website. We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the Bloomberg Commodity Indices are accurate or complete.

The Bloomberg Commodity IndexSM is reported by Bloomberg L.P. under the ticker symbol “BCOM.”

The Bloomberg Commodity IndexSM was introduced in July 1998 to provide unique, diversified, economically rational and liquid benchmarks for commodities as an asset class. The Bloomberg Commodity IndexSM currently is composed of the prices of twenty-three exchange-traded futures contracts on twenty-one physical commodities. An exchange-traded futures contract is a bilateral agreement providing for the purchase and sale of a specified type and quantity of a commodity or financial instrument during a stated delivery month for a fixed price. For a general description of the commodity future markets, see “The Commodity Futures Markets” below. The commodities included in the Bloomberg Commodity IndexSM for 2023 are as follows: aluminum, coffee, copper, corn, cotton, crude oil (WTI and Brent), gold, lead, lean hogs, live cattle, low sulphur gas oil, natural gas, nickel, RBOB gasoline, silver, soybean meal, soybean oil, soybeans, sugar, ULS diesel, wheat (Chicago and KC HRW) and zinc.

Benchmark Governance, Audit and Review Structure

BISL uses two primary committees to provide overall governance and effective oversight of its benchmark administration activities:

The Product, Risk & Operations Committee (“**PROC**”) provides direct governance and is responsible for the first line of controls over the creation, design, production and dissemination of benchmark indices, strategy indices and fixings administered by BISL, including the Indices. The PROC is composed of Bloomberg personnel with significant experience or relevant expertise in relation to financial benchmarks. Meetings are attended by Bloomberg Legal & Compliance personnel. Nominations and removals are subject to review by the BOC, discussed below.

The oversight function is provided by Bloomberg’s Benchmark Oversight Committee (“**BOC**”). The BOC is independent of the PROC and is responsible for reviewing and challenging the activities carried out by the PROC. In carrying out its oversight duties, the BOC receives reports of management information both from the PROC as well as Bloomberg Legal & Compliance members engaged in second level controls.

On a quarterly basis, the PROC reports to the BOC on governance matters, including but not limited to client complaints, the launch of new benchmarks, operational incidents (including errors & restatements), major announcements and material changes concerning the benchmarks, the results of any reviews of the benchmarks (internal or external) and material stakeholder engagements.

As described in more detail below, the composition of the Index is rebalanced by BISL each year pursuant to the established procedures by index managers operating within the PROC governance body under the oversight of the BOC oversight function. Any material deviations or changes from established procedures are subject to review by such bodies. In addition, to the extent practicable, BISL may solicit stakeholder feedback, including by means of the Index Advisory Council. Once approved, the new composition of the Index is publicly announced and takes effect in the month of January immediately following the announcement.

Four Main Principles Guiding the Creation of the Bloomberg Commodity IndexSM

The Bloomberg Commodity IndexSM was created using the following four main principles:

- **Economic Significance.** A commodity index should fairly represent the importance of a diversified group of commodities to the world economy. To achieve a fair representation, the Bloomberg Commodity IndexSM uses both liquidity data and U.S. dollar-weighted production data in determining the relative quantities of included commodities. The Bloomberg Commodity IndexSM primarily relies on liquidity data, or the relative amount of trading activity of a particular commodity, as an important indicator of the value placed on that commodity by financial and physical market participants. The Bloomberg Commodity IndexSM also relies on production data as a useful measure of the importance of a commodity to the world economy. Production data alone, however, may underestimate the economic significance of storable commodities (e.g., gold) relative to non-storable commodities (e.g., live cattle). Production data alone also may underestimate the investment value that financial market participants place on certain commodities, and/or the amount of commercial activity that is centered around various commodities. Accordingly, production statistics alone do not necessarily provide as accurate a blueprint of economic importance as the pronouncements of the markets themselves. The Bloomberg Commodity IndexSM thus relies on data that is both endogenous to the futures markets (liquidity) and exogenous to the futures markets (production) in determining relative weightings.
- **Diversification.** A second major goal of the Bloomberg Commodity IndexSM is to provide diversified exposure to commodities as an asset class. Disproportionate weightings of any particular commodity or sector increase volatility and negate the concept of a broad-based commodity index. Instead of diversified commodities exposure, the investor is unduly subjected to micro-economic shocks in one commodity or sector. As described further below, diversification rules have been established and are applied annually. Additionally, the Bloomberg Commodity IndexSM is rebalanced annually on a price-percentage basis in order to maintain diversified commodities exposure over time.
- **Continuity.** A third goal of the Bloomberg Commodity IndexSM is to be responsive to the changing nature of commodity markets in a manner that does not completely reshape the character of the Bloomberg Commodity IndexSM from year to year. The Bloomberg Commodity IndexSM is intended to provide a stable benchmark, so that end-users may be reasonably confident that historical performance data (including such diverse measures as correlation, spot yield, roll yield and volatility) is based on a structure that bears some resemblance to both the current and future composition of the Bloomberg Commodity IndexSM.
- **Liquidity.** Another goal of the Bloomberg Commodity IndexSM is to provide a highly liquid index. The explicit inclusion of liquidity as a weighting factor helps to ensure that the Bloomberg Commodity IndexSM can accommodate substantial investment flows. The liquidity of an index affects transaction costs associated with current investments. It also may affect the reliability of historical price performance data.

These principles represent goals of the Bloomberg Commodity IndexSM, its creators and owners and there can be no assurance that these goals will be reached by the BISL.

Composition of the Bloomberg Commodity IndexSM

Commodities available for inclusion in the Bloomberg Commodity IndexSM

The commodities that have been selected for possible inclusion in the Bloomberg Commodity IndexSM are believed by BISL to be sufficiently significant to the world economy to merit consideration for inclusion in the Bloomberg Commodity IndexSM, and each such commodity is the subject of a qualifying related futures contract (a “**Designated Contract**”).

The 25 commodities currently eligible for inclusion in the Bloomberg Commodity IndexSM are as follows: aluminum, cocoa, coffee, copper, corn, cotton, crude oil, gold, lead, lean hogs, live cattle, low sulphur gas oil, natural gas, nickel, platinum, RBOB gasoline, silver, soybean meal, soybean oil, soybeans, sugar, tin, ULS diesel, wheat and zinc.

Designated contracts for each commodity

The commodities selected to be included in the Bloomberg Commodity IndexSM for 2023 are as follows: aluminum, coffee, copper, corn, cotton, crude oil, gold, lead, lean hogs, live cattle, low sulphur gas oil, natural gas, nickel, RBOB gasoline, silver, soybean meal, soybean oil, soybeans, sugar, ULS diesel, wheat and zinc.

Historically, through and including the composition of the Bloomberg Commodity IndexSM for 2023, BISL has chosen for each commodity one Designated Contract that is traded in North America and denominated in U.S. dollars (with the exception of several LME contracts, which are traded in London, and with the exception of crude oil, for which two Designated Contracts have been selected starting in 2012, and wheat, for which two Designated Contracts that are traded in North America have been selected starting in 2013). It is possible that BISL will in the future select more than one

Designated Contract for additional commodities or may select Designated Contracts that are traded outside of the United States or in currencies other than the U.S. dollar. For example, in the event that changes in regulations concerning position limits materially affect the ability of market participants to replicate the Bloomberg Commodity IndexSM in the underlying futures markets, it may become appropriate to include multiple Designated Contracts for one or more commodities (in addition to crude oil and wheat) to enhance liquidity. The termination or replacement of a futures contract on an established exchange occurs infrequently. If a Designated Contract were to be terminated or replaced, a comparable futures contract would be selected, if available, to replace the Designated Contract.

Commodity Groups

For purposes of applying the diversification rules discussed above and below, the commodities available for inclusion in the Bloomberg Commodity IndexSM are assigned to commodity groups. The commodity groups currently include Energy, Grain, Industrial Metals, Livestock, Precious Metals and Softs.

The commodity groups, and the commodities included in each group are currently as follows:

Commodity Group	Commodity
Energy	WTI Crude Oil
	Brent Crude Oil
	Natural Gas
	RBOB Gasoline
	Low Sulphur Gas Oil
	ULS Diesel
Grains	Corn
	Soybeans
	Soybean Oil
	Soybean Meal
	Wheat (Chicago)
	Wheat (KC HRW)
Industrial Metals	Aluminum
	Copper
	Lead
	Nickel
	Tin
	Zinc
Precious Metals	Gold
	Platinum
	Silver
Softs	Cocoa
	Coffee
	Cotton
	Sugar
Livestock	Live Cattle
	Lean Hogs

2024 Bloomberg Commodity IndexSM Target Weights Breakdown by Commodity and Commodity Group

The target weights for the commodities included in the Bloomberg Commodity IndexSM and the target weights for the commodity groups for 2024 are as follows:

Commodity Group	Commodity	Target Weight	Target Group Weight
Energy	Natural Gas	7.9841690%	30.13%
	WTI Crude Oil	7.3620050%	
	Brent Crude Oil	7.6379950%	
	Low Sulphur Gas Oil	2.7798210%	
	RBOB Gasoline	2.2073490%	
	ULS Diesel	2.1604180%	
Grains	Soybeans	5.9068480%	23.10%
	Corn	5.6623490%	
	Soybean Meal	3.5401900%	
	Soybean Oil	3.3491640%	
	Wheat (Chicago)	2.8184120%	
	Wheat (KC HRW)	1.8189100%	
Industrial Metals	Copper	5.2978220%	15.35%
	Aluminum	4.1056260%	
	Zinc	2.4945660%	
	Nickel	2.5842820%	
	Lead	0.8661400%	
Precious Metals	Gold	14.3468000%	18.82%
	Silver	4.4770770%	
Softs	Coffee	2.9741780%	7.35%
	Sugar	2.8076370%	
	Cotton	1.5703150%	
Livestock	Live Cattle	3.4650870%	5.25%
	Lean Hogs	1.7828380%	

Source: Bloomberg

Determination of Relative Weightings

The relative weightings of the component commodities included in the Bloomberg Commodity IndexSM are determined annually according to both liquidity and U.S. dollar-adjusted production data in 2/3 and 1/3 shares, respectively. For each of the commodities designated for potential inclusion in the Bloomberg Commodity IndexSM, liquidity is measured by the Commodity Liquidity Percentage (“**CLP**”) and production by the Commodity Production Percentage (“**CPP**”). The CLP for each commodity is determined by taking a five-year average of the product of trading volume and the historic U.S. dollar value of the Designated Contract for that commodity, and dividing the result by the sum of such products for all commodities which were designated for potential inclusion in the applicable index. The CPP is determined for each commodity by taking a five-year average of annual world production figures, adjusted by the historic U.S. dollar value of the Designated Contract, and dividing the result by the sum of such production figures for all the commodities which were designated for potential inclusion in the applicable index. For primary commodities that appear in the Bloomberg Commodity IndexSM along with their derivatives (e.g., crude oil, together with ULS diesel and RBOB gasoline), the CPPs within that group of commodities are reassigned among the primary commodity and its derivative commodities to eliminate the double-counting production figures for the primary commodity that would otherwise occur if no adjustment were made. The same process is applied when more than one Designated Contract has been selected for a particular commodity. The CLP and the CPP are then combined (using a ratio of 2:1) to establish the Bloomberg Commodity IndexSM Percentage (“**CIP**”) for each commodity. This CIP is then adjusted in accordance with the diversification rules in order to determine the commodities which will be included in the Bloomberg Commodity IndexSM and their respective percentage weights.

Diversification Rules

The Bloomberg Commodity IndexSM is designed to provide diversified exposure to commodities as an asset class. To ensure that no single commodity or commodity sector dominates the Bloomberg Commodity IndexSM, the following diversification rules are applied to the annual reweighting and rebalancing of the Bloomberg Commodity IndexSM as of January of the applicable year:

- No single commodity (e.g., natural gas or silver) may constitute over 15% of the Bloomberg Commodity IndexSM.
- No single commodity, together with its derivatives (e.g., WTI Crude Oil and Brent Crude Oil, together with ULS Diesel, Unleaded Gas and Low Sulphur Gas Oil), may constitute more than 25% of the Bloomberg Commodity IndexSM,
- No related group of commodities (e.g., energy, precious metals, livestock or grains) may constitute more than 33% of the Bloomberg Commodity IndexSM.
- No single commodity (e.g., natural gas or silver) may constitute less than 2% of the Bloomberg Commodity IndexSM, as liquidity allows.

The last rule helps to increase the diversification of the Bloomberg Commodity IndexSM by giving even the smallest commodity within the basket a reasonably significant weight. Commodities with small weights initially may have their weights increased to higher than 2% by prior steps.

Following the annual reweighting and rebalancing of the Bloomberg Commodity IndexSM in January, the percentage of any single commodity or group of commodities at any time prior to the next reweighting or rebalancing will fluctuate and may exceed or be less than the percentages set forth above.

Commodity Index Multipliers

The new unit weights for each commodity included in the Bloomberg Commodity IndexSM are determined by calculating the applicable Commodity Index Multipliers (“**CIMs**”). Following application of the diversification rules discussed above, CIPs are incorporated into the Bloomberg Commodity IndexSM by calculating the new unit weights for each commodity. On the fourth business day of the month of January (the “**CIM Determination Date**”) following the calculation of the CIPs, the CIPs are combined with the settlement prices of all Designated Contracts for such day to create the CIM for each Designated Contract for each index component. This CIM is used to achieve the percentage weightings of the index components, in U.S. dollar terms, indicated by their respective CIPs. After the CIMs are calculated, they remain fixed throughout the year. As a result, the observed price percentage of each index component will float throughout the year, until the CIMs are reset the following year based on new CIPs.

Calculation of the Bloomberg Commodity IndexSM

The Bloomberg Commodity IndexSM is calculated by BISL by applying the impact of the changes to the futures prices of commodities included in the Bloomberg Commodity IndexSM (based on their relative weightings).

Once the CIMs are determined as discussed above, the calculation of the Bloomberg Commodity IndexSM is a mathematical process that reflects the performance of each index component and the returns that correspond to the weekly announced interest rate for specified 3-month U.S. Treasury Bills.

At present, BISL disseminates the Bloomberg Commodity IndexSM levels approximately every 15 seconds (assuming the Bloomberg Commodity IndexSM levels have changed within such 15-second interval) from 10:00 p.m. to 3:20 p.m., New York City time, and publishes daily levels at approximately 5:00 p.m., New York City time, on Bloomberg page “BCOMTR <Index>.”

The Bloomberg Commodity IndexSM is a rolling index

The Bloomberg Commodity IndexSM is composed of futures contracts on physical commodities. Unlike equities, which typically entitle the holder to a continuing stake in a corporation, commodity futures contracts normally specify a certain date for the delivery of the underlying physical commodity. In order to avoid delivering the underlying physical commodities and to maintain exposure to the underlying physical commodities, periodically futures contracts on physical commodities specifying delivery on a nearby date must be sold and futures contracts on physical commodities that have not yet reached the delivery period must be purchased. The rollover for each contract occurs over a period of five BCOM

Business Days each month according to a pre-determined schedule. This process is known as “rolling” a futures position. The Bloomberg Commodity IndexSM is a “rolling index.”

A “**BCOM Business Day**” means any day on which the sum of the CIPs for those index components that are open for trading is greater than 50%. For purposes of this definition, the CIPs used during any calendar year are those calculated in the preceding year and applied on the CIM Determination Date for that year; provided however, that on any day during such calendar year falling prior to or on the CIM Determination Date, the preceding year’s CIPs will be used for purposes of determining the existence of a BCOM Business Day.

The Bloomberg Commodity IndexSM is calculated on a Total Return Basis

The Bloomberg Commodity IndexSM is a “total return” index. The overall return on the Bloomberg Commodity IndexSM is generated by two components: (i) unleveraged returns on futures contracts on the physical commodities comprising the Bloomberg Commodity IndexSM and (ii) the returns that correspond to the weekly announced interest rate for specified 3-month U.S. Treasury Bills. The returns are calculated by using the most recent weekly auction high rate for 13-week U.S. Treasury Bills, as reported on the U.S. Treasury website published by the Bureau of the Fiscal Service of the Department of the Treasury, or any successor source, which is generally published once per week on Monday.

Bloomberg Commodity IndexSM Calculation Disruption Events

From time to time, disruptions can occur in trading futures contracts on various commodity exchanges. The daily calculation of the Bloomberg Commodity IndexSM may be adjusted in the event that BISL determines that any of the following index calculation disruption events exists:

- the termination or suspension of, or material limitation or disruption in the trading of any futures contract used in the calculation of the Bloomberg Commodity IndexSM on that day;
- the settlement price of any futures contract used in the calculation of the Bloomberg Commodity IndexSM reflects the maximum permitted price change from the previous day’s settlement price;
- the failure of an exchange to publish official settlement prices for any futures contract used in the calculation of the Bloomberg Commodity IndexSM; or
- with respect to any futures contract used in the calculation of the Bloomberg Commodity IndexSM that trades on the LME, a BCOM Business Day on which the LME is not open for trading.

The Commodity Futures Markets

Futures contracts on physical commodities are traded on regulated futures exchanges, in the over-the-counter market and on various types of physical and electronic trading facilities and markets. As of the date of this underlying supplement, all of the contracts included in the Bloomberg Commodity IndexSM described in this underlying supplement are exchange-traded futures contracts. An exchange-traded futures contract provides for the purchase and sale of a specified type and quantity of a commodity or financial instrument during a stated delivery month for a fixed price. A futures contract provides for a specified settlement month in which cash settlement is made or in which the commodity or financial instrument is to be delivered by the seller (whose position is therefore described as “short”) and acquired by the purchaser (whose position is therefore described as “long”).

No purchase price is paid or received on the purchase or sale of a futures contract. Instead, an amount of cash or cash equivalents must be deposited with the broker as “initial margin.” This amount varies based on the requirements imposed by the exchange clearing houses, but it may be lower than 5% of the notional value of the contract. This margin deposit provides collateral for the obligations of the parties to the futures contract.

By depositing margin, which may vary in form depending on the exchange, with the clearing house or broker involved, a market participant may be able to earn interest on its margin funds, thereby increasing the total return that it may realize from an investment in futures contracts.

Futures contracts are traded on organized exchanges, known as “contract markets” in the United States. At any time prior to the expiration of a futures contract, a trader may elect to close out its position by taking an opposite position on the exchange on which the trader obtained the position, subject to the availability of a liquid secondary market. This operates to terminate the position and fix the trader’s profit or loss. Futures contracts are cleared through the facilities of a centralized clearing house and a brokerage firm, referred to as a “futures commission merchant,” which is a member of the clearing house.

Unlike equity securities, futures contracts, by their terms, have stated expirations at a specified point in time prior to expiration. At a specific point in time prior to expiration, trading in a futures contract for the current delivery month will cease. As a result, a market participant wishing to maintain its exposure to a futures contract on a particular commodity or financial instrument with the nearest expiration must close out its position in the expiring contract and establish a new position in the contract for the next delivery month, a process referred to as “rolling.” For example, a market participant with a long position in a futures contract expiring in November who wishes to maintain a position in the nearest delivery month will, as the November contract nears expiration, sell the November contract, which serves to close out the existing long position, and buy a futures contract expiring in December. This will “roll” the November position into a December position, and, when the November contract expires, the market participant will still have a long position in the nearest delivery month.

Futures exchanges and clearing houses in the United States are subject to regulation by the Commodity Futures Trading Commission. Exchanges may adopt rules and take other actions that affect trading, including imposing speculative position limits, maximum price fluctuations and trading halts and suspensions and requiring liquidation of contracts in certain circumstances.

Futures markets outside the United States are generally subject to regulation by comparable regulatory authorities. The structure and nature of trading on non-U.S. exchanges may differ from this description.

The DAX[®] Index

We obtained all information contained in this underlying supplement regarding the DAX[®] Index (Price Return), including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. This information reflects the policies of, and is subject to change by, STOXX Ltd. (“**STOXX**”), the index sponsor. The DAX[®] Index (Price Return) is calculated, maintained and published by STOXX. STOXX has no obligation to continue to publish, and may discontinue publication of, the DAX[®] Index (Price Return) at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the DAX[®] Index (Price Return) in connection with the offer and sale of securities.

In addition, information about the DAX[®] Index (Price Return) may be obtained from other sources including, but not limited to, the DAX[®] Index (Price Return) sponsor’s website. We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the DAX[®] Index (Price Return) is accurate or complete.

The DAX[®] Index (Price Return) is reported by Bloomberg L.P. under the ticker symbol “DAXK.”

The DAX[®] Index (Price Return) comprises the 40 largest companies with the highest turnover on the FWB[®] Frankfurt Stock Exchange. These companies are selected from the continuously traded companies in the Prime Standard segment that meet certain selection criteria. To be listed in the Prime Standard, a company must meet minimum statutory requirements, which include the regular publication of financial reports, and must satisfy additional transparency requirements. The reference date of the DAX[®] Index (Price Return) is December 30, 1987.

The DAX[®] Index (Price Return) is capital-weighted, meaning the weight of any individual issue is proportionate to its respective share in the overall capitalization of all index component issuers. The weight of any single company is capped at 10% of the DAX[®] Index (Price Return) capitalization, measured quarterly. Weighting is based exclusively on the free float portion of the issued share capital of any class of shares involved. Both the number of shares included in the issued share capital and the free float factor are updated on one day each quarter (this date, the “chaining date” and the process by which these updates are made, “chaining”). The DAX[®] Index (Price Return) is a price index, which measures the actual price performance and is only adjusted for income from subscription rights and special distributions.

Methodology of the Index

The Advisory Board for Equity Indices of STOXX

The Advisory Board for Equity Indices (the “**Board**”) advises STOXX on topics related to the DAX[®] Index (Price Return). The Board acts as an advisory body based on the basic principles mentioned and the rules of the guidelines. The Board does not make binding decisions on behalf of STOXX.

The Board consists of STOXX employees and representatives of leading national and international financial institutions. The Board’s meetings usually take place not later than the sixth trading day in March and September. Extraordinary meetings may also be convened.

Free Float

Free float refers to the freely tradable shares of a company that are not held in fixed ownership. The following rules apply to determine the free float:

1. All shareholdings of an owner which, on an accumulated basis, account for at least 5% of a company’s share capital attributed to a class of shares are considered to be non-free float. Shareholdings of an owner also include shareholdings:
 - held by the family of the owner as defined by section 19 of the Market Abuse Regulation;
 - for which a pooling has been arranged in which the owner has an interest;
 - managed or kept in safe custody by a third party for the account of the owner;
 - held by a company which the owner controls as defined by section 290(2) of the German Commercial Code; and
 - subject to a statutory or contractual qualifying period of at least six months.

This does not include shareholdings of:

- asset managers and trust companies;
- funds and pension funds; and
- investment companies or foreign investment companies in their respective special fund assets

insofar as they are held as part of short-term investment strategies and the size of a shareholding does not exceed 25% of a company's share capital. This does not apply to shareholdings held by venture capital companies, government funds or shareholdings held by their financial agencies or supranational funds.

In this context, shares for which the acquirer has at the time of purchase clearly and publicly stated that strategic goals are being pursued and that the intention is to influence the company policies and ongoing business of the company in the long-term are not considered a short-term investment. In addition, shares having been acquired through a public purchase offer will not be considered a short-term investment.

2. Shares of an owner that are subject to a statutory or contractual qualifying period of at least six months with regard to their disposal and shares held by the issuing company (treasury shares) are — irrespective of the size of a shareholding — always considered fixed holdings.
3. In the case of an ongoing takeover, shares that are under the control of the overtaking companies via derivatives will also be considered for the determination of the stock's free float. The derivatives need to be subject to registration and correspondingly registered according to legislation in the German Securities Trading Act ("**WpHG**") and the German Securities Acquisition and Takeover Act ("**WpÜG**").

The various criteria in numbers 1 to 3 are also fully applied to classes of shares that are subject to restrictions of ownership. For the purpose of the determination of the free float as described above, each ISIN under which shares are traded is considered a separate share class.

If STOXX determines and publishes a company's free float within the framework of a scheduled chaining, this free float factor will only be changed or corrected at the next scheduled chaining date. This is also the case if STOXX learns of facts or circumstances following the determination of the free float that would have resulted in the determination of a different free float factor had they been known at the time of the determination.

Index Composition

Selection Criteria

The basic criteria for including companies in the DAX[®] Index (Price Return) are:

- an existing listing on the Regulated Market of the FWB[®] Frankfurt Stock Exchange;
- continuous trading on Deutsche Börse's electronic trading system Xetra[®];
- a minimum free float of 10%;
- legal headquarters or operating headquarters in Germany;
- publication of audited Annual Financial Report prepared according to the requirements of the WpHG;
- publication of audited half-yearly Financial Report (for the first six months of the fiscal year) prepared according to the requirements of WpHG;
- publication of the Quarterly Statement or Quarterly Financial Report for the first and third fiscal quarters;
- no deviations are declared with respect to recommendations C.10 (with sole reference to its applicability to the Chair of the Audit Committee), D.3, D.9, D.10, D.11 of the German Corporate Governance Code;
- a minimum liquidity on the FWB[®] Frankfurt Stock Exchange of an order book volume of 1 billion euros over the past 12 month as of the Ranking List cut-off date or a Turnover Rate of 20% in order for initial eligibility;

and for continued eligibility, an order book volume of 0.8 billion euros over the past 12 month as of the Ranking List cut-off date or a Turnover Rate of 10%; and

- a minimum period since first listing of at least 30 trading days

There is expanded criteria for foreign companies, under which foreign companies must:

- have legal headquarters in the European Union (“EU”) or in a European Free Trade Association (“EFTA”) country; or
- have an operating headquarter in Germany.

Companies that satisfy the prerequisites listed above are selected for inclusion in the DAX® Index (Price Return) based on free float market capitalization. The reporting date for collecting data is the last trading day of the month for which the ranking list is created (the “**Ranking List cut-off date**”). The ranking list is created and published monthly by STOXX.

Creating the Ranking List

To create the ranking list, the parameters relevant for the allocation of a rank, *i.e.*, number of shares, free float factor and volume-weighted average price (“**VWAP**”), are recorded on the Ranking List cut-off date to determine the free float market capitalization for each company. On that date, compliance with the basis criteria is also checked and the EBITDA is collected to determine eligibility.

A VWAP over 20 trading days (20-trading day VWAP) is used to calculate the free float market capitalization. This is calculated as the average value of daily VWAPs based on Xetra® prices of the last 20 trading days in a share class. The 20-trading day VWAP on the last trading day of a month is used to create the ranking list.

The order book volume is the sum of the daily turnover of a class over a period of twelve months. The following special provisions apply:

- if the order book volumes of a company are not available for the whole twelve-month period due to the time of its commencement of trading or its initial listing on one of the transparency standards, the order book volumes of the first 20 trading days are taken away and the remainder of the relevant data is linearly projected for twelve months. This procedure, however, is only applicable to companies that have been traded for at least 30 days as per the reporting date, taking order book volumes of at least ten days into account for projection purposes;
- if a company has changed its trading segment (Open Market, General Standard and Prime Standard) the order book volume from the previous segment is taken into account as of the Ranking List cut-off date following the segment change if it has a total trading history of more than thirty days;
- in the case of a company that is not a component of the DAX® Index (Price Return) at the time the ranking list is compiled, the company must have a positive EBITDA (earnings before interest, taxes, depreciation and amortization) for the two most recent fiscal years as calculated by Refinitiv; and
- in the case of a merger of two companies, the order book volumes of both companies are aggregated, provided that both companies were listed on the FWB® Frankfurt Stock Exchange prior to the merger. A requirement for aggregating order book volumes is that the company or companies that no longer exist are no longer listed on any stock exchange. The order book volumes are aggregated retroactively at this point for the allocation of a rank.

Inclusion in the Ranking List

All of the share classes listed on Regulated Market of the FWB® Frankfurt Stock Exchange are listed on the ranking list. A ranking is given to the share classes that meet the basic criteria outlined above. Companies that are first listed on the FWB® Frankfurt Stock Exchange have to additionally be listed for a minimum of at least 30 trading days. Classes that do not meet the above criteria given are listed on the ranking list but do not receive a ranking. Each ISIN under which shares in a company are traded is considered a separate class in this regard. If a company has several share classes, only the largest and most liquid share class is given a ranking, as measured by a combined metric of market capitalization and order book volume. If the shares classes are evaluated equally based on this metric, the most liquid class receives a ranking.

If subscription rights issued as part of a capital increase are of value on the date of creating the ranking list, the market capitalization shown on the ranking list will be determined in consideration of the capital increase. In this case, an acceptance ratio of 100% is assumed. If the share capital at the end of the subscription period differs from this, the market capitalization will be adjusted accordingly.

For inclusion in the DAX® Index (Price Return), if a company is eligible for inclusion based on its free float market capitalization ranking, but does not meet the EBITDA criterion, the next ranked company in the ranking list that does meet the EBITDA criterion is considered for inclusion.

Exclusion from Ranking

1. Companies that do not meet the necessary liquidity criteria for initial or continued eligibility, as described above, are not ranked.
2. To ensure that the composition of the DAX® Index (Price Return) reflects the market and/or economic reality which it aims to represent and to avoid application of the stated rules leading to misrepresenting results, STOXX reserves the right to exclude certain companies from being ranked on the ranking list. An example of an appropriate reason for exclusion may be that a foreign company has its headquarters in Germany but the focus of its business activity is abroad.

Adjustments to Index Composition

The index composition of the DAX® Index (Price Return) is reviewed quarterly based on the Fast Exit and Fast Entry rules and semi-annually based on the Regular Exit and Regular Entry rules.

The purpose of the review on the basis of the Fast Exit and Fast Entry rules is to account for significant changes in rankings. These changes may occur when companies no longer possess the required size (free float market capitalization), which may arise due to large issues (e.g., major changes in the free float or a steep price drop) and should be taken into consideration promptly in the index.

The selection of companies in the DAX® Index (Price Return) is based on free float market capitalization. The currently valid ranking list always forms the basis for the application of the rules outlined below. The four rules are applied successively.

- **Fast Exit:** a company is replaced if it has a worse rank than the “candidate rank” in free float market capitalization (e.g., greater than 60 in the free float market capitalization criterion in the DAX® Index (Price Return) ranks). It is replaced by the company with the highest free float market capitalization that has the corresponding ranking position for free float market capitalization in the “alternate candidate rank” (e.g., smaller than or equal to in the free float market capitalization criterion in the DAX® Index (Price Return) ranks). If there is still no company that meets these criteria, the company with the highest free float market capitalization is determined as the successor.
- **Fast Entry:** a company is included if it has the same or better rank than the “candidate rank” in the free float market capitalization (e.g., smaller than or equal to rank 33 for the free float market capitalization criterion in the DAX® Index (Price Return) ranks). The company with the lowest free float market capitalization that is ranked worse than the “alternate candidate rank” is excluded (e.g., greater than 47 in the free float market capitalization criterion in the DAX® Index (Price Return) ranks). If there are no companies in the selection index that meet these criteria, the company with the lowest free float market capitalization is removed from the DAX® Index (Price Return).
- **Regular Exit:** a company will be replaced if it has a worse rank than the “candidate rank” in free float market capitalization (e.g., greater than 53 in the free float market capitalization criterion in the DAX® Index (Price Return) ranks). It will be replaced by the company with the highest free float market capitalization that has the corresponding ranking positions in the “alternate candidate rank” (e.g., smaller than or equal to 47 in the free float market capitalization criterion in the DAX® Index (Price Return) ranks). If no successor can be determined, no change takes place.
- **Regular Entry:** a company will be included if it has the same or better rank than the “candidate rank” in the free float market capitalization (e.g., a smaller than or equal to rank 40 for the free float market capitalization criterion in the DAX® Index (Price Return) ranks). The company with the lowest free float market capitalization that is ranked worse than the “alternate candidate rank” will be excluded (e.g., greater than 47 in the free float market capitalization criterion in the DAX® Index (Price Return) ranks). If no alternate candidate can be

determined, no exchange takes place. In exceptional cases, for example, takeovers announced at short notice or significant changes in the free float, STOXX may deviate from rules 1 through 4 mentioned above.

Decisions regarding changes to the composition of the DAX® Index (Price Return) are published after 10 p.m. Central European time on the third trading day in March, June, September and December.

Actions in Case of Shortfalls

A shortfall in the number of constituents may occur in the DAX® Index (Price Return) during the index review. This may occur when a company no longer meets the basic criteria. An example would be a company publicly announcing the discontinuation of the Prime Standard listing. Remaining in the DAX® Index (Price Return) is, therefore, no longer justified. However, this will only take effect in the next regular review. In this case, the company would be removed during the regular review before the application of the four rules above. Consequently, there would be a shortfall in the DAX® Index (Price Return).

If a shortfall exists in the DAX® Index (Price Return), this shortfall is treated as a Fast Exit. Consequently, the Fast Exit rule of the DAX® Index (Price Return) is applied. In this case, the company which caused the shortfall is considered the Fast Exit candidate. A company that, in turn, could be accepted into the DAX® Index (Price Return) is found using the Fast Exit rule.

The DAX® Index (Price Return) is restored to the fixed number of companies before the four rules are applied (Fast Exit, Fast Entry, Regular Exit, Regular Entry). The aim of this is to ensure that the DAX® Index (Price Return) contains the designated number of companies before the review of the DAX® Index (Price Return) is performed.

Extraordinary Index Review

Notwithstanding the rules on ordinary adjustment, extraordinary changes to the composition must be made if the events described below take place. A successor is selected based on the currently applicable, *i.e.*, most recently published ranking list and the rules for an ordinary adjustment. The changes in principle take place after the announcement with a notice period of two trading days.

Insolvency of Companies

- If an insolvency event occurs in relation to a constituent, the securities of the constituent shall be deleted from the DAX® Index (Price Return) based on the traded stock price on its primary market, if available. If the last price is not available, the constituent will be deleted at market close in local currency of 0.001. The constituent shall be extraordinarily replaced. Such replacement shall be announced at 10 p.m. Central European time on the day STOXX became aware of the insolvency event based on publicly available information. The change shall be implemented two trading days after the calendar day of the announcement by STOXX and shall become effective the next trading day after implementation. In case such security has already been announced as a new index constituent or replacement for a current index constituent, the announcement will be revoked, and a new constituent implemented with two trading days' notice. This may lead to the DAX® Index (Price Return) having less constituents than required by index methodology until a replacement is effective.

The securities of a constituent for which an insolvency event occurs are not eligible as an index constituent or replacement index constituent for any future selection, with immediate effect at the date of STOXX's announcement. The respective securities will be kept on the monthly ranking list without receiving a rank. The respective securities may receive a rank again once the proceeding in relation to the insolvency event have been concluded resulting in the continuance of the business operated by the issuer of the security, but not earlier than one calendar year after exclusion became effective.

- An insolvency event shall be deemed to have occurred if STOXX has been informed by the constituent, a national competent authority or a court in writing or through public announcement (other than by entry into a register) that:
 - i. insolvency proceedings over the assets of the constituent will be filed or have been filed for;
 - ii. insolvency proceedings have been opened in relation to the constituent;
 - iii. the constituent seeks or becomes subject to the appointment of an administrator, receiver, trustee, custodian or other similar official for it or for all or substantially all its assets;

- iv. the insolvency proceedings are rejected due to a lack of assets; or
- v. constituents in liquidation, be it as a result of insolvency proceedings or a shareholders' decision or otherwise.
- An insolvency proceeding shall refer to any applicable insolvency, bankruptcy, dissolution, liquidation or winding up proceedings or similar proceedings in relation to the assets of such constituent.

Breach of the Basic Criteria

- Companies no longer meeting the basic criteria necessary in order to remain in the DAX® Index (Price Return) are removed from the DAX® Index (Price Return), where the type of basic criteria the company is breaching determines the timing of removal.
- A breach of one of the following basic criteria leads to an exclusion from the DAX® Index (Price Return) with two days' notice from the date STOXX becomes aware of the breach:
 - i. minimum free float
 - ii. listing on Regulated Market of the FWB® Frankfurt Stock Exchange
 - iii. continuous trading
 - iv. timely publication of audited Annual Financial Report
 - v. timely publication of the half-yearly Financial Report
 - vi. timely publication of the Quarterly Statement or Quarterly Financial Report
- A breach of the timely reporting requirement is given if a company fails to publish after the added grace period:
 - i. the Annual Financial Report within four months from the end of the relevant reporting period
 - ii. the Half-yearly Financial Report within three months from the end of the relevant reporting period
 - iii. the Quarterly Statement or Quarterly Financial Report within 75 days from the end of the relevant reporting period

Additionally, the withdrawal of the required financial reporting or of an audit, when required, after the aforementioned terms is considered equivalent to a breach of the timely reporting requirement.

- A company in breach of the required financial reporting criteria will remain on the existing ranking list until the end of the current month, but it will not be eligible for index membership. If a company succeeds in publishing the required financial reporting after its exclusion from the DAX® Index (Price Return), it can be ranked on the upcoming ranking list again, provided it fulfils the necessary criteria. The standard notice period of two trading days will be extended such that the effective date does not conflict with the monthly Ranking List cut-off date (t) and publication dates or the review implementation process. The effective date of an extraordinary index change would be modified as follows:
 - i. On any month: an ad hoc correction that would be effective after t and before t+6 is postponed being effective on t+6 based on the ranking list published on t+3.
 - ii. On review months only: an ad hoc correction that would be effective after the Thursday prior to the second Friday and before the review effective day is postponed so to become effective on the review effective day.
 - iii. Any information received on the review implementation day or the preceding day is processed to be effective on the second or the first trading day after the review effective day.
- A breach of the required recommendations of German Corporate Governance Code and the required minimum liquidity, which are monitored on a monthly basis as part of the ranking list creation process, will leave the respective company without a rank until the next index review. The company will then be removed from the DAX® Index (Price Return) during the next index review process.
- In all aforementioned cases, the company in breach is replaced by applying the Fast Exit rule.

Conversion of Preferred Shares into Ordinary Shares

If the ordinary shares are already included in the DAX® Index (Price Return), then no chaining is carried out. The number of shares remains unchanged until the next chaining date.

If preferred shares are already included in the DAX® Index (Price Return), then the ordinary shares are included in the DAX® Index (Price Return), taking the place of the preferred shares. The number of ordinary shares and the free float factor are adopted from the class of the preferred shares, and are subject to adjustment only on the next regular chaining date. If the conversion occurs in the ratio 1:1, no further amendments will be carried out. In all other cases, the mathematical price difference will be balanced by the C_i factor described under “Index Calculation” below.

Extraordinary Free Float Adjustments

- If the free float factor of a company included in the DAX® Index (Price Return) changes by more than 10 percentage points during the period between two regular chaining dates due to a corporate measure (e.g., subscription right or changes in share capital), the free float factor will be updated extraordinarily. The rule does not apply if the corporate measure is deemed market capitalization neutral. STOXX will announce the new free float factor at least two trading days before the change becomes effective.
- Free float adjustments resulting from ongoing acquisitions (acquisitions as defined by the WpÜG) will be made extraordinarily in the DAX® Index (Price Return) after the initial announcement and the final announcement at the end of the offer period or after the tender offer cancellation. Index changes will be announced two trading days before the change becomes effective. Shares held in fixed ownership will remain unchanged until further information, i.e., according to the WpHG or other official sources, is available.
- The extraordinary adjustment in each case will be carried out as described above, with the only difference that the index composition will not be changed and only the free float factor of the affected company will be updated.

Adjustments in the Case of Mergers and Acquisitions

Two possible scenarios may occur in this context:

If the absorbing or emerging company meets the basis criteria for inclusion in the DAX® Index (Price Return), then as soon as the free float of the absorbed company falls below 10%, the company is removed from the DAX® Index (Price Return). The absorbed company is replaced by the absorbing or emerging company on the same date.

If the absorbing company is already included in the DAX® Index (Price Return) or does not meet the basis criteria for inclusion in the DAX® Index (Price Return), then as soon as the free float of the absorbed company falls below 10%, the company is removed from the DAX® Index (Price Return). On the same date, the absorbed company is replaced by a new company.

Conversion into Tendered Shares

The conversion of tendered shares is subject to the following process during the period between the first offer and the closing of the transaction:

If the company being taken over is a component in the DAX® Index (Price Return), the company's shares in the DAX® Index (Price Return) will be replaced by the tendered shares without chaining if the acceptance rate is greater than 50% (according to section 23 WpÜG). The number of shares and the free float factor are assumed by the replaced shares and modified during the next regular chaining. A requirement for this replacement is that the tendered shares, as well as the shares that the tendered shares will be converted into, fulfill the basis criteria to remain in the DAX® Index (Price Return) and the new or acquiring company is not included in the DAX® Index (Price Return).

If the takeover bid or mandatory offer fails, then the shares tendered for exchange shall be removed from the DAX® Index (Price Return) without chaining and replaced by the shares that were previously included in the DAX® Index (Price Return).

Index Calculation

The DAX® Index (Price Return) is weighted by market capitalization; however, only freely available and tradable shares (“free float”) are taken into account. The DAX® Index (Price Return) is a price index, which measures the actual price performance and is only adjusted for income from subscription rights and special distributions.

The Index Formula

The DAX® Index (Price Return) uses the Laspeyres formula set out below:

$$Index_t = K_t \times \frac{\sum p_{it} \times ff_{iT} \times q_{iT} \times c_{it}}{\sum p_{i0} \times q_{i0}} \times Base$$

whereby:

c_{it}	=	Adjustment factor of company i at time t
ff_{iT}	=	Free float factor of share class i at time T
n	=	Number of shares in the DAX® Index (Price Return)
p_{i0}	=	Closing price of share i on the trading day before the first inclusion in the DAX® Index (Price Return)
p_{iT}	=	Price of share i at time t
q_{i0}	=	Number of shares of company i on the trading day before the first inclusion in the DAX® Index (Price Return)
q_{iT}	=	Number of shares of company i at time T
t	=	Calculation time of the DAX® Index (Price Return)
K_T	=	The chaining factor valid as of chaining date T
T	=	Date of the last chaining
$Base$	=	Value of the DAX® Index (Price Return) at base date

The formula set out below is equivalent in analytic terms, but designed to achieve relative weighting:

$$Index_t = K_t \frac{\sum_{i=1}^n p_{it} \left(K_T \frac{ff_{iT} q_{iT}}{\sum_{i=1}^n q_{i0}} 100 C_{it} \right)}{\sum_{i=1}^n p_{i0} \frac{q_{i0}}{\sum_{i=1}^n q_{i0}} 100} Base = \frac{\sum_{i=1}^n p_{it} F_i}{A} Base$$

$$whereby: A = \frac{\sum_{i=1}^n p_{i0} q_{i0} 100}{\sum_{i=1}^n q_{i0}}$$

$$and: F_i = K_t \frac{ff_{iT} q_{iT}}{\sum_{i=1}^n q_{i0}} 100 C_{it}$$

The DAX® Index (Price Return) calculation can be reproduced in simplified terms by using the expression F_i :

- Multiply the current price by the respective F_i weighting factor;

- Take the sum of these products; and
- Divide this by the base value (A) which remains constant until a modification in the index composition occurs.

The F_i factors provide information on the number of shares required from each company to track the underlying index portfolio.

Calculation Frequency

Index calculation is performed on every trading day of FWB[®] Frankfurt Stock Exchange, using prices traded on Deutsche Börse's electronic trading system Xetra[®] or Börse Frankfurt, whereby the last determined prices are used. The DAX[®] Index (Price Return) is calculated once a day, at the close of trading. The DAX[®] Index (Price Return) is distributed as soon as current prices are available for all companies included in the DAX[®] Index (Price Return) (but no later than 9:06 a.m.). If no opening prices for individual companies are available, the respective closing prices of the previous day are used instead to calculate the DAX[®] Index (Price Return).

In the event of a suspension during trading hours, the last price determined before such a suspension is used for all subsequent computations. If such suspension occurs before the start of trading, the closing price of the previous day is taken instead. The "official" closing index level is calculated using the respective closing prices (or last prices) established on Xetra[®] or Börse Frankfurt.

Adjustments and Corrections

The DAX[®] Index (Price Return) is only adjusted for income from subscription rights and special distributions.

STOXX corrects a calculation error without delay on the dissemination day it occurred, provided that STOXX becomes aware of such calculation error before 3:30 p.m. Central European time of that dissemination day and insofar as technically and operationally feasible. STOXX does not change intraday index composition of an index. If STOXX became aware of a calculation error at or after 3:30 p.m. Central European time aims at correcting the calculations errors as of the end of the next dissemination day, including corrections to index constituents. STOXX amends without undue delay previous incorrect index values or input data only if they are required for the subsequent index values calculation. Incorrect real-time index values disseminated before the effective time of the correction are not restated.

The Dow Jones Industrial Average®

We obtained all information contained in this underlying supplement regarding the Dow Jones Industrial Average®, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. That information reflects the policies of, and is subject to change by, S&P Dow Jones Indices LLC (“**S&P Dow Jones**”), the index sponsor. The Dow Jones Industrial Average® is an index calculated, published and disseminated by S&P Dow Jones. S&P Dow Jones has no obligation to continue to publish, and may discontinue publication of, the Dow Jones Industrial Average® at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the Dow Jones Industrial Average® in connection with the offer and sale of securities.

In addition, information about the Dow Jones Industrial Average® may be obtained from other sources including, but not limited to, the Dow Jones Industrial Average® sponsor’s website (including information regarding the sector weightings of the Dow Jones Industrial Average®). We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the Dow Jones Industrial Average® is accurate or complete.

The Dow Jones Industrial Average® is reported by Bloomberg L.P. under the ticker symbol “INDU.”

General

The Dow Jones Industrial Average® is a price-weighted index that measures the performance of 30 U.S. blue-chip companies. Except for the Global Industry Classification Standard (“**GICS**”) transportation industry group from the industrials sector and the utilities sector, the Dow Jones Industrial Average® includes constituents from a variety of sectors.

The Dow Jones Industrial Average® is price-weighted rather than market capitalization-weighted, which means that weightings are based only on changes in the stocks’ prices, rather than by both price changes and changes in the number of shares outstanding. The value of the Dow Jones Industrial Average® is the sum of the primary exchange prices of each of the 30 component stocks included in the Dow Jones Industrial Average® divided by a divisor. The divisor used to calculate the price-weighted average of the Dow Jones Industrial Average® is not simply the number of component stocks; rather, the divisor is adjusted to smooth out the effects of price-impacting corporate actions, including price adjustments, special dividends, stock splits and rights offerings. The index divisor will also adjust in the event of an addition to or deletion from the Dow Jones Industrial Average®.

Index Construction and Maintenance

The Dow Jones Industrial Average® is maintained by a committee, which is currently composed of three representatives of S&P Dow Jones and two representatives of *The Wall Street Journal* (the “**Averages Committee**”). The Averages Committee meets regularly. At each meeting, the Averages Committee reviews pending corporate actions that may affect constituents of the Dow Jones Industrial Average®, statistics comparing the composition of the indices to the market, companies that are being considered as candidates for addition to an index, and any significant market events. In addition, the Averages Committee may revise index policy covering rules for selecting companies, treatment of dividends, share counts or other matters.

The index universe consists of securities in the S&P 500® Index, excluding stocks classified under GICS® code 2030 (Transportation) and 55 (Utilities). While stock selection is not governed by quantitative rules, a stock typically is added only if the company has an excellent reputation, demonstrates sustained growth and is of interest to a large number of investors. Since the Dow Jones Industrial Average® is price-weighted, the Averages Committee evaluates stock price when considering a company for inclusion. The Averages Committee monitors whether the highest-priced stock in the Dow Jones Industrial Average® has a price more than 10 times that of the lowest. Maintaining adequate sector representation within the Dow Jones Industrial Average® is also a consideration in the selection process for the Dow Jones Industrial Average®. Companies should be incorporated and headquartered in the United States, and a plurality of revenues should be derived from the United States.

Changes to the Dow Jones Industrial Average® are made on an as-needed basis. There is no annual or semi-annual reconstruction. Rather, changes in response to corporate actions and market developments can be made at any time. Constituent changes are typically announced one to five days before they are scheduled to be implemented.

Multiple Share Classes. Each company in the Dow Jones Industrial Average® is represented once by the primary listing, which is generally the most liquid share line.

Other Adjustments. In cases where there is no achievable market price for a stock being deleted, it can be removed at a zero or minimal price at the discretion of the Averages Committee, in recognition of the constraints faced by investors in trading bankrupt or suspended stocks.

The table below summarizes the treatment of certain corporate actions.

Corporate Action	Treatment
Company addition/deletion	<p data-bbox="574 359 732 384"><u>Addition Only</u></p> <p data-bbox="574 411 1373 499">A stock is added to the Dow Jones Industrial Average® at a weight determined by the price of the added stock relative to all other index constituents. There is a divisor adjustment.</p>
	<p data-bbox="574 527 732 552"><u>Deletion Only</u></p> <p data-bbox="574 579 1414 667">The weights of all stocks in the Dow Jones Industrial Average® will proportionally change but relative weights will stay the same. The index divisor will change.</p>
Split/reverse split	Stock price is adjusted by the split ratio. Shares outstanding are not adjusted by the split ratio. There is a divisor adjustment.
Spin-off	Any potential impacts on index constituents from a spin-off are evaluated by the Averages Committee on a case by case basis. The price of the parent company is adjusted to the price of the parent company <i>minus</i> (the price of the spun-off company/share exchange ratio). The index divisor adjusts simultaneously.
Ordinary dividend	When a company pays an ordinary cash dividend, the Dow Jones Industrial Average® does not make any adjustments to the price or shares of the stock. As a result, there are no divisor adjustments to the Dow Jones Industrial Average®.
Special dividend	The stock price is adjusted by the amount of the dividend. There is a divisor adjustment.
Rights offering	All rights offerings that are in the money on the ex-date are applied under the assumption the rights are fully subscribed. The stock price is adjusted by the value of the rights. There is a divisor adjustment.

The Dow Jones U.S. Real Estate Index

We obtained all information contained in this underlying supplement regarding the Dow Jones U.S. Real Estate Index, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. That information reflects the policies of, and is subject to change by, S&P Dow Jones Indices LLC (“**S&P Dow Jones**”), the index sponsor. The Dow Jones U.S. Real Estate Index is an index calculated, published and disseminated by S&P Dow Jones. S&P Dow Jones has no obligation to continue to publish, and may discontinue publication of, the Dow Jones U.S. Real Estate Index at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the Dow Jones U.S. Real Estate Index in connection with the offer and sale of securities.

In addition, information about the Dow Jones U.S. Real Estate Index may be obtained from other sources including, but not limited to, the Dow Jones U.S. Real Estate Index sponsor’s website. We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the Dow Jones U.S. Real Estate Index is accurate or complete.

The Dow Jones U.S. Real Estate Index is reported by Bloomberg L.P. under the ticker symbol “DJUSRE.”

General

The Dow Jones U.S. Real Estate Index is designed to track the performance of real estate investment trusts (“**REITs**”) and other companies that invest directly or indirectly in real estate through development, management, or ownership, including property agencies. REITs are passive investment vehicles that invest primarily in income-producing real estate or real estate-related loans and interests.

Background of the Dow Jones U.S. Real Estate Index

The Dow Jones U.S. Real Estate Index is one of the sector indices of the Dow Jones U.S. IndexSM, which measures the performance of the U.S. stock market and is composed of 95% of U.S. stocks by float-adjusted market capitalization, subject to minimum liquidity requirements. The sector indices are constructed by categorizing the constituent stocks of the parent index (Dow Jones U.S. Index) into industries, supersectors, sectors and subsectors, as defined by a proprietary classification system. A separate index is maintained for each group at each of the four levels. Companies are classified into subsectors, the most specific level of classification, based on their primary source of revenue. The subsectors are rolled up into sectors, which in turn are rolled up into supersectors and finally into industries, the broadest level of classification.

Composition of the Dow Jones U.S. Real Estate Index

The eligible universe for inclusion in the Dow Jones U.S. Index (the parent index) is all stocks traded on the major U.S. stock exchanges, minus any non-common issues and illiquid stocks. To be included in the Dow Jones U.S. Real Estate Index, the stock must be included in the Dow Jones U.S. Index and the issuer of the component securities must be classified in the Real Estate supersector of industry classifications. The Real Estate supersector—part of the financials industry classification—is composed of two sectors.

The Real Estate Investment & Services sector consists of real estate holding and development companies that invest directly or indirectly in real estate through development, investment, or ownership; and real estate services companies that provide services to real estate companies but do not own the properties themselves, including agencies, brokers, leasing companies, management companies, and advisory services. The Real Estate Investment Trusts sector consists of REITs or listed property trusts (“**LPTs**”) that invest in office, industrial, retail, residential, specialty (e.g., health care), hotel or lodging properties or that are directly involved in lending money to real estate owners and operators or indirectly through the purchase of mortgages or mortgage-backed securities.

Eligible Securities. Securities may be represented by local listings (shares listed on exchanges in their country of domicile), Depositary Receipts (“**DRs**”), and other types of offshore listings that trade on major exchanges, screened for share class and liquidity. Index candidates must be common shares or other securities that have the characteristics of common equities. All classes of common shares, both fully and partially paid, are eligible. Temporary issues arising from corporate actions, such as “when-issued shares,” are considered on a case-by-case basis when necessary to maintain continuity in a company’s index membership. REITs, LPTs and similar real-property-owning pass-through structures taxed as REITs by their domiciles are also eligible.

Ineligible Securities. The following shares are not eligible for inclusion: convertible bonds, equity warrants, exchange-traded funds, exchange-traded notes, closed-end funds, mutual fund shares, investment trusts, unit trusts, preferred stocks that provide a guaranteed fixed return, convertible preferred stocks, fixed-dividend shares, business development companies, limited liability companies, limited partnerships, master limited partnerships and special purpose acquisition companies (“**SPACs**”).

Multiple Share Classes. All publicly listed multiple share class lines are eligible for index inclusion. A separate investable weight factor (“**IWF**”), which is an adjustment factor that accounts for publicly available shares of a company, is calculated for each class and the class is included, provided it meets eligibility criteria and foreign investors may hold shares in the class.

Liquidity. Each stock must meet two separate liquidity criteria to be considered eligible for inclusion:

- **12-Month Median Value Traded Ratio (“**MVTR**”).** Stocks must have a MVTR of at least 20%. Current constituents remain eligible if they have a MVTR of at least 14%. This ratio is calculated by taking the median daily value traded amount for each of the 12 months preceding the rebalancing reference date, multiplying the amount by the number of days that the stock traded during that month, and then dividing by its end-of-month float-adjusted market capitalization. The sum of the 12 monthly values is the MVTR for that stock. If a stock has traded for less than 12 months, the average of the available monthly values is taken and multiplied by 12.
- **6-Month Median Daily Value Traded (“**MDVT**”).** Stocks must have a MDVT over the six months prior to the rebalancing reference date of at least \$250,000. Current constituents remain eligible if they have a MDVT of at least \$175,000. If a stock has traded for less than six months, the MDVT amount for as long as the stock has been trading is used.

Calculation of the Dow Jones U.S. Real Estate Index

The Dow Jones U.S. Real Estate Index is a float-adjusted market capitalization-weighted index and is calculated by means of the divisor methodology. On any given day, the index value of the Dow Jones U.S. Real Estate Index is the total float-adjusted market capitalization of its constituents divided by its divisor. The float-adjusted market capitalization reflects the price of each stock in the Dow Jones U.S. Real Estate Index multiplied by the number of shares used in the index value calculation. The key to index maintenance is the adjustment of the divisor. Index maintenance – reflecting changes in shares outstanding, corporate actions, addition or deletion of stocks to the index – should not change the level of the Dow Jones U.S. Real Estate Index. This is accomplished with an adjustment to the divisor. Any change to the stocks in the Dow Jones U.S. Real Estate Index that alters the total market value of the Dow Jones U.S. Real Estate Index while holding stock prices constant will require a divisor adjustment.

Maintenance of the Dow Jones U.S. Real Estate Index

Annual Reconstitution. The Dow Jones U.S. Real Estate Index is reconstituted annually in September. The process includes the review of all stocks in their respective markets to determine eligibility according to the existing criteria. The reference date for data used in the annual reconstitution is the last business day in July. In addition, the IWF for each stock is reviewed and updated as needed. Changes are implemented at the opening of trading on the Monday following the third Friday of September.

Quarterly Updates. Changes to shares and IWFs are implemented at the open of trading on the Monday following the third Friday of March, June and December. As part of the quarterly update, size classification is reviewed for spin-offs, mergers and acquisitions and quarterly additions, with no changes for the entire universe. The reference date for size classification is five weeks prior to the rebalancing effective date.

Fast Track Initial Public Offerings. Certain large initial public offerings (“**IPOs**”) may be eligible for fast track entry, subject to certain conditions:

Only newly public IPOs and IPO direct placement listings are considered eligible for fast track entry. Formerly bankrupt companies that switch from over-the-counter exchange (“**OTC**”) or a non-covered exchange to an S&P Dow Jones covered exchange are ineligible.

Fast track IPO additions must meet a minimum float-adjusted market capitalization threshold of U.S. \$2 billion, calculated using the shares offered (excluding over-allotment options) and the closing price on the first day of trading on an eligible exchange. The threshold level is reviewed from time to time and updated as needed to assure consistency with market conditions.

Fast track direct placement listing IPO additions must meet a minimum FMC threshold of U.S. \$2 billion, calculated using the shares available to the public as determined by its IWF, and the closing price on the first day of trading on an eligible exchange.

In addition, IPOs must meet the other applicable index eligibility rules excepting liquidity requirements. If the necessary public information is available, S&P Dow Jones verifies that the fast track conditions are met. Once S&P Dow Jones announces that an IPO is eligible, it is added with five business days' notice. At the committee's discretion, fast track IPO additions eligible to be added during a quarterly rebalancing freeze period may instead be added on the rebalancing effective date.

Spinoffs. Spin-offs from current index constituents are eligible for index inclusion and are included in the index on their ex-dates. Spin-offs are assigned the same size and style as the parent company at the time of the event. All spin-off sizes are evaluated at the next quarterly review.

Additions. Except for quarterly additions, IPOs, and spin-offs, there are no additions between rebalancings. Any stocks considered for addition at a quarterly rebalancing must have an FMC larger than the smallest stock included in the given market index at the time of the previous reconstitution.

Deletions. Between rebalancings, a company can be deleted from the Dow Jones U.S. Real Estate Index due to corporate events such as mergers, acquisitions, takeovers, delistings or bankruptcies. A company is deleted from the index if it is involved in a merger, acquisition, or significant restructuring such that it no longer meets the eligibility criteria. If a company's shares are no longer available or are no longer trading, the company is deleted from the Dow Jones U.S. Real Estate Index as soon as reasonably possible provided that five days' notice is given. In the event the information of delisting, bankruptcy or ineligible status becomes public after the fact, the stock may be removed with a one-day notice period.

Corporate Actions. Corporate actions (such as stock splits, stock dividends, spin-offs, and rights offerings) are applied after the close of trading on the day prior to the ex-date. Share changes resulting from exchange offers are applied on the ex-date.

The FTSE[®] 100 Index

We obtained all information contained in this underlying supplement regarding the FTSE[®] 100 Index, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. That information reflects the policies of, and is subject to change by, FTSE Russell (“**FTSE**”), the index sponsor. FTSE is a wholly owned subsidiary of the London Stock Exchange Group plc (the “**LSEG**”). The FTSE[®] 100 Index is an index calculated, published and disseminated by FTSE. FTSE has no obligation to continue to publish, and may discontinue publication of, the FTSE[®] 100 Index at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the FTSE[®] 100 Index in connection with the offer and sale of securities.

In addition, information about the FTSE[®] 100 Index may be obtained from other sources including, but not limited to, the FTSE[®] 100 Index sponsor’s website (including information regarding (i) the FTSE[®] 100 Index’s top five constituents and their respective weightings and (ii) the FTSE[®] 100 Index’s sector weightings). We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the FTSE[®] 100 Index is accurate or complete.

The FTSE[®] 100 Index is reported by Bloomberg L.P. under the ticker symbol “UKX.”

General

The FTSE[®] 100 Index measures the composite price performance of stocks of the 100 largest companies (determined on the basis of market capitalization) traded on the London Stock Exchange (the “**LSE**”). Publication of the FTSE[®] 100 Index began in January 1984.

Composition of the FTSE[®] 100 Index

The 100 stocks included in the FTSE[®] 100 Index (the “**FTSE Underlying Stocks**”) were selected from a reference group of stocks of U.K. companies trading on the LSE that were selected by excluding certain stocks that have low liquidity based on public float, accuracy and reliability of prices, size and number of trading days. The FTSE Underlying Stocks were selected from this reference group by selecting 100 stocks with the largest market value. Where there are multiple lines of listed equity capital in a company, all are included and priced separately, provided that the secondary line’s full market capitalization (i.e. before the application of any investability weightings), is greater than 25% of the full market capitalization of the company’s principal line and the secondary line satisfies the eligibility rules and screens in its own right in all respects. A list of the issuers of the FTSE Underlying Stocks is available from FTSE.

A company will be considered a U.K. company if it is U.K. incorporated, the company has its sole listing in the United Kingdom and the company has a minimum free float of 10%. If a company is not incorporated in the U.K., the company will be eligible to be considered a U.K. company if it publicly acknowledges adherence to the principles of the UK Corporate Governance Code, pre-emption rights and the UK Takeover Code as far as practicable, and it has a minimum free float of 25%. A company will be allocated to a single country.

Companies are required to have greater than 5% of the company’s voting rights (aggregated across all of its equity securities, including, where identifiable, those that are not listed or trading) in the hands of unrestricted shareholders in order to be eligible for index inclusion. The voting rights screen is applied to any potential new constituents on a quarterly basis, and existing constituents will be tested on an annual basis in conjunction with the June review.

The FTSE[®] 100 Index is overseen and reviewed quarterly by the FTSE Russell Europe, Middle East & Africa Regional Equity Advisory Committee (the “**Index Steering Committee**”) in order to maintain continuity in the level. The Index Steering Committee undertakes the reviews of the FTSE[®] 100 Index and ensures that constituent changes and index calculations are made in accordance with the ground rules of the FTSE[®] 100 Index. The FTSE[®] 100 Index is reviewed on a quarterly basis in March, June, September and December. Each review is based on data from the close of business on the Tuesday before the first Friday of the review month. Any constituent changes are implemented after the close of business on the third Friday of the review month (i.e. effective Monday), following the expiry of the ICE Futures Europe futures and options contracts.

The FTSE Underlying Stocks may be replaced, if necessary, in accordance with deletion/addition rules that provide generally for the removal and replacement of a stock from the FTSE[®] 100 Index if such stock is delisted or its issuer is subject to a takeover offer that has been declared unconditional or it has ceased, in the opinion of the Index Steering Committee, to be a viable component of the FTSE[®] 100 Index. To maintain continuity, a stock will be added at the quarterly review if it has risen to 90th place or above and a stock will be deleted if at the quarterly review it has fallen to 111th place or below, in each case ranked on the basis of market capitalization. A constant number of constituents will be

maintained for the FTSE® 100 Index. Where a greater number of companies qualify to be inserted in the FTSE® 100 Index than those qualifying to be deleted, the lowest ranking constituents presently included in the FTSE® 100 Index will be deleted to ensure that an equal number of companies are inserted and deleted at the periodic review. Likewise, where a greater number of companies qualify to be deleted than those qualifying to be inserted, the securities of the highest ranking companies which are presently not included in the FTSE® 100 Index will be inserted to match the number of companies being deleted at the periodic review.

Companies that are large enough to be constituents of the FTSE® 100 Index but do not pass the liquidity test are excluded. They will remain ineligible until the next annual review in June when they will be re-tested against all eligibility screens.

Calculation of the FTSE® 100 Index

The FTSE® 100 Index is an arithmetic weighted index where the weights are the market capitalization of each FTSE Underlying Stock. The FTSE® 100 Index is calculated by summing the free float adjusted market values (or capitalizations) of all FTSE Underlying Stocks within the index divided by the divisor. On the base date, the divisor is calculated as the sum of the market capitalizations of the FTSE Underlying Stocks divided by the initial index value of 1,000. The divisor is subsequently adjusted for any capital changes in the FTSE Underlying Stocks. In order to minimize and/or prevent discontinuities in the FTSE® 100 Index in the event of a corporate action or change in constituents, adjustments are made to the prices used to calculate the FTSE® 100 Index with the goal of ensuring that the changes in the FTSE® 100 Index between two consecutive dates reflects only market movements rather than including change due to the impact of corporate actions or constituent changes. These adjustments are made in an attempt to ensure that the values of the FTSE® 100 Index remain comparable over time and that changes in the level of the FTSE® 100 Index properly reflect the change in value of a portfolio of FTSE Underlying Stocks with weights the same as in the FTSE® 100 Index.

Corporate Events Affecting the FTSE® 100 Index

FTSE applies corporate actions to the FTSE® 100 Index on a daily basis. FTSE has stated as general principles that the treatment of corporate events (a) should reflect how such events are likely to be dealt with in investment portfolios to maintain the portfolio structure in line with the target set out in the index objective and index methodology and (b) should normally be designed to minimize the trading activity required by investors to match the index performance. No assurance can be provided that corporate actions and events will be treated by FTSE in a manner consistent with its statement of general principles.

In addition, FTSE has established guidance for the treatment of corporation actions and events, including, but not limited to, dividends, capital repayments, companies converting to a REIT structure, share buybacks, rights issues, mergers, acquisitions, tender offers, split-offs, spin-offs, bankruptcies, insolvencies, liquidations and trading suspensions. However, because of the complexities involved in some cases, those guidelines are not definitive rules that will determine FTSE's actions in all circumstances. FTSE reserves the right to determine the most appropriate method of implementation for any corporate event which is not covered by those guidelines or which is of a complex nature.

The MSCI Indices

We obtained all information contained in this underlying supplement regarding the MSCI ACWI Index[®], the MSCI EAFE Index[®] and the MSCI Emerging Markets IndexSM (each, an “**MSCI Index**” and collectively, the “**MSCI Indices**”), including, without limitation, their make-up, method of calculation and changes in their components, from publicly available information. That information reflects the policies of, and is subject to change by, MSCI Inc. (“**MSCI**”), the index sponsor. MSCI has no obligation to continue to publish, and may discontinue publication of, the MSCI Indices at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the MSCI Indices in connection with the offer and sale of securities.

In addition, information about the MSCI Indices may be obtained from other sources including, but not limited to, the MSCI Indices sponsor’s website (including information regarding (i) the sector weightings and (ii) the country weightings for the MSCI Indices). We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the MSCI Indices is accurate or complete.

The MSCI ACWI Index[®]

The MSCI ACWI Index[®] is a free float-adjusted market capitalization index compiled by MSCI that is designed to measure equity market performance in both the global developed and emerging markets. As of the date of this underlying supplement, the following country indices are included in the MSCI ACWI Index[®]: (i) the following developed market country indices: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States; and (ii) the following emerging market country indices: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Kuwait, Malaysia, Mexico, Peru, the Philippines, Poland, Qatar, Saudi Arabia, South Africa, South Korea, Taiwan, Thailand, Turkey and the United Arab Emirates. MSCI is under no obligation to continue to include these country indices. The component country indices included within the MSCI ACWI Index[®] are a sampling of equity securities across industry groups in such country’s equity markets. The MSCI ACWI Index[®] is calculated in U.S. dollars, is an MSCI International Index and is part of the MSCI Global Investable Market Indices, the methodology of which is discussed below. For purposes of the below methodology, all of the country indices included in the MSCI ACWI Index[®] are classified either as developed market indices or emerging market indices. In addition, the MSCI ACWI Index[®] is considered a “standard” index, which means it consists of eligible large- and mid-capitalization stocks, as determined by MSCI. The U.S. dollar price return version of the MSCI ACWI Index[®] is reported by Bloomberg L.P. under the ticker symbol “MXWD.”

The MSCI EAFE Index[®]

The MSCI EAFE Index[®] is a free float-adjusted market capitalization index compiled by MSCI that is designed to measure developed market equity performance, excluding the United States and Canada. As of the date of this underlying supplement, the following developed market country indices are included in the MSCI EAFE Index[®]: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland and the United Kingdom. MSCI is under no obligation to continue to include these country indices. The component country indices included within the MSCI EAFE Index[®] are a sampling of equity securities across industry groups in such country’s equity markets. The MSCI EAFE Index[®] is calculated in U.S. dollars, is an MSCI International Index and is part of the MSCI Global Investable Market Indices, the methodology of which is discussed below. For purposes of the below methodology, all of the country indices included in the MSCI EAFE Index[®] are classified as developed market indices. In addition, the MSCI EAFE Index[®] is considered a “standard” index, which means it consists of eligible large- and mid-capitalization stocks, as determined by MSCI. The U.S. dollar price return version of the MSCI EAFE Index[®] is reported by Bloomberg L.P. under the ticker symbol “MXEA.”

The MSCI Emerging Markets IndexSM

The MSCI Emerging Markets IndexSM is a free float-adjusted market capitalization index compiled by MSCI that is designed to measure equity market performance in the global emerging markets. As of the date of this underlying supplement, the following emerging market country indices are included in the MSCI Emerging Markets IndexSM: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Kuwait, Malaysia, Mexico, Peru, the Philippines, Poland, Qatar, Saudi Arabia, South Africa, South Korea, Taiwan, Thailand, Turkey and the United Arab Emirates. MSCI is under no obligation to continue to include these country indices. The component country indices included within the MSCI Emerging Markets IndexSM are a sampling of equity securities across industry groups in such country’s equity markets. The MSCI Emerging Markets IndexSM is calculated in U.S. dollars, is an MSCI International

Index and is part of the MSCI Global Investable Market Indices, the methodology of which is discussed below. For purposes of the below methodology, all of the country indices included in the MSCI Emerging Markets IndexSM are classified as emerging market indices. In addition, the MSCI Emerging Markets IndexSM is considered a “standard” index, which means it consists of eligible large- and mid-capitalization stocks, as determined by MSCI. The U.S. dollar price return version of the MSCI Emerging Markets IndexSM is reported by Bloomberg L.P. under the ticker symbol “MXEF.”

Constructing the MSCI Indices

The MSCI Indices are constructed and maintained at an individual market level. MSCI undertakes an index construction process, which involves: (i) defining the equity universe for each market; (ii) determining the market investable equity universe for each market; (iii) determining market capitalization size segments for each market; (iv) applying index continuity rules for the Standard Index; and (v) classifying securities under the Global Industry Classification Standard (the “**GICS**®”).

Defining the Equity Universe

(i) **Identifying Eligible Equity Securities:** All listed equity securities, including real estate investment trusts (“**REITs**”) and certain income trusts in Canada, are eligible for inclusion in the equity universe. Preferred shares that exhibit characteristics of equity securities and stapled securities each of the underlying components of which exhibit characteristics of equity securities are also eligible for inclusion in the equity universe. Limited partnerships, limited liability companies and business trusts, which are listed in the United States and are not structured to be taxed as limited partnerships, are likewise eligible for inclusion in the equity universe. Conversely, mutual funds, exchange-traded funds (“**ETFs**”), equity derivatives and most investment trusts are not eligible for inclusion in the equity universe.

(ii) **Country Classification of Eligible Securities:** The equity universe initially looks at securities listed in any of the countries in the MSCI Global Index Series, which will be classified into market categories, including Developed Markets (“**DM**”) and Emerging Markets (“**EM**”). Each company and its securities (*i.e.*, share classes) are classified in one and only one country, which allows for a distinctive sorting of each company by its respective country.

Determining the Market Investable Equity Universes

A market investable equity universe for a market is derived by (i) identifying eligible listings for each security in the equity universe; and (ii) applying investability screens to individual companies and securities in the equity universe that are classified in that market. A market is equivalent to a single country, except in DM Europe, where all DM countries in Europe are aggregated into a single market for index construction purposes. Subsequently, individual DM Europe country indices within the MSCI Europe Index are derived from the constituents of the MSCI Europe Index under the global investable market indices methodology.

The global investable equity universe is the aggregation of all market investable equity universes.

- (i) **Identifying Eligible Listings:** A security may have a listing that trades in the country where it is classified (a “**local listing**”) and/or a listing that trades in a different country (a “**foreign listing**”). A security may be represented by either a local listing or a foreign listing (including a depositary receipt) in the global investable equity universe as determined by MSCI. A security may be represented by a foreign listing only if the security is classified in a country that meets certain foreign listing materiality requirements, and the security’s foreign listing is traded on an eligible stock exchange of a DM country if the security is classified in a DM country or, if the security is classified in an EM country, an eligible stock exchange of a DM country or an EM country.
- (ii) **Applying Investability Screens:** Some of the investability requirements are applied at the individual security level and some at the overall company level, represented by the aggregation of individual securities of the company. As such, the inclusion or exclusion of one security does not imply the automatic inclusion or exclusion of other securities of the same company.

The investability screens used to determine the investable equity universe in each market are as follows:

- (a) **Equity Universe Minimum Size Requirement:** This investability screen is applied at the company level. In order to be included in a market investable equity universe, a company must have the required minimum full market capitalization. A company will meet this requirement if its cumulative free float-adjusted market capitalization is within the top 99% of the equity universe sorted in descending order by full market capitalization.

- (b) **Equity Universe Minimum Free Float-Adjusted Market Capitalization Requirement:** This investability screen is applied at the individual security level. To be eligible for inclusion in a market investable equity universe, a security must have a free float-adjusted market capitalization equal to or higher than 50% of the equity universe minimum size requirement.
- (c) **DM and EM Minimum Liquidity Requirement:** This investability screen is applied at the individual security level. To be eligible for inclusion in a market investable equity universe, a security must have adequate liquidity as measured by the annualized traded value ratio (“**ATVR**”) and the frequency of trading. In addition to the ATVR and frequency of trading requirements, securities in the MSCI China equity universe will not be eligible for inclusion in the market investable equity universe if the securities are suspended on the price cutoff date of the index review or have been suspended for 50 consecutive business days or more in the past 12 months.

Only one listing per security may be included in the market investable equity universe. In instances when a security has two or more eligible listings that meet the above liquidity requirements, then the following priority rules are used to determine which listing will be used for potential inclusion of the security in the market investable equity universe: (i) local listing; (ii) foreign listing in the same geographical region; and (iii) foreign listing in a different geographical region.

Due to liquidity concerns relating to securities trading at very high stock prices, a security with a stock price above \$10,000 will fail the liquidity screening and will not be included in any market investable equity universe. This limitation applies only for securities that are not currently constituents of the MSCI Global Investable Market Indices. Current constituents of the MSCI Global Investable Market Indices will remain in their respective indices even if their stock price passes \$10,000.

- (d) **Global Minimum Foreign Inclusion Factor Requirement:** This investability screen is applied at the individual security level. To be eligible for inclusion in a market investable equity universe, a security’s foreign inclusion factor (“**FIF**”) must reach a certain threshold. The FIF of a security is defined as the proportion of shares outstanding that is available for purchase in the public equity markets by international investors. This proportion accounts for the available free float of and/or the foreign ownership limits applicable to a specific security (or company). In general, a security must have an FIF equal to or larger than 0.15 to be eligible for inclusion in a market investable equity universe. Exceptions to this general rule are made only in the limited cases where the exclusion of securities of a very large company would compromise the Standard Index’s ability to fully and fairly represent the characteristics of the underlying market.
- (e) **Minimum Length of Trading Requirement:** This investability screen is applied at the individual security level. For an initial public offering (“**IPO**”) to be eligible for inclusion in a market investable equity universe, the new issue must have started trading at least three months before the implementation of a semi-annual index review. This requirement is applicable to small new issues in all markets. Large IPOs and large primary / secondary offerings of non-index constituents are not subject to the minimum length of trading requirement and may be included in a market investable equity universe and the Standard Index outside of a quarterly or semi-annual index review.
- (f) **Minimum Foreign Room Requirement:** This investability screen is applied at the individual security level. For a security that is subject to a foreign ownership limit (“**FOL**”) to be eligible for inclusion in a market investable equity universe, the proportion of shares still available to foreign investors relative to the maximum allowed must be at least 15%.
- (g) **Financial Reporting Requirement:** This investability screen is applied at the company level. Companies classified to the United States must file a Form 10-K/10-Q to be eligible for inclusion in the United States investable equity universe.

Defining Market Capitalization Size Segments for Each Market

Once a market investable equity universe is defined, it is segmented into the following size-based indices (the “**Size Segment Indices**”), with the following free float-adjusted market capitalization market coverage target ranges:

- Investable Market Index (Large + Mid + Small): 99%+1% or -0.5%
- Standard Index (Large + Mid): 85% ± 5%

- Large Cap Index: 70% ± 5%
- Mid Cap Index: The Mid Cap Index market coverage in each market is derived as the difference between the market coverage of the Standard Index and the Large Cap Index in that market.
- Small Cap Index: The Small Cap Index market coverage in each market is derived as the difference between the free float-adjusted market capitalization coverage of the Investable Market Index and the Standard Index in that market.

Creating the Size Segment Indices in each market involves the following steps: (i) defining the market coverage target range for each size segment; (ii) determining the global minimum size range for each size segment; (iii) determining the market size segment cutoffs and associated segment number of companies; (iv) assigning companies to the size segments; and (v) applying final size-segment investability requirements (which includes minimum free-float market capitalization requirements, minimum foreign room requirements, and exclusions for securities that exhibit extreme price increases).

Index Continuity Rules for the Standard Indices

In order to achieve index continuity, as well as provide some basic level of diversification within a market index, notwithstanding the effect of other index construction rules, a minimum number of five constituents will be maintained for a DM Standard Index and a minimum number of three constituents will be maintained for an EM Standard Index.

If after the application of the index construction methodology, a Standard Index contains fewer than five securities in a DM or three securities in an EM, then the largest securities by free float-adjusted market capitalization are added to the Standard Index in order to reach five constituents in that DM or three in that EM. At subsequent index reviews, if the minimum number of securities described above is not met, then after the market investable equity universe is identified, the securities are ranked by free float-adjusted market capitalization, however, in order to increase stability the free float-adjusted market capitalization of the existing index constituents (prior to review) is multiplied by 1.5, and securities are added until the desired minimum number of securities is reached.

Classifying Securities under the Global Industry Classification Standard

All securities in the global investable equity universe are assigned to the industry that best describes their business activities. To this end, MSCI has designed, in conjunction with S&P Dow Jones Indices, the GICS®. The GICS® entails four levels of classification: (1) sector; (2) industry groups; (3) industries; and (4) sub-industries. Under the GICS®, each company is assigned uniquely to one sub-industry according to its principal business activity. Therefore, a company can belong to only one industry grouping at each of the four levels of the GICS®. The GICS® classification of each security is used by MSCI to construct additional indices.

Constructing and Calculating the Individual Indices

After companies are allocated to their respective size segments and securities are reviewed for complying with the final size segment requirements, the final list of constituents for each Market Size Segment Index is determined. The MSCI Investable Market Indices are composed of the MSCI Standard Indices and the MSCI Small Cap Indices. The MSCI Standard Indices are further subdivided into the MSCI Large Cap and the MSCI Mid Cap Indices. Two or more Market Indices can be combined to form Composite Indices. Market Indices can be grouped either on the basis of market classification definition, geographical regions, economic regions or other criteria.

Index Calculation

The MSCI Indices are calculated using the Laspeyres' concept of a weighted arithmetic average together with the concept of chain-linking. As a general principle, today's index level is obtained by applying the change in the market performance to the previous period index levels.

Maintenance of the MSCI Indices

In order to maintain the representativeness of the MSCI Indices, MSCI may make structural changes to the MSCI Indices as a whole by adding or deleting component country indices. In particular, MSCI may add additional component country indices to the MSCI Indices or subtract one or more of its current component country indices prior to the maturity of the securities. Currently, such changes in the MSCI Indices may generally only be made on four dates throughout the year: after the close of the last business day of each February, May, August and November.

Each component country index is maintained with the objective of reflecting the evolution of the underlying equity markets and segments on a timely basis, while seeking to achieve index continuity, continuous investability of constituents and replicability of such index, and index stability and low index turnover. The maintenance of the component country indices is reflected in the MSCI Indices.

In particular, index maintenance involves quarterly index reviews in February, May, August and November, which include: updating the indices on the basis of a fully refreshed equity universe; taking buffer rules into consideration for migration of securities across size and style segments; and updating FIFs and number of shares (“**NOS**”).

Corporate Events

In addition, ongoing event-related changes to the MSCI Indices are made as the result of mergers, acquisitions, spin-offs, suspensions, delistings, bankruptcies, reorganizations and other similar corporate events. They can also result from capital reorganizations in the form of rights issues, bonus issues, public placements and other similar corporate actions that take place on a continuing basis. Changes resulting from corporate events involve many aspects, including additions, deletions, changes in number of shares, changes in industry classification and changes in foreign inclusion factors and/or domestic inclusion factors as a result of updated free float estimates. These changes generally are reflected in the MSCI Indices at the time of the event. In addition, changes in number of shares are consistently coordinated with changes in foreign inclusion factors and/or domestic inclusion factors to attempt to accurately reflect the investability of the underlying securities. Changes resulting from corporate events that could not be implemented on or near the effective dates and where no price adjustment factor is necessary, such as private placements and secondary offerings, are implemented at the following regularly scheduled index review. IPOs that are significant in size and meet the MSCI inclusion criteria may be considered for early inclusion in the Standard Index. If the decision is made to include an IPO early, the inclusion is effective after the close of the security’s tenth day of trading.

Further information about the MSCI corporate events methodology may be obtained from other sources including, but not limited to, the MSCI Indices sponsor’s website. We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the MSCI Indices is accurate or complete.

The NASDAQ-100® Index

We obtained all information contained in this underlying supplement regarding the Nasdaq-100 Index®, including, without limitation, its make-up, method of calculation, and changes in its components, from publicly available information. That information reflects the policies of, and is subject to change by, Nasdaq, Inc. (“**Nasdaq**”), the index sponsor. Nasdaq has no obligation to continue to publish, and may discontinue publication of, the Nasdaq-100 Index® at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the Nasdaq-100 Index® in connection with the offer and sale of the securities.

In addition, information about the Nasdaq-100 Index® may be obtained from other sources including, but not limited to, the Nasdaq-100 Index® sponsor’s website (including information regarding the sector weightings of the Nasdaq-100 Index®). We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the Nasdaq-100 Index® is accurate or complete.

The Nasdaq-100 Index® is reported by Bloomberg L.P. under the ticker symbol “NDX.”

The Nasdaq-100 Index® is a modified market capitalization-weighted index that is designed to measure the performance of the 100 largest non-financial companies listed on the Nasdaq Stock Market. The Nasdaq-100 Index®, which includes companies across a variety of major industry groups, was launched on January 31, 1985, with a base index value of 125.00, as adjusted.

The Nasdaq-100 Index® share weights of the component securities of the Nasdaq-100 Index® at any time are based upon the total shares outstanding in each of those securities and are additionally subject, in certain cases, to rebalancing. Accordingly, each underlying stock’s influence on the level of the Nasdaq-100 Index® is directly proportional to the value of its Nasdaq-100 Index® share weight.

Calculation of the Nasdaq-100 Index®

At any moment in time, the value of the Nasdaq-100 Index® equals the aggregate value of the then-current Nasdaq-100 Index® share weights of each of the Nasdaq-100 Index® component securities, which are based on the total shares outstanding of each such Nasdaq-100 Index® component security, multiplied by each such security’s respective last sale price on the Nasdaq Stock Market (which may be the official closing price published by the Nasdaq Stock Market), and divided by a scaling factor (the “**divisor**”), which becomes the basis for the reported Nasdaq-100 Index® value. The divisor serves the purpose of scaling such aggregate value to a lower order of magnitude which is more desirable for Nasdaq-100 Index® reporting purposes.

Security Eligibility Criteria

Eligible security types generally include American depositary receipts, common stocks, ordinary shares and tracking stocks. Companies organized as real estate investment trusts (“**REITs**”) are not eligible for index inclusion. If the security is a depositary receipt representing a security of a non-U.S. issuer, then references to the “issuer” are references to the underlying security and the total shares outstanding is the actual number of depositary shares outstanding as reported by the depositary banks.

If an issuer has listed multiple security classes, all security classes are eligible, subject to meeting all other security eligibility criteria.

The issuer of the security’s primary U.S. listing must exclusively be listed on the Nasdaq Global Select Market or the Nasdaq Global Market. If the issuer of the security is organized under the laws of a jurisdiction outside the United States, then such security must have listed options on a registered options market in the United States or be eligible for listed options trading on a registered options market in the United States.

The security must be classified as a non-financial company (any industry other than financials) according to the Industry Classification Benchmark.

There is no market capitalization eligibility criterion. Each security must have a minimum average daily trading volume of 200,000 shares (measured over the three calendar months ending with the month that includes the reconstitution reference date).

The security must have traded for at least three full calendar months, not including the month of initial listing, on an eligible exchange, which includes Nasdaq (Nasdaq Global Select Market, Nasdaq Global Market or Nasdaq Capital Market), NYSE, NYSE American or Cboe BZX. Eligibility is determined as of the constituent selection reference date and includes that month. A security that was added to the Nasdaq-100 Index[®] as the result of a spin-off event will be exempt from the seasoning requirement. There is no float eligibility criterion.

The issuer of the security generally may not currently be in bankruptcy proceedings.

The issuer of the security generally may not have entered into a definitive agreement or other arrangement that would make it ineligible for index inclusion and where the transaction is imminent as determined by the Nasdaq Index Management Committee.

Reconstitution and Rebalancing of the Nasdaq-100 Index[®]

Nasdaq selects constituents once annually in December. The security eligibility criteria are applied using market data as of the end of October and total shares outstanding as of the end of November. Index reconstitutions are announced in early December and become effective after the close of trading on the third Friday in December.

The Nasdaq-100 Index[®] is rebalanced on a quarterly basis in March, June, September and December. The Nasdaq-100 Index[®] rebalance uses the total shares outstanding and last sale price of all Nasdaq-100 Index[®] securities as of the prior month-end (February, May, August and November, respectively). Index rebalance changes are announced in early March, June, September and December and become effective after the close of trading on the third Friday in March, June, September and December. A special rebalance may be conducted at any time based on the weighting restrictions described in the index rebalance procedure if it is determined to be necessary to maintain the integrity of the Nasdaq-100 Index[®].

Constituent Selection

A reconstitution is conducted on an annual basis, at which time all eligible issuers, ranked by market capitalization, are considered for index inclusion based on the following order of criteria.

1. The top 75 ranked issuers will be selected for inclusion in the Nasdaq-100 Index[®].
2. Any other issuers that were already members of the Nasdaq-100 Index[®] as of the reconstitution reference date and are ranked within the top 100 are also selected for inclusion in the Nasdaq-100 Index[®].
3. In the event that fewer than 100 issuers pass the first two criteria, the remaining positions will first be filled, in rank order, by issuers currently in the Nasdaq-100 Index[®] ranked in positions 101-125 that were ranked in the top 100 at the previous reconstitution or replacement- or spin-off-issuers added since the previous reconstitution.
4. In the event that fewer than 100 issuers pass the first three criteria, the remaining positions will be filled, in rank order, by any issuers ranked in the top 100 that were not already members of the Nasdaq-100 Index[®] as of the reference date.

Constituent Weighting

The Nasdaq-100 Index[®] is a modified market capitalization-weighted index.

Quarterly Weight Adjustment

The Nasdaq-100 Index[®]'s quarterly weight adjustment employs a two-stage weight adjustment scheme according to issuer-level constraints.

Nasdaq-100 Index[®] securities' initial weights are determined using up to two calculations of market capitalization: total shares outstanding-derived market capitalization and index share-derived market capitalization. Total shares outstanding-derived market capitalization is defined as a security's last sale price multiplied by its total shares outstanding. Index share-derived market capitalization is defined as a security's last sale price multiplied by its updated index shares as of the prior month end. Both total shares outstanding-derived and index share-derived market capitalizations can be used to calculate total shares outstanding-derived and index share-derived initial index weights by dividing each index security's (total shares outstanding- or index share-derived) market capitalization by the aggregate (total shares outstanding- or index share-derived) market capitalization of all index securities.

When the rebalance coincides with the reconstitution, only total shares outstanding-derived initial weights are used. When the rebalance does not coincide with the reconstitution, index share-derived initial weights are used when doing so results in no weight adjustment; otherwise, total shares outstanding-derived weights are used in both stages of the weight adjustment procedure. Issuer weights are the aggregated weights of the issuers' respective index securities.

Stage 1. If no initial issuer weight exceeds 24%, initial weights are used as Stage 1 weights; otherwise, initial weights are adjusted so that no issuer weight may exceed 20% of the Nasdaq-100 Index®.

Stage 2. If the aggregate weight of the subset of issuers whose Stage 1 weights exceed 4.5% does not exceed 48%, Stage 1 weights are used as final weights; otherwise, Stage 1 weights are adjusted so that the aggregate weight of the subset of issuers whose Stage 1 weights exceed 4.5% is set to 40%.

Annual Weight Adjustment

The Nasdaq-100 Index®'s annual weight adjustment employs a two-stage weight adjustment scheme according to security-level constraints. Nasdaq-100 Index® securities' initial weights are determined via the quarterly weight adjustment procedure.

Stage 1. If no initial security weight exceeds 15%, initial weights are used as Stage 1 weights; otherwise, initial weights are adjusted so that no security weight may exceed 14% of the Nasdaq-100 Index®.

Stage 2. If the aggregate weight of the subset of index securities with the five largest market capitalizations is less than 40%, Stage 1 weights are used as final weights; otherwise, Stage 1 weights are adjusted so that (i) the aggregate weight of the subset of index securities with the five largest market capitalizations is set to 38.5% and (ii) no security with a market capitalization outside the largest five may have a final index weight exceeding the lesser of 4.4% or the final index weight of the index security ranked fifth by market capitalization.

Maintenance of the Nasdaq-100 Index®

Deletion Policy

If, at any time other than an index reconstitution, Nasdaq determines that an index security is ineligible for index inclusion, the index security is removed as soon as practicable.

This may include:

- Listing on an ineligible index exchange.
- Merger, acquisition or other major corporate event that would adversely impact the integrity of the Nasdaq-100 Index®.
- If a company is organized as a REIT.
- If an index security is classified as a financial company (financials industry) according to the Industry Classification Benchmark.
- If the issuer has an adjusted market capitalization below 0.10% of the aggregate adjusted market capitalization of the Nasdaq-100 Index® for two consecutive month ends.
- If a security that was added to the Nasdaq-100 Index® as the result of a spin-off event has an adjusted market capitalization below 0.10% of the aggregate adjusted market capitalization of the Nasdaq-100 Index® at the end of its second day of regular way trading as a Nasdaq-100 Index® member.

In the case of mergers and acquisitions, the effective date for the removal of an index issuer or security will be largely event-based, with the goal to remove the issuer or security as soon as completion of the acquisition or merger has been deemed highly probable. Notable events include, but are not limited to, completion of various regulatory reviews, the conclusion of material lawsuits and/or shareholder and board approvals.

If at the time of the removal of the index issuer or security there is not sufficient time to provide advance notification of the replacement issuer or security so that both the removal and replacement can be effective on the same day, the index issuer or security being removed will be retained and persisted in the index calculations at its last sale price until the effective date of the replacement issuer or security's entry to the Nasdaq-100 Index®.

Securities that are added as a result of a spin-off may be deleted as soon as practicable after being added to the Nasdaq-100 Index[®]. This may occur when Nasdaq determines that a security is ineligible for inclusion because of reasons such as ineligible exchange, security type, industry or adjusted market capitalization. Securities that are added as a result of a spin-off may be maintained in the Nasdaq-100 Index[®] until a later date and then removed, for example, if a spin-off security has liquidity characteristics that diverge materially from the security eligibility criteria and could affect the integrity of the Nasdaq-100 Index[®].

Replacement Policy

Securities may be added to the Nasdaq-100 Index[®] outside of the index reconstitution when there is a deletion. The index security (or all index securities under the same issuer, if appropriate) is replaced as soon as practicable if the issuer in its entirety is being deleted from the Nasdaq-100 Index[®]. The issuer with the largest market capitalization as of the prior month end which is not in the Nasdaq-100 Index[®] will replace the deleted issuer. Issuers that are added as a result of a spin-off are not replaced until after they have been included in a reconstitution.

For pending deletions set to occur soon after an index reconstitution and/or index rebalance effective date, Nasdaq may decide to remove the index security from the Nasdaq-100 Index[®] in conjunction with the index reconstitution and/or index rebalance effective date.

Corporate Actions

In the periods between scheduled index reconstitution and rebalancing events, individual index securities may be subject to a variety of corporate actions and events that require maintenance and adjustments to the Nasdaq-100 Index[®].

At the quarterly rebalancing, no changes are made to the Nasdaq-100 Index[®] from the previous month end until the quarterly share change effective date, with the exception of corporate actions with an ex-date.

Governance of the Nasdaq-100 Index[®]

The Nasdaq Index Management Committee approves all new index methodologies. This committee is comprised of full-time professional members of Nasdaq. The committee meets regularly and reviews items including, but not limited to, pending corporate actions that may affect Nasdaq-100 Index[®] constituents, statistics comparing the composition of the Nasdaq-100 Index[®] to the market, companies that are being considered as candidates for addition to the Nasdaq-100 Index[®] and any significant market events.

The Nikkei Stock Average Index

We obtained all information contained in this underlying supplement regarding the Nikkei Stock Average Index, including, without limitation, its make-up, method of calculation, and changes in its components, from publicly available information. That information reflects the policies of, and is subject to change by, Nikkei Inc. (“**Nikkei**”), the index sponsor. Nikkei has no obligation to continue to publish, and may discontinue publication of, the Nikkei Stock Average Index at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the Nikkei Stock Average Index in connection with the offer and sale of the securities.

In addition, information about the Nikkei Stock Average Index may be obtained from other sources including, but not limited to, the Nikkei Stock Average Index sponsor’s website. We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the Nikkei Stock Average Index is accurate or complete.

The Nikkei Stock Average Index is reported by Bloomberg L.P. under the ticker symbol “NKY.”

The Nikkei Stock Average Index, also known as the Nikkei 225 Index, is a stock index that measures the composite price performance of selected Japanese stocks. The Nikkei Stock Average Index is currently based on 225 underlying stocks (the “**Nikkei Underlying Stocks**”) trading on the Tokyo Stock Exchange (the “**TSE**”) representing a broad cross-section of Japanese industries. Non-ordinary shares, such as shares of exchange-traded funds, real estate investment trusts, preferred stock or other preferred securities or tracking stocks, are excluded from the Nikkei Stock Average Index.

All 225 Nikkei Underlying Stocks are stocks listed on the TSE Prime Market. Stocks listed on the TSE Prime Market are among the most actively traded stocks on the TSE. Prior to April 2022, constituent stocks were selected from the Tokyo Stock Exchange First Section. Nikkei rules require that the 75 most liquid issues (one-third of the component count of the Nikkei Stock Average Index) be included in the Nikkei Stock Average Index. The Nikkei Stock Average Index was launched on September 7, 1950 and first calculated by the TSE. Nikkei first calculated and published the Nikkei Stock Average Index in 1970.

Rules of the Periodic Review

Nikkei Underlying Stocks are reviewed twice a year (the “**periodic review**”) in accordance with the following rules with a base date at the end of January and July, and results of the review are applied in the beginning of April and October, respectively. Results of the review become effective on the first trading day of April and October, and the maximum number of Nikkei Underlying Stocks that can be affected is three, excluding any Nikkei Underlying Stock affected by corporate reorganization near the time of periodic review. Stocks selected by the procedures outlined below are presented as candidates to a committee composed of academics and market professionals for comment; based on comments from the committee, Nikkei determines and announces any changes to the Nikkei Underlying Stocks.

High Liquidity Group

The top 450 most liquid stocks are chosen from the TSE Prime Market. For purposes of this selection, liquidity is measured by (i) trading volume in the preceding 5-year period and (ii) the magnitude of price fluctuation by trading value (defined as (high price/low price)/trading value) in the preceding 5-year period. These 450 stocks constitute the “**High Liquidity Group**” for the review. Those Nikkei Underlying Stocks that are not in the High Liquidity Group are removed. Those stocks that are not currently Nikkei Underlying Stocks but that are in the top 75 of the High Liquidity Group are added.

Sector Balance

The High Liquidity Group is then categorized into the following six sectors: Technology, Financials, Consumer Goods, Materials, Capital Goods/Others and Transportation and Utilities. These six sector categories are further divided into 36 industrial classifications as follows:

- Technology — Pharmaceuticals, Electrical Machinery, Automobiles & Auto Parts, Precision Instruments and Communications;
- Financials — Banking, Other Financial Services, Securities and Insurance;
- Consumer Goods — Fishery, Food, Retail and Services;

- Materials — Mining, Textiles & Apparel, Pulp & Paper, Chemicals, Petroleum, Rubber, Glass & Ceramics, Steel, Nonferrous Metals and Trading Companies;
- Capital Goods/Others — Construction, Machinery, Shipbuilding, Transportation Equipment, Other Manufacturing and Real Estate; and
- Transportation/Utilities — Railway & Bus, Land Transport, Marine Transport, Air Transport, Warehousing, Electric Power and Gas.

The “**appropriate number**” of constituents for each sector is defined to be half the number of stocks in that sector. After the liquidity-based adjustments, discussed above, a rebalancing is conducted if any of the sectors are over- or under-represented. The degree of representation is evaluated by comparing the actual number of constituents in the sector against the appropriate number for that sector.

For over-represented sectors, current constituents in the sector are deleted in the order of liquidity (lowest liquidity first) to correct the overage. For under-represented sectors, non-constituent stocks are added from the High Liquidity Group in the order of liquidity (highest liquidity first) to correct the shortage.

Extraordinary Replacement Rules

Nikkei Underlying Stocks that meet the following criteria will be deleted from the Nikkei Stock Average Index: designation as “securities to be delisted” or “securities on alert,” delisting due to corporate restructuring such as merger, share exchange or share transfer, or transfer to a market other than the TSE Prime Market. However, if a constituent stock is delisted due to a corporate restructuring and a stock of a company which succeeds the substance of the delisted company is added, the newly listed stock will replace the delisted stock on the date of its listing in principle. A constituent designated as a “security under supervision” remains a constituent at the time of designation. However, Nikkei may replace such constituent with a pre-announcement when it is highly inappropriate to keep the stock as a constituent (e.g. the probability of delisting is extremely high).

When a Nikkei Underlying Stock is deleted from the Nikkei Stock Average Index as outlined in the preceding paragraph, a new Nikkei Underlying Stock will be selected and added, in principle, from the same sector of the High Liquidity Group in order of liquidity. Notwithstanding the foregoing, the following rules may apply depending on the timing and circumstances of the deletion: (i) when such deletion is scheduled close to the time of the periodic review, additional stocks may be selected as part of the periodic review process and (ii) when multiple deletions are scheduled in a season other than the periodic review, additions may be selected using the liquidity and sector balancing rules outlined above.

Procedures to Implement Constituent Changes

As a general rule, for both the periodic review and the extraordinary replacement rules, additions and deletions are made effective on the same day in order to keep the number of Nikkei Underlying Stocks 225. However, under the circumstances outlined below, when an addition cannot be made on the same day as a deletion, the Nikkei Stock Average Index may be calculated with fewer than 225 Nikkei Underlying Stocks. In this case, the divisor is adjusted to ensure continuity.

Calculation of the Nikkei Stock Average Index

The Nikkei Stock Average Index is a modified, price-weighted index (*i.e.*, a Nikkei Underlying Stock’s weight in the index is based on its price per share rather than the total market capitalization of the issuer) that is calculated by (i) multiplying the per share price of each Nikkei Underlying Stock by the corresponding price adjustment factor for such Nikkei Underlying Stock (a “PAF”), (ii) calculating the sum of all these products and (iii) dividing such sum by a divisor. The divisor is subject to periodic adjustments as set forth below. The stock prices used in the calculation of the Nikkei Stock Average Index are those reported by a primary market for the Nikkei Underlying Stocks (currently the TSE). The level of the Nikkei Stock Average Index is calculated every 5 seconds.

The PAF of a Nikkei Underlying Stock will equal 1 if the per share price of such Nikkei Underlying Stock does not exceed 1% of the sum of the adjusted per share prices for all Nikkei Underlying Stocks. If the per share price of a Nikkei Underlying Stock exceeds 1% of the sum of the adjusted per share prices for all Nikkei Underlying Stocks, the PAF for such Nikkei Underlying Stock will be calculated in intervals of 0.1 (rounded down) and will equal the highest possible value that, when multiplied by the per share price of such Nikkei Underlying Stock, does not exceed 1% of the sum of the adjusted per share prices for all Nikkei Underlying Stocks. PAFs are evaluated annually on the base date at the end of July. If an average daily trading value of a stock to be added is relatively low compared with its expected weight, the stock may be added with the PAF which is one-half (rounded up to the nearest 0.1) of the value set by the method described in

the preceding sentence. In such case, the PAF of the stock shall be raised to the planned value at the next periodic review in principle.

Effective October 2022, if the weight of any Nikkei Underlying Stock exceeds a certain threshold (the “**weight cap threshold**”) on the base date of a periodic review, a capping ratio will be applied to decrease the weight of that Nikkei Underlying Stock. The weight cap threshold for any Nikkei Underlying Stock is (i) 12% as of the October 2022 periodic review, (ii) 11% as of the October 2023 periodic review and (iii) 10% as of the October 2024 periodic review. For any Nikkei Underlying Stock to which a capping ratio is applied, the price of that Nikkei Underlying Stock is adjusted by a capped price adjustment factor (“**CPAF**”) equal to (i) the capping ratio multiplied by (ii) the PAF.

If, on the base date of a periodic review, the weight of any Nikkei Underlying Stock exceeds the weight cap threshold and a capping ratio does not already apply to that Nikkei Underlying Stock, a capping ratio of 0.9 is applied on the effective date of the periodic review. If a capping ratio already applies to any Nikkei Underlying Stock, the capping ratio will be decreased in increments of 0.1 on the effective date of the periodic review until there is a change in the CPAF. If, on the base date of a periodic change, the weight of a Nikkei Underlying Stock to which a capping ratio is applied is below 5%, the capping ratio will be increased in increments of 0.1 on the effective date of the periodic review until there is a change in the CPAF; however, the capping ratio will be canceled if it increases to 1.0. When a Nikkei Underlying Stock to which a capping ratio is applied effects a large-scale stock split or reverse split and the PAF is adjusted by the ratio of the split or reverse split, the capping ratio may be revised as necessary to ensure that the new CPAF does not change the weight of that Nikkei Underlying Stock.

In order to maintain continuity of the Nikkei Stock Average Index in the event of certain changes due to non-market factors affecting the Nikkei Underlying Stocks, such as the addition or deletion of stocks, substitution of stocks, stock splits or distributions of assets to stockholders, the divisor used in calculating the Nikkei Stock Average Index is adjusted in a manner designed to prevent any instantaneous change or discontinuity in the level of the Nikkei Stock Average Index. Thereafter, the divisor remains at the new value until a further adjustment is necessary as the result of another change. As a result of such change affecting any Nikkei Underlying Stock, the divisor is adjusted in such a way that the sum of all share prices immediately after such change multiplied by the applicable PAF and divided by the new divisor (*i.e.*, the level of the Nikkei Stock Average Index immediately after such change) will equal the level of the Nikkei Stock Average Index immediately prior to the change.

The Russell Indices

We obtained all information contained in this underlying supplement regarding the Russell 1000[®] Index, the Russell 2000[®] Index, the Russell 3000[®] Index and the Russell Midcap[®] Index (each a “**Russell Index**” and collectively, the “**Russell Indices**”), including, without limitation, their make-up, method of calculation, and changes in their components, from publicly available information. That information reflects the policies of, and is subject to change by, FTSE Russell, the index sponsor. FTSE Russell is a wholly owned subsidiary of the London Stock Exchange Group plc. FTSE Russell has no obligation to continue to publish, and may discontinue publication of, any of the Russell Indices at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the Russell Indices in connection with the offer and sale of securities.

In addition, information about the Russell Indices may be obtained from other sources including, but not limited to, the Russell Indices sponsor’s website (including information regarding the Russell Indices’ sector weightings). We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the Russell Indices is accurate or complete.

Each Russell Index is a subset of the Russell 3000E[™] Index, which includes up to 4,000 of the largest U.S. companies as determined by total market capitalization with over 97% representation of the U.S. equity market.

The Russell 1000[®] Index

The Russell 1000[®] Index measures the capitalization-weighted price performance of 1,000 U.S. large-cap stocks listed on eligible U.S. exchanges and is designed to track the performance of the large-capitalization segment of the U.S. equity market. The companies included in the Russell 1000[®] Index are the 1,000 largest companies that form the Russell 3000E[™] Index. The Russell 1000[®] Index represents approximately 93% of the total market capitalization of the Russell 3000[®] Index. The Russell 1000[®] Index is reported by Bloomberg L.P. under the ticker symbol “RIY.”

The Russell 2000[®] Index

The Russell 2000[®] Index measures the capitalization-weighted price performance of 2,000 U.S. small-cap stocks listed on eligible U.S. exchanges and is designed to track the performance of the small-capitalization segment of the U.S. equity market. The companies included in the Russell 2000[®] Index are the middle 2,000 of the companies that form the Russell 3000E[™] Index (i.e., those ranking from 1,001 to 3000 in the Russell 3000E[™] Index). The Russell 2000[®] Index represents approximately 7% of the total market capitalization of the Russell 3000[®] Index. The Russell 2000[®] Index is reported by Bloomberg L.P. under the ticker symbol “RTY.”

The Russell 3000[®] Index

The Russell 3000[®] Index measures the capitalization-weighted price performance of the largest 3,000 U.S. stocks listed on eligible U.S. exchanges and is designed to represent the broad U.S. equity market. The companies included in the Russell 3000[®] Index are the 3,000 largest U.S. companies that form the Russell 3000E[™] Index. The Russell 3000[®] Index consists of the 3,000 companies included in the Russell 1000[®] Index and the Russell 2000[®] Index, which are subsets of the Russell 3000E[™] Index. The Russell 3000[®] Index represents approximately 96% of the U.S. equity market. The Russell 3000E[™] Index is not the same as the Russell 3000[®] Index, which is a subset of the Russell 3000E[™] Index. The Russell 3000[®] Index is reported by Bloomberg L.P. under the ticker symbol “RAY.”

The Russell Midcap[®] Index

The Russell Midcap[®] Index measures the capitalization-weighted price performance of 800 U.S. mid-cap stocks listed on eligible U.S. exchanges and is designed to track the performance of the mid-capitalization segment of the U.S. equity market. The companies included in the Russell Midcap[®] Index are the 800 smallest U.S. companies that form the Russell 1000[®] Index, which is composed of the 1,000 largest U.S. companies that form the Russell 3000E[™] Index. The Russell Midcap[®] Index represents approximately 27% of the total market capitalization of the Russell 1000[®] Index. The Russell Midcap[®] Index is reported by Bloomberg L.P. under the ticker symbol “RMCC.”

Selection of Stocks Underlying the Russell Indices

The Russell Indices are sub-indices of the Russell 3000E[™] Index. To be eligible for inclusion in the Russell 3000E[™] Index and, consequently, a Russell Index, a company must meet the following criteria as of the rank day in May (except that initial public offerings (“**IPOs**”) are considered for inclusion on a quarterly basis):

- *U.S. Equity Market.* The company must be determined to be part of the U.S. equity market, meaning that its home country is the United States. If a company incorporates in, has a stated headquarters location in, and also trades in the same country (American Depositary Receipts and American Depositary Shares are not eligible), the company is assigned to its country of incorporation.

If any of the three criteria do not match, FTSE Russell then defines three Home Country Indicators (“**HCI**s”): country of incorporation, country of headquarters and country of the most liquid exchange as defined by two-year average daily dollar trading volume from all exchanges within a country. After the HCIs are defined, the next step in the country assignment involves an analysis of assets by location. FTSE Russell cross-compares the primary location of the company’s assets with the three HCIs. If the primary location of assets matches any of the HCIs, then the company is assigned to its primary asset location.

If there is not enough information to determine a company’s primary location of assets, FTSE Russell uses the primary location of the company’s revenue for the same cross-comparison and assigns the company to the appropriate country in a similar fashion. FTSE Russell uses an average of two years of assets or revenue data for analysis to reduce potential turnover.

If conclusive country details cannot be derived from assets or revenue, FTSE Russell assigns the company to the country in which its headquarters are located unless the country is a Benefit Driven Incorporation (“**BDI**”) country. If the country in which its headquarters are located is a BDI country, the company is assigned to the country of its most liquid stock exchange. The BDI countries are Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bonaire, British Virgin Islands, Cayman Islands, Channel Islands, Cook Islands, Curacao, Faroe Islands, Gibraltar, Guernsey, Isle of Man, Jersey, Liberia, Marshall Islands, Panama, Saba, Sint Eustatius, Sint Maarten and Turks and Caicos Islands.

If a company is designated as a Chinese “N Share,” it will not be considered for inclusion within the Russell Indices. An N Share is a company incorporated outside of mainland China that trades on the NYSE, the NASDAQ or the NYSE American. An N Share will have a headquarters or Principal Executive Office or its establishment in mainland China, with the majority of its revenue or assets derived from mainland China.

- *U.S. Eligible Exchange.* The following exchanges and markets are deemed to be eligible U.S. exchanges: CBOE, NYSE, NYSE American, NASDAQ and NYSE Arca. Stocks that are not traded on an eligible U.S. exchange (Bulletin Board, Pink Sheet and over-the-counter securities, including securities for which prices are displayed on the FINRA Alternative Display Facility) are not eligible for inclusion.
- *Minimum Closing Price.* A stock must have a close price at or above \$1.00 (on its primary exchange), subject to exceptions to reduce turnover.
- *Minimum Total Market Capitalization.* Companies with a total market capitalization less than \$30 million are not eligible for inclusion.
- *Minimum Free Float.* Companies with less than 5% of their shares available in the marketplace are not eligible for inclusion.
- *Company Structure.* Companies structured in the following ways are not eligible for inclusion: royalty trusts, U.S. limited liability companies, closed-end investment companies, business development companies (and other companies that are required to report Acquired Fund Fees and Expenses, as defined by the SEC), blank-check companies, special-purpose acquisition companies (“**SPACs**”), limited partnerships, exchange-traded funds and mutual funds.
- *UBTI.* Real estate investment trusts and publicly traded partnerships that generate or have historically generated unrelated business taxable income (“**UBTI**”) and have not taken steps to block UBTI to equity holders are not eligible for inclusion. Information used to confirm UBTI impact includes the following publicly available sources: 10-K, SEC Form S-3, K-1, company annual report, dividend notices or company website.
- *Security Types.* The following types of securities are not eligible for inclusion: preferred and convertible preferred stock, redeemable shares, participating preferred stock, warrants, rights, depositary receipts, installment receipts and trust receipts.
- *Minimum Voting Rights.* Companies assigned a developed market nationality are required to have more than 5% of the company’s voting rights (aggregated across all of its equity securities, including, where identifiable,

those that are not listed or trading) in the hands of unrestricted shareholders. Shares referenced as “non-voting” or that provide legally minimum rights only will be viewed as having no voting power as it relates to the minimum voting rights review. Existing constituents who do not currently meet this requirement have a 5-year grandfathering period to comply. If subsequently they continue to fail the minimum voting rights requirement, they will be removed at the June 2023 reconstitution.

- **Multiple Share Classes.** If an eligible company trades under multiple share classes, each share class is reviewed independently for eligibility for inclusion. Share classes in addition to the primary share class must meet the following minimum size, liquidity and float requirements to be eligible: (i) total market cap must be larger than \$30 million; (ii) average daily dollar trading value must exceed that of the global median; and (iii) more than 5% of shares must be available in the marketplace.

Securities of eligible companies are included in Russell Indices based on total market capitalization. Total market capitalization is determined by multiplying total outstanding shares by the market price (generally, the last price traded on the primary exchange of the share class with the highest two-year trading volume, subject to exceptions) as of the rank day in May (except that IPOs are considered for inclusion on a quarterly basis). Common stock, non-restricted exchangeable shares and partnership units/membership interests (but not operating partnership units of umbrella partnership real estate investment trusts) are used to calculate a company’s total market capitalization. If multiple share classes of common stock exist, they are combined to determine total shares outstanding; however, in cases where the common stock share classes act independently of each other (e.g., tracking stocks), each class is considered for inclusion separately. For merger and spin-off transactions that are effective between rank day in May and the business day immediately before the index lock-down takes effect ahead of the annual reconstitution in June, the market capitalizations of the impacted securities are recalculated and membership is re-evaluated as of the effective date of the corporate action.

The 4,000 securities with the greater total market capitalization become members of the Russell 3000E™ Index. All remaining Russell Indices are a subset of the Russell 3000E™ Index. Market capitalization breakpoints for the Russell Indices are determined by the breaks between the rankings of companies (based on descending total market capitalization). Market capitalization breakpoints for the Russell 3000® Index are determined by the break between the companies ranked #1 through #3,000. Market capitalization breakpoints for the Russell 1000® Index are determined by the break between the companies ranked #1 through #1,000. Market capitalization breakpoints for the Russell 2000® Index are determined by the break between the companies ranked #1,001 through #3,000. Market capitalization breakpoints for the Russell Midcap® Index are determined by the break between the companies ranked #201 through #1,000. New members are assigned on the basis of the breakpoints, and existing members are reviewed to determine if they fall within a cumulative 5% market cap range around these new market capitalization breakpoints. If an existing member’s market cap falls within this cumulative 5% of the market capitalization breakpoint, it will remain in its current index rather than be moved to a different Russell Index.

After membership is determined, a security’s shares are adjusted to include only those shares available to the public (“**free float**”). The purpose of this adjustment is to exclude from market calculations the capitalization that is not available for purchase and is not part of the investable opportunity set. Stocks in the Russell Indices are weighted by their available (also called float-adjusted) market capitalization. The following types of shares are removed from total market capitalization to arrive at free float or available market capitalization, based on information recorded in SEC corporate filings: officers’ and directors’ holdings, private holdings exceeding 10% of shares outstanding, institutional holdings exceeding 30% of shares outstanding, shares held by publicly listed companies, shares held by an Employee Stock Ownership Plan or a Leveraged Employee Stock Ownership Plan; shares locked up during an IPO; direct government holdings; and indirect government holdings exceeding 10% of shares outstanding.

Reconstitution occurs on the fourth Friday in June. A full calendar for reconstitution is published each spring, with such reconstitution schedule governed by FTSE Russell guidelines.

Corporate Actions and Events Affecting the Russell Indices

FTSE Russell applies corporate actions to the Russell Indices on a daily basis. FTSE Russell applies the following methodology guidelines, among others, when adjusting the applicable Russell Index in response to corporate actions:

- **“No Replacement” Rule.** Securities that leave the relevant Russell Index for any reason (e.g., mergers, acquisitions or other similar corporate activity) are not replaced. Thus, the number of securities in the relevant Russell Index over a year will fluctuate according to corporate activity.

- *Statement of Principles and Adjustments for Specific Corporate Events.* FTSE Russell has stated as general principles that the treatment of corporate events (a) should reflect how such events are likely to be dealt with in investment portfolios to maintain the portfolio structure in line with the target set out in the index objective and index methodology and (b) should normally be designed to minimize the trading activity required by investors to match the index performance. No assurance can be provided that corporate actions and events will be treated by FTSE Russell in a manner consistent with its statement of general principles.

In addition, FTSE Russell has established guidance for the treatment of corporate actions and events, including , but not limited to, dividends, capital repayments, companies converting to a REIT structure, share buybacks, rights issues, mergers, acquisitions, tender offers, split-offs, spin-offs, bankruptcies, insolvencies, liquidations and trading suspensions. However, because of the complexities involved in some cases, those guidelines are not definitive rules that will determine FTSE Russell's actions in all circumstances. FTSE Russell reserves the right to determine the most appropriate method of implementation for any corporate event which is not covered by those guidelines or which is of a complex nature.

- *Changes to Shares Outstanding and Free Float.* Each Russell Index will be reviewed quarterly for updates to shares outstanding and to free floats used within the calculation of each Russell Index. In March, September and December, shares outstanding and free float will be updated to reflect cumulative share changes greater than 1%, cumulative free float changes greater than 1% for constituents with a free float greater than 5% but less than or equal to 15% and cumulative free float changes greater than 3% for constituents with a free float greater than 15%. In June, the shares and free float updates will be implemented regardless of size. Shares and free float updates can be triggered in some cases by certain events, such as some primary or secondary offerings.

The S&P/ASX 200 Index

We obtained all information contained in this underlying supplement regarding the S&P/ASX 200 Index, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. This information reflects the policies of, and is subject to change by, S&P Dow Jones Indices LLC (“**S&P Dow Jones**”), the index sponsor. S&P Dow Jones has no obligation to continue to publish, and may discontinue publication of, the S&P/ASX 200 Index at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the S&P/ASX 200 Index in connection with the offer and sale of the securities.

In addition, information about the S&P/ASX 200 Index may be obtained from other sources including, but not limited to, the S&P/ASX 200 Index sponsor’s website (including information regarding (i) the S&P/ASX 200 Index’s top ten constituents, (ii) the S&P/ASX 200 Index’s sector weightings and (iii) the S&P/ASX 200 Index’s country weightings). We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the S&P/ASX 200 Index is accurate or complete.

The S&P/ASX 200 Index is reported by Bloomberg L.P. under the ticker symbol “AS51.”

General

The S&P/ASX 200 Index is recognized as the institutional investable benchmark in Australia. The S&P/ASX 200 Index measures the performance of the 200 largest and most liquid index-eligible stocks listed on the Australian Securities Exchange (the “**ASX**”) by float-adjusted market capitalization.

Composition of the S&P/ASX 200 Index

The S&P/ASX Equity Indices Committee (the “**Index Committee**”) aims to design a highly liquid and tradable index whose total market capitalization is large enough to approximate the market segment it is capturing while keeping the number of stocks at a minimum. Both market capitalization and liquidity are assessed using the previous six months’ worth of data. Quarterly review changes take effect the third Friday of March, June, September and December.

Eligibility Criteria

Additions to the S&P/ASX 200 Index are evaluated based on the following eligibility criteria.

- Listing. Only securities listed on the ASX are considered for inclusion in the S&P/ASX 200 Index.
- Domicile. Both domestic and foreign-domiciled entities are eligible for inclusion in the S&P/ASX 200 Index. Foreign-domiciled securities may be subject to specialized treatment due to the date reporting conventions of certain foreign securities listed on the ASX. Such action is necessary in order to ensure the S&P/ASX 200 Index remains representative of the Australian market while limiting constituent turnover and reducing index volatility.

A company is considered to be domestic if:

- The company is incorporated in Australia and traded on the ASX; or
- The company is incorporated overseas but has an exclusive listing on the ASX; or
- The company is incorporated overseas and is traded on the other overseas markets, but most of the trading activity occurs on the ASX.

Generally, a foreign-domiciled company is a company that is:

- Incorporated overseas; and/or
- Listed on one or more overseas markets; and
- Has the majority of its trading activity occurring on an overseas exchange.

When determining the domestic or foreign-domicile classification, the value and volume of shares traded on the ASX relative to any overseas market listings, are reviewed across various time periods of up to 12 months. Changes in

classification will typically be made in cases where there is a clear and sustained majority of trading (60% or more) on the ASX relative to other overseas market listings, or vice versa. Any changes in classification as a result of a merger or acquisition are reviewed on case by case basis.

- *Eligible Securities.* Common and equity preferred stocks (which are not of a fixed income nature) are eligible for inclusion in the S&P/ASX 200 Index. Hybrid stocks, such as convertible stock, bonds, warrants and preferred stock that provide a guaranteed fixed return, are not eligible. Listed investment companies (LICs) that invest in a portfolio of securities are not eligible. Companies that are currently the target of an acquisition are ineligible.
- *Market Capitalization.* The market capitalization criterion for stock inclusion is based upon the daily average market capitalization of a security over the last six months. The ASX stock price history (last six months, adjusted for price-adjusting corporate actions), latest available shares on issue and the investable weight factor (“IWF”) are the relevant variables for the calculation. The IWF is a variable that is primarily used to determine the available float of a security for ASX-listed securities.
- *Liquidity.* Only securities that are regularly traded are eligible for inclusion in the S&P/ASX 200 Index. A stock’s liquidity is measured relative to its peers. Stocks must have a minimum Relative Liquidity of 50% to be included in the S&P/ASX 200 Index. Relative Liquidity is calculated as follows:

$$\text{Relative Liquidity} = \frac{\text{Stock Median Liquidity}}{\text{Market Liquidity}}$$

where:

- Stock Median Liquidity is the median daily value traded on the ASX for each stock divided by the average float/index weight-adjusted market capitalization for the previous six months; and
- Market Liquidity is determined using the market capitalization weighted average of the stock median liquidities of the 500 constituents in the All Ordinaries index, an index composed of the 500 largest securities listed on the ASX.

Calculation of the S&P/ASX 200 Index

The S&P/ASX 200 Index is a float-adjusted market capitalization-weighted index calculated in the same manner as the S&P Indices, except that a stock must have a minimum IWF of 0.3 to be eligible for inclusion in the S&P/ASX 200 Index. For additional information about the calculation of the S&P/ASX 200 Index, see “Indices—The S&P U.S. Indices—Calculation of the S&P Indices” in this underlying supplement. For purposes of such section, the S&P/ASX 200 Index is an “S&P Index.”

Maintenance of the S&P/ASX 200 Index

Rebalancing. Rebalancing of the S&P/ASX 200 Index series occurs on a regular basis. Shares and IWFs updates are also applied regularly. The reference date used for the six months’ worth of trading data is the second to last Friday of the month prior to the rebalancing.

Frequency. The S&P/ASX 200 Index constituents are rebalanced quarterly to ensure adequate market capitalization and liquidity. Quarterly rebalancing changes take effect after the market close on the third Friday of March, June, September and December.

Buffers. In order to limit the level of index turnover, eligible non-constituent securities will generally only be considered for index inclusion once a current constituent stock is excluded due to a sufficiently low rank and/or liquidity, based on the float-adjusted market capitalization. Potential index inclusions and exclusions need to satisfy a buffer requirement in terms of the rank of the stock relative to the S&P/ASX 200 Index. The buffer aims to limit the level of index turnover that may take place at each quarterly rebalancing, maximizing the efficiency and limiting the cost associated with holding the index portfolio.

<u>Addition</u>	<u>Rank Buffer for Deletion</u>
179th or higher	221st or lower

This float-adjusted market capitalization rank buffer serves as the guideline used by the Index Committee to arrive at any potential constituent changes to the S&P/ASX 200 Index. However, the Index Committee has complete discretion to bypass these rules when circumstances warrant.

Intra-Rebalancing Additions/Deletions. The S&P/ASX 200 Index is a fixed count index, so intra-rebalancing index additions are generally made only if a vacancy is created by an index deletion. Index additions are made according to market size and liquidity. The reference date used to determine the index replacement is determined on a case by case basis and taken closer to the time of the event that triggered the vacancy. Deletions can occur between index rebalancing dates due to acquisitions, mergers and spin-offs or due to suspension or bankruptcies. The decision to remove a stock from the S&P/ASX 200 Index will be made once there is sufficient evidence that the transaction will be completed. Stocks that are removed due to mergers & acquisitions activity are removed from the S&P/ASX 200 Index at the cash offer price for cash-only offers. Otherwise the best available price in the market is used.

Initial Public Offerings (“IPOs”). An IPO is added to the S&P/ASX 200 Index only when an appropriate vacancy occurs or due to a rebalance and is subject to proven liquidity for at least eight weeks. An exception may be made for extraordinary large offerings where sizeable trading volumes justify inclusion. Available price and value traded data as of the reference date is used to determine eligibility for IPOs.

Spin-offs. A spun-off company is added to all indices of the parent company at a zero price on the ex-date. Should the spun-off company not be considered eligible for the S&P/ASX 200 Index that it is added to on the basis of its float-adjusted market capitalization, then it will be removed from the S&P/ASX 200 Index after at least one day of regular way trading.

Share Updates. The share count for all constituents of the S&P/ASX 200 Index are reviewed quarterly and are rounded to the nearest thousand (‘000) for all domestic Australian stocks. Share updates for foreign-domiciled securities will take place at each quarterly rebalancing. The update to the number of shares outstanding will only take place when, on the rebalancing reference date, the three-month average of CHESS Depository Interests (“**CDIs**”), a type of depository receipt developed by ASX, or the total securities held in the Australian branch of issuer sponsored register (where supplied) and in the Clearing House Electronic Sub-register System (“**CHESS**”), an ASX computer system for the management of transaction settlements, differs from the current number of shares used by 5% or more. Where CDI information is not supplied to the ASX by the company’s share register, estimates for Australian equity capital will be drawn from CHESS data and, ultimately, registry-sourced data.

Investable Weight Factor (IWF) Updates. IWFs are reviewed annually as part of the September quarterly rebalancing. In addition to the annual IWF review, certain events may warrant an intra-quarter or quarterly IWF update. For more information on IWF updates, see “Indices—The S&P U.S. Indices—Maintenance of the S&P Indices—Investable Weight Factor (IWF) Updates” in this underlying supplement. For purposes of such section, the S&P/ASX 200 Index is an “S&P Index.”

Corporate Action Adjustments. For a summary of the types of index maintenance adjustments upon various corporate actions and whether or not a divisor adjustment is required, see the table under “Indices—The S&P U.S. Indices—Maintenance of the S&P Indices—Corporate Action Adjustments” in this underlying supplement. For purposes of such section, the S&P/ASX 200 Index is an “S&P Index.”

Governance of the S&P/ASX 200 Index

The S&P/ASX 200 Index is maintained by the Index Committee. S&P Dow Jones chairs the Index Committee, which is composed of five voting members representing both S&P Dow Jones and the ASX. The Index Committee meets regularly to review market developments and convenes as needed to address major corporate actions. At each meeting, the Index Committee may review pending corporate actions that may affect constituents of the S&P/ASX 200 Index, statistics comparing the composition of the S&P/ASX 200 Index to the market, companies that are being considered as candidates for addition to the S&P/ASX 200 Index and any significant market events. In addition, the Index Committee may revise the S&P/ASX 200 Index’s policy covering rules for selecting companies, treatment of dividends, share counts or other matters.

The S&P Select Industry Indices

We obtained all information contained in this underlying supplement regarding the S&P[®] Biotechnology Select Industry Index, the S&P[®] Homebuilders Select Industry Index, the S&P[®] Oil & Gas Exploration & Product Select Industry Index and the S&P[®] Retail Select Industry Index (each, a “**Select Industry Index**” and collectively, the “**Select Industry Indices**”), including, without limitation, their make-up, method of calculation, and changes in their components, from publicly available information. That information reflects the policies of, and is subject to change by, S&P Dow Jones Indices LLC (“**S&P Dow Jones**”), the index sponsor. S&P Dow Jones has no obligation to continue to publish, and may discontinue publication of, the Select Industry Indices at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the Select Industry Indices in connection with the offer and sale of securities.

In addition, information about the Select Industry Indices may be obtained from other sources including, but not limited to, the Select Industry Indices sponsor’s website. We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the Select Industry Indices is accurate or complete.

General

Each Select Industry Index is designed to measure the performance of a sub-industry or group of sub-industries within the S&P[®] Total Market Index (the “**S&P TM Index**”) based on the Global Industry Classification Standards (“**GICS**”). The S&P TM Index is a benchmark that measures the performance of the United States equity market. The S&P TM Index offers broad market exposure to companies of all market capitalizations, including all common equities listed on the NYSE, NYSE Arca, NYSE American, Nasdaq Global Select Market, Nasdaq Select Market, Nasdaq Capital Market, Cboe BZX, Cboe BYX, Cboe EDGA, or Cboe EDGX. Only United States companies are eligible for inclusion in the S&P TM Index.

The S&P[®] Biotechnology Select Industry Index

The S&P[®] Biotechnology Select Industry Index is an equally-weighted index that is designed to measure the performance of the biotechnology sub-industry of the S&P TM Index. The S&P[®] Biotechnology Select Industry Index primarily includes companies in the biotechnology sub-industry and, if fewer than the minimum number of stocks are selected from its primary sub-industry, may include companies in the following supplementary sub-industry: the life sciences tools & services sub-industry. Each of the component stocks in the S&P[®] Biotechnology Select Industry Index is a constituent company within one of the foregoing sub-industries of the S&P TM Index. The S&P[®] Biotechnology Select Industry Index is reported by Bloomberg L.P. under the ticker symbol “SPSIBI.”

The S&P[®] Homebuilders Select Industry Index

The S&P[®] Homebuilders Select Industry Index is an equally-weighted index that is designed to measure the performance of the homebuilding sub-industry of the S&P TM Index. The S&P[®] Homebuilders Select Industry Index primarily includes companies in the homebuilding sub-industry and, if fewer than the minimum number of stocks are selected from its primary sub-industry, may include companies in the following supplementary sub-industries: building products, home furnishings, home improvement retail, homefurnishing retail and household appliances. Each of the component stocks in the S&P[®] Homebuilders Select Industry Index is a constituent company within one of the foregoing sub-industries of the S&P TM Index. The S&P[®] Homebuilders Select Industry Index is reported by Bloomberg L.P. under the ticker symbol “SPSIHO.”

The S&P[®] Oil & Gas Exploration & Production Select Industry Index

The S&P[®] Oil & Gas Exploration & Production Select Industry Index is an equally-weighted index that is designed to measure the performance of the following sub-industries of the S&P TM Index: integrated oil & gas, oil & gas exploration & production and oil & gas refining & marketing. Each of the component stocks in the S&P[®] Oil & Gas Exploration & Production Select Industry Index is a constituent company within one of the foregoing sub-industries of the S&P TM Index. The S&P[®] Oil & Gas Exploration & Production Select Industry Index is reported by Bloomberg L.P. under the ticker symbol “SPSIOP.”

The S&P[®] Retail Select Industry Index

The S&P[®] Retail Select Industry Index is an equally-weighted index that is designed to measure the performance of the following sub-industries of the S&P TM Index: apparel retail, automotive retail, broadline retail, computer & electronic

retail, consumer staples merchandise retail, drug retail, food retailers, and other specialty retail. Each of the component stocks in the S&P[®] Retail Select Industry Index is a constituent company within one of the foregoing sub-industries of the S&P TM Index. The S&P[®] Retail Select Industry Index is reported by Bloomberg L.P. under the ticker symbol “SPSIRE.”

Index Eligibility

To qualify for membership in a Select Industry Index, at each quarterly rebalancing, a stock must satisfy each of the following criteria:

1. A stock must be a member of the S&P TM Index.
2. A stock must be included in the relevant GICS[®] primary sub-industry (or, if fewer than the minimum number of stocks are selected from the relevant primary sub-industry, a supplementary sub-industry as described in 4 below).
3. A stock must meet one of the following float-adjusted market capitalization (“**FMC**”) and float-adjusted liquidity ratio (“**FALR**”) requirements:
 - a. Be a current constituent and have an FMC greater than or equal to \$300 million *and* an FALR greater than or equal to 50%;
 - b. Have an FMC greater than or equal to \$500 million *and* an FALR greater than or equal to 90%; or
 - c. Have an FMC greater than or equal to \$400 million *and* an FALR greater than or equal to 150%.
4. If fewer than 35 stocks are selected for inclusion in a Select Industry Index from the applicable primary sub-industries, for certain Select Industry Indices, stocks from a supplementary list of highly correlated sub-industries (referred to as supplementary stocks) will be selected by the following process:
 - a. All eligible primary stocks are added to the relevant Select Industry Index;
 - b. If there are 35 or more eligible primary stocks, then any current constituents that are supplementary stocks are removed;
 - c. If after step 1 there are less than 35 eligible primary stocks, then supplementary stocks meeting the relevant market capitalization and liquidity thresholds are added in order of their FMC from largest to smallest until the minimum constituent count of 35 stocks is met;
 - d. A buffer is applied in step 3 such that a supplementary stock being added must have an FMC greater than 1.2 times (or 20% higher than) the supplementary stock it is replacing. This buffer is evaluated on each supplementary stock addition relative to the current supplementary stock it is replacing. For example, the largest non-index supplementary stock by FMC is evaluated against the smallest supplementary index constituent, the second largest non-index supplementary stock is evaluated against the second smallest supplementary index constituent, etc. This process is repeated until no supplementary additions exceed the buffer.
5. Additionally, minimum FMC requirements may be relaxed for all Select Industry Indices to ensure that there are at least 22 stocks in each Select Industry Index as of each rebalancing effective date.

Liquidity

A FALR, defined as the annual dollar value traded divided by FMC, is used to measure liquidity. Using composite pricing and consolidated volume (excluding dark pools) across all venues (including historical values), annual dollar value traded is defined as the average closing price multiplied by the historical volume over the 365 calendar days prior to the evaluation date. This is reduced to the available trading period for stocks that do not have 365 calendar days of trading history. In these cases, the dollar value traded available as of the evaluation date is annualized.

Takeover Restrictions

At the discretion of S&P Dow Jones, constituents with shareholder ownership restrictions defined in company bylaws may be deemed ineligible for inclusion in a Select Industry Index. Ownership restrictions preventing entities from replicating the index weight of a company may be excluded from the eligible universe or removed from the applicable

Select Industry Index. S&P Dow Jones will provide up to five days advance notification of a deletion between rebalancings due to ownership restrictions. If S&P Dow Jones decides to remove or exclude a company, that company is ineligible for re-entry or inclusion, respectively, for at least one full calendar year, beginning with the subsequent rebalance.

Multiple Share Classes

For companies with multiple share classes of common stock, S&P Dow Jones determines the share class with both the highest one-year trading liquidity (as defined by median daily value traded) and largest float-adjusted market capitalization as the designated listing. When the liquidity and market capitalization indicators are in conflict, S&P Dow Jones analyzes the relative differences between the two values placing a greater importance on liquidity. Each such company included in a Select Industry Index is represented once by its designated listing.

Calculation of the Select Industry Indices

The Select Industry Indices are equally-weighted, with adjustments to constituent weights to ensure concentration and liquidity requirements, and calculated by the divisor methodology.

The initial divisor is set to have a base index value of 1000 on the applicable base date. The index value is simply the index market value divided by the index divisor.

In order to maintain index series continuity, it is necessary to adjust the divisor at each rebalancing.

Constituent Weightings

At each quarterly rebalancing, constituents are initially equally-weighted, with adjustments made to ensure that no individual constituent's index weight applied to a given theoretical portfolio value (ranging from \$500 million to \$2 billion) exceeds the value that can be traded in a single day.

S&P Dow Jones calculates a maximum basket liquidity weight for each index constituent using the ratio of its three-month median daily value traded to its applicable theoretical portfolio value as of the last business day of February, May, August and November for the rebalancing effective after the closing on the third Fridays of March, June, September and December, respectively.

Each constituent's initial equal weight is compared to the calculated maximum basket liquidity weight and is set to the lesser of its maximum basket liquidity weight or its initial equal weight. If the resulting weights fail to sum to 100%, the weight of the constituent with the lowest maximum basket liquidity weight from the remaining equal weighted constituents is increased to the maximum basket liquidity weight. The relevant Select Industry Index then equal weights the remaining constituents again. This process repeats iteratively until no equal weight stock exceeds the assigned maximum basket liquidity weight and the resulting weights sum to 100%.

If necessary, a final adjustment is made to ensure that no stock in the applicable Select Industry Index has a weight greater than 4.5%. This step of the iterative weighting process may force the weight of those stocks limited to their maximum basket liquidity weight to exceed that weight. In such cases, S&P Dow Jones will make no further adjustments. If any of the Select Industry Indices contain exactly 22 stocks as of the rebalancing effective date, the applicable Select Industry Index is equally weighted without basket liquidity constraints.

Maintenance of the Select Industry Indices

Rebalancing. The membership of the Select Industry Indices is reviewed quarterly. Rebalancings occur after the closing on the third Friday of the quarter ending month. The reference date for additions and deletions is after the closing of the last trading date of the previous month. Closing prices as of the second Friday of the last month of the quarter are used for setting index weights.

Additions. Stocks are added between rebalancings only if a deletion in the applicable Select Industry Index causes the stock count to fall below 22. In those cases, each stock deletion is accompanied with a stock addition. The new stock will be added to the applicable Select Industry Index at the weight of the deleted company.

Deletions. A stock is deleted from the applicable Select Industry Index if the S&P TM Index drops the stock. If a stock deletion causes the number of stocks in the applicable Select Industry Index to fall below 22, each stock deletion is accompanied with a corresponding stock addition. In the case of mergers involving two index constituents, the merged entity remains in the applicable Select Industry Index provided it satisfies the eligibility criteria. If the merged entity qualifies for index inclusion, the stock deemed the target is dropped, the index shares for the acquirer will remain unchanged, and the weightings of the remaining constituents adjust proportionally.

GICS Reclassifications. If a constituent's GICS® classification changes to an ineligible sub-industry for a given Select Industry Index, the constituent is removed from such Select Industry Index at the subsequent rebalancing.

Spin-Offs. The Select Industry Indices follow the S&P TM Index treatment of spin-offs. In general, both the parent and spin-off company remain in the relevant Select Industry Index until the subsequent rebalancing. The spin-off company is added to the relevant Select Industry Index at a zero price at the close of the day before the ex-date. No price adjustment is applied to the parent and there is no divisor change. If the spin-off company is dropped from S&P TM Index the weight of the spun-off company is added back to the parent stock's weight after at least one day of trading.

Adjustments. The table below summarizes the treatment of certain corporate actions.

Corporate Action	Treatment
Change in shares outstanding	Shares outstanding changes are offset by an adjustment factor (" AWF "). There is no change to the market capitalization of the relevant Select Industry Index and no divisor adjustment.
Split/reverse split	Shares outstanding are adjusted by the split ratio. Stock price is adjusted by the split ratio. There is no change to the market capitalization of the relevant Select Industry Index and no divisor adjustment.
Change in IWF	IWF changes are offset by an AWF. There is no change to the market capitalization of the relevant Select Industry Index and no divisor adjustment.
Ordinary dividend	When a company pays an ordinary cash dividend, also referred to as a regular cash dividend, the relevant Select Industry Index does not make any adjustments to the price or shares of the stock. As a result, there are no divisor adjustments to that Select Industry Index.
Special dividend	The stock price is adjusted by the amount of the dividend. The net change to the market capitalization of the relevant Select Industry Index causes a divisor adjustment.
Rights offering	All rights offerings that are in the money on the ex-date are applied under the assumption that the rights are fully subscribed. The stock price is adjusted by the value of the rights and the shares outstanding are increased by the rights ratio. The change in price and shares is offset by an AWF to keep the market capitalization (stock weight) of the relevant Select Industry Index unchanged. There is no change to the market capitalization of that Select Industry Index and no divisor adjustment.

The S&P U.S. Indices

We obtained all information contained in this underlying supplement regarding the S&P 500[®] Index, the S&P MidCap 400[®] Index and the S&P SmallCap 600[®] Index (each, an “**S&P Index**” and collectively, the “**S&P Indices**”) including, without limitation, their make-up, method of calculation and changes in their components, from publicly available information. That information reflects the policies of, and is subject to change by, S&P Dow Jones Indices LLC (“**S&P Dow Jones**”), the index sponsor. S&P Dow Jones has no obligation to continue to publish, and may discontinue publication of, any S&P Index at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the S&P Indices in connection with the offer and sale of securities.

In addition, information about the S&P Indices may be obtained from other sources including, but not limited to, the S&P Indices sponsor’s website (including information regarding the S&P Indices’ sector weightings). We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the S&P Indices is accurate or complete.

The S&P 500[®] Index

The S&P 500[®] Index is published by S&P Dow Jones and is intended to provide an indication of the pattern of common stock price movement in the large capitalization segment of the United States equity market. The S&P 500[®] Index covers approximately 80% of the United States equity market. As of the date of this underlying supplement, to be added to the S&P 500[®] Index, a company must have a market capitalization of \$15.8 billion or more. The S&P 500[®] Index is reported by Bloomberg L.P. under the ticker symbol “SPX.”

The S&P MidCap 400[®] Index

The S&P MidCap 400[®] Index is published by S&P Dow Jones and is comprised of 400 companies selected to provide a performance benchmark for the mid-sized market capitalization segment of the United States equity market. As of the date of this underlying supplement, to be added to the S&P MidCap 400[®] Index, a company must have a market capitalization within the range of \$5.8 billion to \$15.8 billion. The S&P MidCap 400[®] Index is reported by Bloomberg L.P. under the ticker symbol “MID.”

The S&P SmallCap 600[®] Index

The S&P SmallCap 600[®] Index is published by S&P Dow Jones and is comprised of 600 companies selected to provide a performance benchmark for the small market capitalization segment in the United States equity market. As of the date of this underlying supplement, to be added to the S&P SmallCap 600[®] Index, a company must have a market capitalization within the range of \$900 million to \$5.8 billion. The S&P SmallCap 600[®] Index is reported by Bloomberg L.P. under the ticker symbol “SML.”

Composition of the S&P Indices

Changes to the S&P Indices are made on an as needed basis, with no annual or semi-annual reconstitution. Constituent changes are typically announced with at least three business days’ advance notice. Less than three business days’ notice may be given at the discretion of the S&P Dow Jones’ U.S. index committee.

Eligibility Criteria

For each S&P Index, additions to such S&P Index are evaluated based on the following eligibility criteria. These criteria are for additions to an S&P Index, not for continued membership. A stock may be removed from an S&P Index if it violates the eligibility criteria and if ongoing conditions warrant its removal as described below under “Maintenance of the S&P Indices—Deletion from an S&P Index.”

- *Domicile.* The company must be a U.S.-domiciled company. The incorporation and/or registration, operational headquarters location, and primary stock exchange listing are the principal factors determining country of domicile. Other factors considered include the geographic breakdown of revenue and assets, ownership information, location of officers, directors and employees, investor perception, and other factors deemed to be relevant by the S&P Dow Jones’ U.S. index committee.
- *Security Filing Type.* The company issuing the security satisfies the U.S. Securities Exchange Act of 1934’s periodic reporting obligations by filing certain required forms for domestic issuers, such as but not limited Form 10-K annual reports, Form 10-Q quarterly reports, and Form 8-K current reports.

- *Exchange Listing.* A primary listing on one of the following U.S. exchanges is required: NYSE, NYSE Arca, NYSE American, Nasdaq Global Select Market, Nasdaq Select Market, Nasdaq Capital Market, Cboe BZX, Cboe BYX, Cboe EDGA or Cboe EDGX exchanges. Ineligible exchanges include the Over-the-counter (OTC) Markets, including the Pink Open Market.
- *Organizational Structure and Share Type.* Eligible organizational structures and share types are corporations (including equity and mortgage real estate investment trusts) and common stock (*i.e.*, shares). Ineligible organizational structures and share types include, but are not limited to, business development companies, limited partnerships, master limited partnerships, limited liability companies, closed-end funds, exchange-traded funds, exchange-traded notes, royalty trusts, special purpose acquisition companies, tracking stocks, preferred and convertible preferred stock, unit trusts, equity warrants, convertible bonds, investment trusts, rights and American depositary receipts. In addition, the securities of companies with multiple share class structures (including companies with listed and unlisted share classes) are no longer eligible to be added to an S&P Index, but securities already included in an S&P Index have been grandfathered and are not affected by this change.
- *Market Capitalization.* The total company market capitalization should be within the specified range applicable to the S&P Index, as noted above. This range is reviewed at the beginning of each calendar quarter and updated as needed to ensure they reflect current market conditions. Companies passing the total company level market capitalization criteria are also required to have a security level float-adjusted market capitalization (“**FMC**”) that is at least 50% of the applicable S&P Index’s total company level minimum market capitalization threshold.
- *IWF.* For each stock, an investable weight factor (“**IWF**”) is calculated, which is equal to the percentage of such stock’s shares that are freely available for trading in the public market. A stock must have a minimum IWF of 0.1 as of the rebalancing effective date to be eligible for inclusion in an S&P Index.
- *Liquidity.* A float-adjusted liquidity ratio (“**FALR**”), defined as the annual dollar value traded divided by the FMC, is used to measure liquidity. Using composite pricing and consolidated volume (excluding dark pools), annual dollar value traded is defined as the average closing price multiplied by the historical volume over the 365 calendar days prior to the evaluation date. This is reduced to the available trading period for initial public offerings (“**IPOs**”), spin-offs or public companies considered to be U.S. domiciled for index purposes that do not have 365 calendar days of trading history on a U.S. exchange. In these cases, the dollar value traded available as of the evaluation date is annualized. The price, shares outstanding and IWF as of the evaluation date are used to calculate the FMC. The evaluation date is the open of trading on the day prior to the announcement date. The stock should trade a minimum of 250,000 shares in each of the six months leading up to the evaluation date. The FALR must be greater than or equal to 0.75 at the time of addition to an S&P U.S. Index. Current index constituents have no minimum requirement.
- *Financial Viability.* The sum of the most recent four consecutive quarters’ Generally Accepted Accounting Principles (“**GAAP**”) earnings (net income excluding discontinued operations) should be positive as should the most recent quarter. For equity real estate investment trusts, financial viability is based on GAAP earnings and/or funds from operations, if reported.
- *Treatment of IPOs.* IPOs should be traded on an eligible exchange for at least 12 months before being considered for addition to an S&P Index. For former special purpose acquisition companies (“**SPACs**”), S&P Dow Jones considers the de-SPAC transaction to be an event equivalent to an IPO, and 12 months of trading post the de-SPAC event are required before a former SPAC can be considered for inclusion in an S&P Index. Spin-offs or in-specie distributions from existing constituents do not need to be seasoned for 12 months prior to their inclusion in an S&P Index.

Companies that migrate from an ineligible exchange, emerge from bankruptcy, are newly designated to be domiciled in the U.S. for index purposes by S&P Dow Jones or convert from an ineligible share or organizational type to an eligible type do not need to trade on an eligible U.S. exchange for 12 months before being considered for addition.
- *Sector Classification.* Sector balance, as measured by a comparison of each GICS® sector’s weight in the applicable S&P Index with its weight in the S&P Total Market Index, in the relevant market capitalization range, is also considered in the selection of companies for the S&P Indices. The S&P Total Market Index is a float-adjusted, market-capitalization weighted index designed to track the broad equity market, including large-, mid-, small- and micro-cap stocks.

Calculation of the S&P Indices

The S&P Indices are float-adjusted market capitalization-weighted indices. On any given day, the value of an S&P Index is the total FMC of that S&P Index's constituents *divided* by that S&P Index's divisor. The FMC reflects the price of each stock in an S&P Index *multiplied* by the number of shares used in such S&P Index's value calculation.

Float Adjustment. A stock's weight in an S&P Index is determined by the FMC of the stock. Under float adjustment, the share counts in calculating the S&P Indices reflect only those shares available to investors rather than all of a company's outstanding shares. Float adjustment excludes shares that are closely held by control groups, other publicly traded companies, government agencies or other long-term strategic holders given such shares are not available to investors in the public markets.

Divisor. Continuity in index values of an S&P Index is maintained by adjusting its divisor for all changes in its constituents' share capital after its base date. This includes additions and deletions to the relevant S&P Index, rights issues, share buybacks and issuances and non-zero price spin-offs. The value of an S&P Index's divisor over time is, in effect, a chronological summary of all changes affecting the base capital of such S&P Index. The divisor of an S&P Index is adjusted such that the index value of such S&P Index at an instant just prior to a change in base capital equals the index value of such S&P Index at an instant immediately following that change.

Maintenance of the S&P Indices

Changes to index composition are made on an as-needed basis. There is no scheduled reconstitution. Rather, changes in response to corporate actions and market developments can be made at any time. Index additions and deletions are typically announced with at least three business days' advance notice. Less than three business days' notice may be given at the discretion of the S&P Dow Jones' U.S. index committee.

Deletion from an S&P Index. For each S&P Index, deletions from such S&P Index occur as follows:

- A company is deleted from an S&P Index if it is involved in a merger, acquisition or significant restructuring such that it no longer meets the eligibility criteria:
 - A company delisted as a result of a merger, acquisition or other corporate action is removed at a time announced by S&P Dow Jones, normally at the close of the last day of trading or expiration of a tender offer. Constituents that are halted from trading may be kept in the applicable S&P Index until trading resumes, at the discretion of S&P Dow Jones' U.S. index committee. If a stock is moved to the pink sheets or the bulletin board, the stock is removed.
- A company that substantially violates one or more of the eligibility criteria may be deleted at the S&P Dow Jones' U.S. index committee's discretion.

Any company that is removed from an S&P Index (including discretionary and bankruptcy/exchange delistings) must wait a minimum of one year from its removal date before being screened for the eligibility criteria.

S&P Dow Jones believes turnover in S&P Index membership should be avoided when possible. At times a stock included in an S&P Index may appear to temporarily violate one or more of the addition criteria. However, the addition criteria are for addition to an S&P Index, not for continued membership. As a result, an S&P Index constituent that appears to violate criteria for addition to such S&P Index is not deleted unless ongoing conditions warrant an index change. When a stock is removed from an S&P Index, S&P Dow Jones explains the basis for the removal.

Migration. Current constituents of a S&P Composite 1500[®] component index (which include each S&P Index) can be migrated from one S&P Composite 1500[®] component index to another provided they meet the total company level market capitalization eligibility criteria for the new index. Migrations from one S&P Composite 1500[®] index to another do not need to meet the financial viability, liquidity or 50% of the respective index's total company level minimum market capitalization threshold criteria.

Companies that are spun-off from current index constituents do not need to meet the outside addition criteria, but they should be considered U.S. domiciled. For spin-offs, index membership eligibility is determined using when-issued prices, if available. At the discretion of the Index Committee, a spin-off company may be retained in the parent stock's index if the Committee determines it has a total market capitalization representative of the parent index. If the spin-off company's estimated market cap is below the minimum defined in the outside addition criteria but there are other constituent companies in the applicable S&P Index that have a significantly lower total market cap than the spin-off

company, the S&P Dow Jones' U.S. index committee may decide to retain the spin-off company in the applicable S&P Index.

Share Updates. Share counts are updated to the latest publicly available filings on a quarterly basis.

Investable Weight Factor (IWF) Updates. IWF changes are implemented either annually, quarterly or on an accelerated schedule following the relevant event depending on the nature of the change as explained below.

- *Annual Review.* IWFs are reviewed annually based on the most recently available data filed with various regulators and exchanges.
- *Quarterly Review.* IWF changes will only be made at the quarterly review if the change represents at least 5% of total current shares outstanding and is related to a single corporate action that did not qualify for the accelerated implementation rule (as described below). For quarterly reviews that coincide with the annual review, the annual review rules apply.
- *Mandatory Action.* Certain mandatory actions, such as M&A driven share/IWF changes, stock splits, and mandatory distributions, are not subject to a minimum threshold for implementation. In order to minimize index turnover, any IWF changes resulting from such mandatory actions are implemented based on the pre-event IWFs of the securities involved.
- *Accelerated Implementation Rule.* Material share/IWF changes resulting from certain non-mandatory corporate actions follow an accelerated implementation rule with sufficient advance notification. The accelerated implementation rule is intended to reduce turnover intra-quarter while also enhancing opportunities for index trackers to take advantage of non-mandatory material liquidity events.
 - For actions qualifying for accelerated implementation but less than \$1 billion, an adjustment to the company's IWF will only be made to the extent that such an IWF change helps the new float share total mimic the shares available in the offering.
 - For actions qualifying for accelerated implementation and at least \$1 billion, IWF changes are implemented to reflect the shares made available in the offering plus the latest share and ownership information publicly available at the time of the announcement.

Share/IWF Reference Date and Freeze Period. A reference date, after the market close five weeks prior to the third Friday in March, June, September and December, is the cutoff for publicly available information used for quarterly shares outstanding and IWF changes. All shares outstanding and ownership information contained in public filings and/or official sources dated on or before the reference date are included in that quarter's update. In addition, there is a freeze period on a quarterly basis for any changes that result from the accelerated implementation rule. The freeze period begins after the market close on the Tuesday prior to the second Friday of each rebalancing month (i.e., March, June, September and December) and ends after the market close on the third Friday of the rebalancing month.

Pro-forma files for float-adjusted market capitalization indices are generally released after the market close on the first Friday, two weeks prior to the rebalancing effective date. Pro-forma files for capped and alternatively weighted indices are generally released after the market close on the second Friday, one week prior to the rebalancing effective date. For illustration purposes, if rebalancing pro-forma files are scheduled to be released on Friday, March 5, the share/IWF freeze period will begin after the close of trading on Tuesday, March 9, and will end after the close of trading the following Friday, March 19 (i.e., the third Friday of the rebalancing month).

During the share/IWF freeze period, shares and IWFs are not changed and the accelerated implementation rule is suspended, except for mandatory corporate action events (such as merger activity, stock splits and rights offerings). The suspension includes all changes that qualify for accelerated implementation and would typically be announced or effective during the share/IWF freeze period. At the end of the freeze period, all suspended changes will be announced on the third Friday of the rebalancing month and implemented five business days after the quarterly rebalancing effective date.

Companies that are the target of cash M&A events, and publicly available guidance indicates the event is expected to close by quarter end, may have their share count frozen at their current level for rebalancing purposes.

Corporate Action Adjustments. The table below summarizes the types of index maintenance adjustments upon various corporate actions and indicates whether or not a divisor adjustment is required.

Type of Corporate Action	Index Treatment
Company addition/deletion	<p data-bbox="657 216 771 247"><u>Addition</u></p> <p data-bbox="657 268 1516 331">Companies are added at the float market capitalization weight. The net change to the index market capitalization causes a divisor adjustment.</p> <p data-bbox="657 352 771 384"><u>Deletion</u></p> <p data-bbox="657 405 1516 499">The weights of all stocks in the applicable S&P Index will proportionally change. Relative weights will stay the same. The index divisor will change due to the net change in the index market capitalization.</p>
Changes in shares outstanding	Increasing the shares outstanding increases the market capitalization of the applicable S&P Index. Similarly, decreasing the shares outstanding decreases the market capitalization of the applicable S&P Index. The change to the index market capitalization causes a divisor adjustment.
Split/reverse split	Shares outstanding are adjusted by split ratio. Stock price is adjusted by split ratio. There is no change to the index market capitalization and no divisor adjustment.
Spin-off	<p data-bbox="657 791 1516 970">The spin-off is added to the applicable S&P Index on the ex-date at a price of zero. The spin-off index shares are based on the spin-off ratio. On the ex-date the spin-off will have the same attributes as its parent company, and will remain in the applicable S&P Index for at least one trading day. As a result, there will be no change to the index divisor on the ex-date.</p> <p data-bbox="657 991 1516 1142">If the spin-off is ineligible for continued inclusion, it will be removed after the ex-date. The weight of the spin-off being removed is reinvested across all the index components proportionately such that the relative weights of all index components are unchanged. The net change in index market capitalization will cause a divisor change.</p>
Change in IWF	Increasing the IWF increases the market capitalization of the applicable S&P Index. Similarly, decreasing the IWF decreases the market capitalization of the applicable S&P Index. A net change to the index market capitalization causes a divisor adjustment.
Ordinary dividend	When an index component pays an ordinary cash dividend, also referred to as a regular cash dividend, the applicable S&P Index does not make any adjustments to the price or shares of the stock. As a result there are no divisor adjustments to such index component.
Special dividend	The stock price is adjusted by the amount of the dividend. The net change to the index market capitalization causes a divisor adjustment.
Rights offering	All rights offerings that are in the money on the ex-date are applied under the assumption the rights are fully subscribed. The stock price is adjusted by the value of the rights and the shares outstanding are increased by the rights ratio. The net change in market capitalization causes a divisor adjustment.

Other Adjustments. In cases where there is no achievable market price for a stock being deleted, it can be removed at a zero or minimal price at the S&P Dow Jones' U.S. index committee's discretion.

Governance of the S&P Indices

Each S&P Index is maintained by S&P Dow Jones' U.S. index committee. All index committee members are full-time professional members of S&P Dow Jones' staff. The index committee meets monthly. At each meeting, the index committee reviews pending corporate actions that may affect constituents of the S&P Indices, statistics comparing the

composition of the S&P Indices to the market, companies that are being considered as candidates for addition to the S&P Indices, and any significant market events. In addition, the index committee may revise an S&P Index's policy covering rules for selecting companies, treatment of dividends, share counts or other matters.

The Select Sector Indices

We obtained all information contained in this underlying supplement regarding the Consumer Discretionary Select Sector Index, the Energy Select Sector Index, the Financial Select Sector Index, the Health Care Select Sector Index, the Industrials Select Sector Index and the Technology Select Sector Index (each, a “**Select Sector Index**” and collectively, the “**Select Sector Indices**”), including, without limitation, their make-up, method of calculation and changes in their components, from publicly available information. That information reflects the policies of, and is subject to change by, S&P Dow Jones Indices LLC (“**S&P Dow Jones**”), the index sponsor. S&P Dow Jones has no obligation to continue to publish, and may discontinue publication of, any Select Sector Index at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to any Select Sectors Index in connection with the offer and sale of securities.

In addition, information about the Select Sector Indices may be obtained from other sources including, but not limited to, the Select Sector Indices sponsor’s website. We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the Select Sector Indices is accurate or complete.

The Consumer Discretionary Select Sector Index

The Consumer Discretionary Select Sector Index is a modified market capitalization-based index, intended to provide investors with a way to track the movements of certain public companies that represent the consumer discretionary sector of the S&P 500[®] Index. The Consumer Discretionary Select Sector Index includes companies in the following industries: automobile components; automobiles; household durables; leisure products; textiles, apparel and luxury goods; hotels, restaurants and leisure; diversified consumer services; distributors; broadline retail; and specialty retail. The Consumer Discretionary Select Sector Index is one of the Select Sector sub-indices of the S&P 500[®] Index, each of which we refer to as a “Select Sector Index.” The Consumer Discretionary Select Sector Index is reported by Bloomberg L.P. under the ticker symbol “IXY.”

The Energy Select Sector Index

The Energy Select Sector Index is a modified market capitalization-based index, intended to provide investors with a way to track the movements of certain public companies that represent the energy sector of the S&P 500[®] Index. The Energy Select Sector Index includes companies in the following industries: energy equipment and services; and oil, gas and consumable fuels. The Energy Select Sector Index is one of the Select Sector sub-indices of the S&P 500[®] Index, each of which we refer to as a “Select Sector Index.” The Energy Select Sector Index is reported by Bloomberg L.P. under the ticker symbol “IXE.”

The Financial Select Sector Index

The Financial Select Sector Index is a modified market capitalization-based index, intended to provide investors with a way to track the movements of certain public companies that represent the financial sector of the S&P 500[®] Index. The Financial Select Sector Index includes companies in the following industries: banks; financial services; consumer finance; capital markets; mortgage real estate investment trusts; and insurance. The Financial Select Sector Index is one of the Select Sector sub-indices of the S&P 500[®] Index, each of which we refer to as a “Select Sector Index.” The Financial Select Sector Index is reported by Bloomberg L.P. under the ticker symbol “IXM.”

The Health Care Select Sector Index

The Health Care Select Sector Index is a modified market capitalization-based index, intended to provide investors with a way to track the movements of certain public companies that represent the health care sector of the S&P 500[®] Index. The Health Care Select Sector Index includes companies in the following industries: health care equipment and supplies; health care providers and services; health care technology; biotechnology; pharmaceuticals; and life sciences tools and services. The Health Care Select Sector Index is one of the Select Sector sub-indices of the S&P 500[®] Index, each of which we refer to as a “Select Sector Index.” The Health Care Select Sector Index is reported by Bloomberg L.P. under the ticker symbol “IXV.”

The Industrials Select Sector Index

The Industrials Select Sector Index is a modified market capitalization-based index, intended to provide investors with a way to track the movements of certain public companies that represent the industrial sector of the S&P 500[®] Index. The Industrials Select Sector Index includes companies in the following industries: aerospace and defense; building products; construction and engineering; electrical equipment; industrial conglomerates; machinery; trading companies and

distributors; commercial services and supplies; professional services; air freight and logistics; passenger airlines; marine transportation; ground transportation; and transportation infrastructure. The Industrials Select Sector Index is one of the Select Sector sub-indices of the S&P 500® Index, each of which we refer to as a “Select Sector Index.” The Industrials Select Sector Index is reported by Bloomberg L.P. under the ticker symbol “IXI.”

The Technology Select Sector Index

The Technology Select Sector Index is a modified market capitalization-based index, intended to provide investors with a way to track the movements of certain public companies that represent the information technology sector of the S&P 500® Index. The Technology Select Sector Index includes companies in the following industries: IT services; software; communications equipment; technology hardware, storage and peripherals; electronic equipment, instruments and components; and semiconductors and semiconductor equipment. The Technology Select Sector Index is one of the Select Sector sub-indices of the S&P 500® Index, each of which we refer to as a “Select Sector Index.” The Technology Select Sector Index is reported by Bloomberg L.P. under the ticker symbol “IXT.”

Construction of the Select Sector Indices

Each of the component stocks in the Select Sector Indices is a member of the S&P 500® Index. Each stock included in the S&P 500® Index is classified into one of eleven sectors based on the Global Industry Classification Standard (GICS®). Each Select Sector Index is made up of all stocks that are classified in the relevant GICS® sector. The current 11 GICS® sectors are as follows: Communication Services, Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Materials, Real Estate, Information Technology and Utilities. For a description of the selection criteria for the S&P 500® Index, see “Indices—The S&P U.S. Indices” in this underlying supplement.

Weighting of the Select Sector Indices

Each Select Sector Index is capped market capitalization weighted. For capping purposes, the Select Sector Indices are rebalanced quarterly after the close of business on the third Friday of March, June, September and December using the following procedures:

1. The rebalancing reference date is the second Friday of March, June, September and December.
2. With prices reflected on the rebalancing reference date, adjusted for any applicable corporate actions, and membership, shares outstanding, and investable weight factors as of the rebalancing effective date, each company is weighted by float-adjusted market capitalization (“**FMC**”). Modifications are made as described below.
3. If any company has an FMC weight greater than 24%, that company’s weight is capped at 23%. The cap is set to 23% to allow for a 2% buffer. This buffer is meant to mitigate against any company exceeding 25% as of the quarter end diversification requirement date.
4. All excess weight is proportionally redistributed to all uncapped companies within the relevant Select Sector Index.
5. After this redistribution, if the FMC weight of any other company breaches 23%, the process is repeated iteratively until no company breaches the 23% weight cap.
6. The sum of the companies with weights greater than 4.8% cannot exceed 50% of the total index weight. These caps are set to allow for a buffer below the 5% limit.
7. If the rule in paragraph 6 is breached, all companies are ranked in descending order by FMC weight. The weight of the smallest company whose weight is greater than 4.8% that causes the step 6 breach is reduced to 4.5%. This process continues iteratively until step 6 is satisfied.
8. Index share amounts are assigned to each constituent to arrive at the weights calculated above. Since index shares are assigned based on prices one week prior to rebalancing, the actual weight of each constituent at the rebalancing differs somewhat from these weights due to market movements.
9. If, on the second to last business day of March, June, September or December, a company has a weight greater than 24% or the sum of the companies with weights greater than 4.8% exceeds 50%, a secondary rebalancing will be triggered with the rebalancing effective date being after the close of the last business day of the month. This secondary rebalancing will use the closing prices as of the second to last business day of

March, June, September or December, and membership, shares outstanding and investable weight factors as of the rebalancing effective date.

When companies represented in the Select Sector Indices are represented by multiple share classes, maximum weight capping is based on company float-adjusted market capitalization, with the weight of multiple-class companies allocated proportionally to each share class based on its float-adjusted market capitalization as of the rebalancing reference date. If no capping is required, both share classes remain in the relevant Select Sector Index at their natural float-adjusted market capitalization.

Calculation, Maintenance and Governance of the Select Sector Indices

The Select Sector Indices are calculated, maintained and governed using the same methodology as the S&P 500[®] Index, subject to the capping methodology described above. For additional information about the calculation, maintenance and governance of the S&P 500[®] Index, see “Indices—The S&P U.S. Indices” in this underlying supplement.

The STOXX Benchmark Indices

We obtained all information contained in this underlying supplement regarding the STOXX® Europe Total Market Index, the STOXX® Europe 600 Index, the EURO STOXX® Index, the STOXX® Europe 600 Supersector indices, the EURO STOXX® Supersector indices, the STOXX® Europe 50 Index and the EURO STOXX 50® Index (each, a “**STOXX Benchmark Index**” and collectively, the “**STOXX Benchmark Indices**”), including, without limitation, their make-up, method of calculation and changes in their components, from publicly available information. This information reflects the policies of, and is subject to change by, STOXX Limited, a wholly owned subsidiary of Deutsche Börse AG, the index sponsor. The STOXX Benchmark Indices are calculated, maintained and published by STOXX Limited. STOXX Limited has no obligation to continue to publish, and may discontinue publication of, any STOXX Benchmark Index at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the STOXX Benchmark Indices in connection with the offer and sale of securities.

In addition, information about the STOXX Benchmark Indices may be obtained from other sources including, but not limited to, the STOXX Benchmark Indices sponsor’s website. We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the STOXX Benchmark Indices are accurate or complete.

The STOXX® Europe Total Market Index

The STOXX® Europe Total Market Index is a free-float market capitalization weighted index composed of at least 95% of the free-float market capitalization traded on each of the major exchanges of 17 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland and the United Kingdom. The euro price return version of the STOXX® Europe Total Market Index is reported by Bloomberg L.P. under the ticker symbol “BKXP.”

Only common stocks and equities with similar characteristics from financial markets that provide reliable real-time, historical component and currency pricing, and reference and corporate actions data are eligible for inclusion in the STOXX® Europe Total Market Index. In addition, only listed companies on a regulated market on a major exchange as determined by STOXX are eligible to be included in the STOXX® Europe Total Market Index. Investment instruments (Industry Classification Benchmark: 8985 or 8995) and companies that were recently removed from the STOXX® Europe Total Market Index due to mergers and acquisition are not eligible for inclusion in the STOXX® Europe Total Market Index.

Each stock is uniquely assigned to a specific country and listing within the STOXX investable universe. The country classification and listing is based on the country of incorporation, the primary listing and the country with the largest trading volume. American and other depositary receipts (e.g., ADRs/GDRs) are assigned to the same country as the stock on which the receipt is issued. Each country is assigned to one or more regions. The STOXX® Europe Total Market Index is composed of stocks assigned to countries within the Europe region.

All stocks in the investable stock universe of each country included in STOXX® Europe Total Market Index are ranked in terms of their free-float market capitalization at the cut-off date to produce the review list. The largest companies in the investable universe of each country with a cumulative free-float market capitalization up to and including 93% of the investable universe of that country qualify for inclusion in the STOXX® Europe Total Market Index. The stocks covering the next 2% of cumulative free-float market capitalization are selected among the largest remaining current components of the STOXX® Europe Total Market Index representing the portion of capitalization above 93% and up to and including 99%. If the country coverage is still below the defined threshold, then the largest remaining stocks are selected until the country coverage is reached.

No weighting cap factor is applied in calculating the STOXX® Europe Total Market Index.

The STOXX® Europe 600 Index

The STOXX® Europe 600 Index is a free-float-market capitalization weighted index composed of 600 of the largest stocks in terms of free-float market capitalization traded on the major exchanges of 17 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland and the United Kingdom. At any given time, some eligible countries may not be represented in the STOXX® Europe 600 Index. The euro price return version of the STOXX® Europe 600 Index is reported by Bloomberg L.P. under the ticker symbol “SXXP.”

The selection list for the STOXX® Europe 600 Index is composed of the most liquid stock of each component of the STOXX® Europe Total Market Index that has a minimum liquidity of greater than one million EUR measured over 3-month

average daily trading value. From the selection list, the largest 550 stocks qualify for inclusion in the STOXX® Europe 600 Index. The remaining 50 stocks are selected from the largest remaining current components ranked between 551 and 750. If the number of stocks selected is still below 600, the largest remaining stocks are selected until there are enough stocks.

The weighting cap factor limits the weight of each component stock within the STOXX® Europe 600 Index to a maximum of 20% of the STOXX® Europe 600 Index at the time of each review.

The EURO STOXX® Index

The EURO STOXX® Index is a free-float market capitalization weighted index composed of the largest stocks in terms of free-float market capitalization traded on the major exchanges of 11 Eurozone countries: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain. At any given time, some eligible countries may not be represented in the EURO STOXX® Index. The euro price return version of the EURO STOXX® Index is reported by Bloomberg L.P. under the ticker symbol "SXXE."

The EURO STOXX® Index is composed of all of the components of the STOXX® Europe 600 Index that are traded in euros and assigned to countries in the Eurozone.

The weighting cap factor limits the weight of each component stock within the EURO STOXX® Index to a maximum of 20% of the EURO STOXX® Index at the time of each review.

The STOXX® Europe 600 Supersector Indices and the EURO STOXX® Supersector Indices

The STOXX® Europe 600 Index and the EURO STOXX® Index are each divided into 20 supersector indices according to the Industry Classification Benchmark ("ICB"), an international system for categorizing companies that is maintained by FTSE Russell. Each supersector index includes the components of its parent index that have been issued by companies within the relevant ICB supersector. The ICB supersectors are: automobiles and parts; banks; basic resources; chemicals; construction and materials; consumer products and services; energy; financial services; food, beverage and tobacco; health care; industrial goods and services; insurance; media; personal care, drug and grocery stores; real estate; retail; technology; telecommunications; travel and leisure; and utilities.

The STOXX® Europe 600 Banks Index is one of 20 STOXX® Europe 600 Supersector indices and includes stocks composing the STOXX® Europe 600 Index that have been issued by companies in the ICB banks supersector. The banks supersector tracks companies providing a broad range of financial services, including retail banking, loans and money transmissions. The euro price return version of the STOXX® Europe 600 Banks Index is reported by Bloomberg L.P. under the ticker symbol "SX7P."

The EURO STOXX® Banks Index is one of 20 EURO STOXX® Supersector indices and includes stocks composing the EURO STOXX® Index that have been issued by companies in the ICB banks supersector. The banks supersector tracks companies providing a broad range of financial services, including retail banking, loans and money transmissions. The euro price return version of the EURO STOXX® Banks Index is reported by Bloomberg L.P. under the ticker symbol "SX7E."

With respect to each STOXX® Europe 600 Supersector index, the weighting cap factor limits the weight of the highest weighted component stock to a maximum of 30% at the time of each review and limits the weight of the second highest weighted component stock to a maximum of 15% at the time of each review. No weighting cap factor is applied in calculating the EURO STOXX® Supersector indices.

The STOXX® Europe 50 Index

The STOXX® Europe 50 Index is a free-float market capitalization weighted index composed of 50 of the largest stocks in terms of free-float market capitalization traded on the major exchanges of 17 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland and the United Kingdom. At any given time, some eligible countries may not be represented in the STOXX® Europe 50 Index. The euro price return version of the STOXX® Europe 50 Index is reported by Bloomberg L.P. under the ticker symbol "SX5P."

The selection list for the STOXX® Europe 50 Index is composed of the components of the STOXX® Europe 600 Index. In addition, the selection list for the STOXX® Europe 50 Index includes only the top 60% of the free-float market capitalization of each of the 20 STOXX® Europe 600 Supersector indices and all current STOXX® Europe 50 Index component stocks. All the stocks on the selection list are ranked in terms of free-float market capitalization. The largest 40

stocks on the selection list are selected for inclusion in the STOXX[®] Europe 50 Index; the remaining 10 stocks are selected from the largest remaining current stocks ranked between 41 and 60. If the number of stocks selected is still below 50, then the largest remaining stocks are selected until there are 50 stocks.

The weighting cap factor limits the weight of each component stock within the STOXX[®] Europe 50 Index to a maximum of 10% of the STOXX[®] Europe 50 Index at the time of each review.

The EURO STOXX 50[®] Index

The EURO STOXX 50[®] Index is a free-float market capitalization weighted index composed of 50 of the largest stocks in terms of free-float market capitalization traded on the major exchanges of 9 Eurozone countries: Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands and Spain. At any given time, some eligible countries may not be represented in the EURO STOXX 50[®] Index. The euro price return version of the EURO STOXX 50[®] Index is reported by Bloomberg L.P. under the ticker symbol "SX5E."

The selection list for the EURO STOXX[®] 50 Index is composed of the components of the EURO STOXX[®] Index. In addition, the selection list for the EURO STOXX[®] 50 Index includes the top 60% of the free-float market capitalization of each of the 20 EURO STOXX[®] Supersector indices and all current EURO STOXX[®] 50 Index component stocks. All the stocks on the selection list are ranked in terms of free-float market capitalization. The largest 40 stocks on the selection list are selected for inclusion in the EURO STOXX[®] 50 Index; the remaining 10 stocks are selected from the largest remaining current stocks ranked between 41 and 60. If the number of stocks selected is still below 50, then the largest remaining stocks are selected until there are 50 stocks.

The weighting cap factor limits the weight of each component stock within the EURO STOXX[®] 50 Index to a maximum of 10% of the EURO STOXX[®] 50 Index at the time of each review.

STOXX Benchmark Index Maintenance

The composition of each of the STOXX[®] Europe Total Market Index, the STOXX[®] Europe 600 Index, the EURO STOXX[®] Index, the STOXX[®] Europe 600 Supersector Indices and the EURO STOXX[®] Supersector Indices is reviewed quarterly in March, June, September and December. For the STOXX[®] Europe Total Market Index, the review cut-off date is the last trading day of the month following the last quarterly index review. For the remaining STOXX Benchmark Indices, the review cut-off date is the last trading day of the month preceding the review month.

The composition of each of the STOXX[®] Europe 50 Index and the EURO STOXX 50[®] Index is reviewed annually in September. The review cut-off date is the last trading day of August. The composition of the STOXX[®] Europe 50 Index and the EURO STOXX 50[®] Index is also reviewed monthly and components that rank 75 or below are replaced and non-component stocks that rank 25 or above are added.

In addition, changes to country classification and listing are effective as of the next quarterly review. At that time, the relevant STOXX Benchmark Index is adjusted accordingly to remain consistent with its country membership rules by deleting the company where necessary.

The STOXX Benchmark Indices are also reviewed on an ongoing basis. Corporate actions (including initial public offerings, mergers and takeovers, spin-offs, delistings, bankruptcy, and price and share adjustments) that affect a STOXX Benchmark Index composition are immediately reviewed. Any changes are announced, implemented and effective in line with the type of corporate action and the magnitude of the effect.

With respect to the STOXX[®] Europe Total Market Index, removed companies are not replaced. With respect to the STOXX[®] Europe 600 Index, the EURO STOXX[®] Index, the STOXX[®] Europe 600 Supersector Indices, the EURO STOXX[®] Supersector Indices, the STOXX[®] Europe 50 Index and the EURO STOXX 50[®] Index, to maintain the number of components constant, a removed company is replaced by the highest-ranked non-component on the relevant selection list. The selection list is updated on a monthly basis according to the review component selection process.

The free-float factors for each component stock used to calculate each STOXX Benchmark Index are reviewed, calculated and implemented on a quarterly basis and are fixed until the next quarterly review.

STOXX Benchmark Index Calculation

Each STOXX Benchmark Index is calculated with the "Laspeyres formula," which measures the aggregate price changes in the component stocks against a fixed base quantity weight. The formula for calculating the value of a STOXX Benchmark Index can be expressed as follows:

$$\text{Index} = \frac{\text{free-float market capitalization of the relevant STOXX Benchmark Index}}{\text{divisor}}$$

The “free-float market capitalization of the relevant STOXX Benchmark Index” is equal to the sum of the products, for each component stock, of the price, number of shares, free-float factor, weighting cap factor and, if applicable, the exchange rate from the local currency into the index currency of the relevant STOXX Benchmark Index as of the time that STOXX Benchmark Index is being calculated.

The free-float factor of each component stock is intended to reduce the number of shares to the actual amount available on the market. All fractions of the total number of shares that are larger than or equal to 5% and whose holding is of a long-term nature are excluded from the calculation of the STOXX Benchmark Indices, including: cross-ownership (stock owned either by the company itself, in the form of treasury shares, or owned by other companies); government ownership (stock owned by either governments or their agencies); private ownership (stock owned by either individuals or families); and restricted shares that cannot be traded during a certain period or have a foreign ownership restriction. Block ownership is not applied for holdings of custodian nominees, trustee companies, mutual funds, investment companies with short-term investment strategies, pension funds and similar entities.

Each STOXX Benchmark Index is also subject to a divisor, which is adjusted to maintain the continuity of the values of that STOXX Benchmark Index despite changes due to corporate actions. The following is a summary of the adjustments to any component stock of a STOXX Benchmark Index made for corporate actions and the effect of such adjustment on the divisor of that STOXX Benchmark Index, where shareholders of the component stock will receive “B” number of shares for every “A” share held (where applicable).

τ	= withholding tax
Div_t	= dividend amount announced by company
p_{t-1}	= closing price on the day before the ex-date
p_{adj}	= new adjusted price
wf_{t-1}	= weighting factor on the day before the ex-date
wf_{adj}	= new adjusted weighing factor
s_{t-1}	= number of shares on the day before the ex-date
s_{adj}	= new adjusted number of shares
SP	= subscription price

Special Cash Dividend	Divisor
<p>Cash distributions that are outside the scope of the regular dividend policy or that the company defines as an extraordinary distribution.</p> <p>$p_{\text{adj}} = p_{t-1} - \text{Div}_t \times (1 - \tau^*)$</p> <p>* If a withholding tax (τ) applies then $\tau > 0$, else $\tau = 0$.</p>	decreases
Split and Reverse Split	Divisor
<p>$p_{\text{adj}} = p_{t-1} \times A / B$</p> <p>$s_{\text{adj}} = s_{t-1} \times B / A$</p>	unchanged
Rights Offering	
<p>If the subscription price is not available or equal to or greater than the closing price on the day before the ex-date (out-of-the-money), then no adjustment is made.</p> <p>If the subscription price is available as a price range and not as a fixed price, the price and share adjustment is performed only if both lower and upper range are in the money. The average value between lower and upper range will be used as a subscription price.</p>	

Standard Rights Issue	Divisor
$p_{adj} = (pt-1 \times A + SP \times B) / (A + B)$ $s_{adj} = st-1 \times (A + B) / A$	increases
Highly Dilutive Rights Issue	Divisor
<p>A rights offering is considered as Highly Dilutive Rights Issue (HDRI) when the share ratio is larger or equal to 200% but smaller than 2000% ($20 > B/A \geq 2$).</p> <ul style="list-style-type: none"> • Scenario 1: If the rights are tradable on ex-date on the same eligible stock exchange as the parent company: <ul style="list-style-type: none"> ○ The rights will be included into the indices with a theoretical price on the ex-date with the same parameters as the parent company. ○ The rights will be removed at the close of the day they start to trade based on its closing price. ○ If the rights issue results into listing of new shares and satisfy certain criteria relating to free float factors and share adjustments under STOXX methodology, then the number of shares will be increased after the new shares have been listed. • Scenario 2: If the rights are not tradable on ex-date or not tradable on the ex-date on the same eligible stock exchange as the parent company: <ul style="list-style-type: none"> ○ Only a price adjustment will be applied. ○ If the rights issue results into listing of new shares and satisfy certain criteria relating to free float factors and share adjustments under STOXX methodology, then the number of shares will be increased after the new shares have been listed. 	unchanged on ex-date decreases after deletion of rights increases on the day of the share increase decreases on ex-date increases on the day of the share increase
Extremely Dilutive Rights Issue	Divisor
<p>A rights offering is considered as Extremely Dilutive Rights Issue (EDRI) when the share ratio is larger or equal to 2000% ($B/A \geq 20$).</p> <ul style="list-style-type: none"> • Extremely dilutive rights issues with sufficient notice period* are treated as following: STOXX will announce the deletion of the company from all indices following the standard rules for index replacements. The company may enter the indices again at the next periodic index review, but only after the new shares have been listed. • Extremely dilutive rights issues without sufficient notice period are treated as highly dilutive rights issues. <p>* Sufficient notice period means that STOXX is able to announce index changes with two trading days' notice.</p>	Decreases
Ordinary Stock Dividend	Divisor
$p_{adj} = pt-1 \times A / (A + B)$ $s_{adj} = st-1 \times (A + B) / A$	unchanged
Stock Dividend From Treasury Stock (only if treated as a special cash dividend)	Divisor
<p>Stock dividends from treasury stocks will be adjusted as cash dividends.</p> $p_{adj} = pt-1 - pt-1 \times B / (A + B)$	decreases

Stock Dividend From Redeemable Shares (only if treated as a special cash dividend)	Divisor
<p>Stock dividends from redeemable shares will be adjusted as cash dividends. In such a case, redeemable shares are considered as:</p> <ul style="list-style-type: none"> • A separated share line with a fixed price. • Ordinary shares that are self-tendered on the same ex-date. <p>$padj = pt-1 - pt-1 \times B / (A + B)$</p>	decreases
Stock Dividend of Another Company	Divisor
<p>$padj = [(pt-1 \times A) - [(1 - \tau^*) \times \text{price of the other company} \times B]] / A$</p> <p>* If a withholding tax (τ) applies then $\tau > 0$, else $\tau = 0$.</p>	decreases
Return of Capital and Share Consolidation	Divisor
<p>The event will be applied as a combination of cash/special dividend together with a reverse split.</p> <ul style="list-style-type: none"> • If the return of capital is considered as regular cash dividend, then the treatment under "Split and Reverse Split" above applies. • If the return of capital is considered as special cash dividend, then the treatment under "Special Cash Dividend" and "Split and Reverse Split" above apply accordingly. <p>$padj = [pt-1 - \text{capital return announced by company} \times (1 - \tau^*)] \times A / B$</p> <p>* If a withholding tax (τ) applies then $\tau > 0$, else $\tau = 0$.</p> <p>$sadj = st-1 \times B / A$</p>	decreases decreases
Repurchase of Shares/Self-Tender	Divisor
<p>$padj = [(pt-1 \times st-1) - (\text{tender price} \times \text{number of tendered shares})] / sadj$</p> <p>$sadj = st-1 - \text{number of tendered shares}$</p>	decreases
Spin-off	Divisor
<p>The adjusted price ($padj$), the number of shares before the ex-date ($st-1$) and the weighting factor on the day before the ex-date ($wft-1$) refer to the parent company.</p> <p>$padj = (pt-1 \times A - \text{price of spun-off shares} \times B) / A$</p> <p>New number of shares for the spun-off company = $st-1 \times B$</p>	unchanged on ex-date

Combination of Stock Distribution (Dividend or Split) and Rights Offering	Divisor
<p>For the below corporate actions, the following additional assumptions apply:</p> <ul style="list-style-type: none"> • Shareholders receive 'B' new shares from the distribution and 'C' new shares from the rights offering for every 'A' share held. • If 'A' is not equal to one, all the following 'new number of shares' formulas need to be divided by 'A': <ul style="list-style-type: none"> ○ If rights are applicable after stock distribution (one action applicable to another) $\text{padj} = [\text{pt}-1 \times A + \text{SP} \times C \times (1 + B / A)] / [(A + B) \times (1 + C / A)]$ $\text{sadj} = \text{st}-1 \times [(A + B) \times (1 + C / A)] / A$ ○ If stock distribution is applicable after rights (one action applicable to another) $\text{padj} = (\text{pt}-1 \times A + \text{SP} \times C) / [(A + C) \times (1 + B / A)]$ $\text{sadj} = \text{st}-1 \times (A + C) \times (1 + B / A)$ ○ Stock distribution and rights (neither action is applicable to the other) $\text{padj} = (\text{pt}-1 \times A + \text{SP} \times C) / (A + B + C)$ $\text{sadj} = \text{st}-1 \times (A + B + C) / A$ 	<p>increases</p> <p>increases</p> <p>increases</p>
Addition/Deletion of A Company	
<p>No price adjustments are made. The change in market capitalization determines the divisor adjustment. If the change in market capitalization between added and deleted companies of an index increases (decreases), then the divisor increases (decreases). If the change is null, then the divisor remains unchanged.</p>	
Free Float and Shares Changes	
<p>No price adjustments are made. The change in market capitalization determines the divisor adjustment. If the change in market capitalization of an index increases (decreases), then the divisor increases (decreases). If the change is null, then the divisor remains unchanged.</p>	

The Swiss Market Index

We obtained all information contained in this underlying supplement regarding the Swiss Market Index (SMI[®]) (the “SMI[®]”), including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. That information reflects the policies of, and is subject to change by, SIX Group Ltd (“SIX”), the index sponsor. SIX has no obligation to continue to publish, and may discontinue publication of, the SMI[®] at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the SMI[®] in connection with the offer and sale of securities.

In addition, information about the SMI[®] may be obtained from other sources including, but not limited to, the SMI[®] sponsor’s website (including information regarding (i) the SMI[®]’s top ten constituents and their respective weightings and (ii) the sector weightings of the SMI[®]). We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the SMI[®] is accurate or complete.

The SMI[®] is reported by Bloomberg L.P. under the ticker symbol “SMI.”

The SMI[®] is a capped free-float adjusted market capitalization-weighted price return index of the Swiss equity market. The SMI[®] was standardized on June 30, 1988 with an initial baseline value of 1,500 points.

Composition of the SMI[®]

The SMI[®] is composed of the most highly capitalized and liquid stocks of the Swiss Performance Index[®] (“SPI[®]”) and represents more than 75% of the free-float market capitalization of the Swiss equity market. The SMI[®] is composed of the 20 highest ranked securities of the SPI[®], where the ranking of each security is determined by a combination of the following criteria:

- average free-float market capitalization over the last 12 months (compared to the capitalization of the entire SPI[®]); and
- cumulated on order book turnover over the last 12 months (compared to the total turnover of the SPI[®]).

Both figures are each given a weighting of 50% and the result is ranked in descending order to form the selection list. Securities ranked 23 or lower in the selection list are excluded from the SMI[®]. The first 18 securities of the selection list are selected directly into the SMI[®]. To reduce fluctuations in the SMI[®], a buffer is applied for securities ranked 19 to 22. Out of the candidates from ranks 19 to 22, current components are selected with priority over the other candidates. New components out of the buffer are selected until 20 components have been reached.

Instruments that are primary listed on more than one stock exchange and generate less than 50% of their total turnover at SIX Swiss Exchange need to fulfill additional liquidity criteria in order to be selectable for the SMI[®]. For this purpose, at the ordinary index review in September, all index components of the SPI[®] are ranked in descending order according to their cumulative order book turnover of the last 12 months relative to the total turnover of the index universe. For this list, only turnover from exchanges where the instrument has a primary listing is considered. Such an instrument with multiple primary listings may not be ranked lower than 18th on this list in order to be selected for inclusion in the SMI[®]. If such an instrument, which is an index component, is ranked at position 23 or lower, it will be excluded from the SMI[®].

Capped Weighting of the SMI[®]

Each security included in the SMI[®] is weighted according to its free-float market capitalization, which is calculated by multiplying a security’s price by the number of shares and a free-float factor (as described below), subject to the capping requirements described herein. The number of shares and the free-float factor are reviewed on a quarterly basis. Each security included in the SMI[®] with a free-float market capitalization larger than 18% of the total market capitalization of the SMI[®] is capped to that weight of 18% at each quarterly review.

Additionally, the components of the SMI[®] are capped at 18% between two ordinary index reviews as soon as two components exceed a weight of 20% each. If such an intra-quarter breach is observed after the close of markets, the new cap factors are calculated so that any component has a maximum weight of 18%. This cap factor is set to be effective after the close of the following trading day.

The free-float factor is a relative fraction multiplied by the number of shares used with the aim of ensuring that only shares that are available for trading are considered in the calculation of the SMI[®]. The free-float factor is calculated only for shares with voting rights. Large positions in a security that reach or exceed the threshold of 5% and are held in firm hands are subtracted from the total market capitalization. The following positions in a security are deemed to be held in firm hands:

- Shareholding that has been acquired by one person or a group of persons who are subject to a shareholder or lockup agreement.
- Shareholding that has been acquired by one person or a group of persons who, according to publicly known facts, have a long-term interest in a company.

Notwithstanding the above, positions in securities held by institutions of the following kind are deemed free-floating: custodian nominees, trustee companies, investment funds, pension funds and investment companies. SIX classifies at its own discretion persons and groups of persons who cannot be clearly assigned because of their area of activity or the absence of important information. Fund instruments are set to be freely tradable and therefore the free-float factor is defined to be 100%.

If an issuer has issued more than one equity instrument (e.g., registered shares, bearer shares, participation certificates or bonus certificates) it is possible that one issuer is represented in the SMI[®] with more than one instrument. In this case, the free-float market capitalization of those instruments is cumulated for the calculation of the cap factors. If the cumulated index weight exceeds the 18% threshold, the weight is capped accordingly. The cumulated, capped index weight is distributed proportionally based on the free-float market capitalization of those instruments.

Calculation of the SMI[®]

The SMI[®] is calculated using the Laspeyres method with the weighted arithmetic mean of a defined number of securities issues. The index level is calculated by dividing the market capitalizations of all securities included in the SMI[®] by a divisor:

$$I_t = \frac{M_t}{D_t} = \frac{\sum_{i=1}^n s_{i,t} f_{i,t} c_{i,t} p_{i,t} x_{i,t}}{D_t}$$

where:

I = index value	t = time	c = capping factor	i = specific component in the index
M = market value	s = number of shares	p = price	
D = divisor	f = free-float factor	x = exchange rate	n = number of index components

The weight of a particular index component is derived from the proportion of shares available in the market, which is defined as the product of the listed shares ($s_{i,t}$) and the free-float factor ($f_{i,t}$). The cap factor ($c_{i,t}$) is used to scale the relative weight of an index component. To receive the free-float market capitalization of the component, the weight is multiplied by the price ($p_{i,t}$) in index currency ($x_{i,t}$).

The divisor is a technical number used to calculate the SMI[®]. If the market capitalization changes due to a corporate event, the divisor changes while the index level remains the same. The new divisor is calculated on the evening of the day before the corporate event takes effect.

In calculating the SMI[®], the last available price for a given instrument is taken into account. To determine the opening value of the SMI[®], if no price has been paid on the day of calculation, the previous day's closing price is used. Only the prices achieved via the electronic order book of the SIX are used. Since the opening phase may cause price fluctuations, the SMI[®] is first calculated two minutes after the start of an order book trading. For the closing value of the SMI[®], the individual component closing prices from the closing auction are used. If no closing price is available, the price is used which was used in the calculation of the previous index tick.

A final settlement value ("FSV") for use in derivatives is calculated using the first-paid price between 9:00:00 CET and 9:02:15 CET on each business day. If no price is available during this period for a component, the last available price is used.

Maintenance of the SMI®

Ordinary Index Review

Each year on the third Friday of September, the composition of the SMI® is updated in the ordinary index review based on the selection list of June. With the cut-off dates on March 31, September 30 and December 31, a provisional selection list is created, which serves as the basis for the adjustment of extraordinary corporate actions. The number of securities and free-float shares are adjusted on four ordinary adjustment dates a year: the third Friday in March, June, September and December.

Extraordinary Corporate Actions

An extraordinary corporate action is an initial public offering (“IPO”), merger and acquisition activity, spin-off, insolvency or any other event that leads to a listing or delisting. Although there is a clearly defined effective date for an extraordinary corporate action, its effect can usually not be anticipated with a generally valid formula. Since in most cases an extraordinary corporate action involves index-relevant listing or delisting, an extraordinary adjustment of the index composition and its weighting is made.

Newly listed instruments that fulfill the selection criteria of a the SMI® are extraordinarily included in the SMI® on the second trading day and the SMI® is adjusted with the free-float market capitalization from the end of the first trading day. The extraordinary inclusion of a new listing may lead to an extraordinary exclusion of an existing index component.

Extraordinary inclusions are usually implemented after an announcement period of five trading days. Adjusted capping factors are usually implemented after an announcement period of five trading days, but no less than one trading day.

If an IPO of a real estate instrument leads to an extraordinary inclusion, it is included in the SMI® in three equal installments over three trading days starting on the second trading day after the IPO by gradually increasing the number of shares or the free float factor.

In the event of a planned delisting, the exclusion of an index component will be carried out, if possible, at the next ordinary index review on the 3rd Friday in March, June, September or December. However, if the delisting is effective prior to the next ordinary index review, the index component will be excluded from the SMI® on the effective date of the delisting. Similarly, an index component which no longer meets the criteria for remaining in the SMI® due to a pending takeover may be excluded from the SMI® ahead of time. In order to keep the number of components stable for the SMI®, the extraordinarily excluded component is replaced by the first ranked candidate of the applicable selection list.

Extraordinary exclusions and inclusions are usually implemented after an announcement period of five trading days. Adjusted capping factors are usually implemented considering an announcement period of five trading days, but at least of one trading day.

Extraordinary inclusions to the SMI® are made if the selection criteria for the index have been fulfilled during a 3 month period, this on a quarterly basis after close of trading on the 3rd Friday in March, June, September and December as follows:

<u>Latest Listing Date</u>	<u>Earliest Extraordinary Acceptance Date</u>
5 trading days prior to the end of November	March
5 trading days prior to the end of February	June
5 trading days prior to the end of May	September
5 trading days prior to the end of August	December

In the case of major market changes as a result of a corporate action, an instrument may be admitted to the SMI® outside of the accepted admission period as long as it clearly fulfills the index selection rules. For the same reasons, a component can be excluded if the requirements for admission to the SMI® are no longer fulfilled.

In the event of major market changes as a result of a corporate action, the Swiss Index Committee of SIX can decide, based on the request of the Index Commission, that an instrument be included in an index outside the specified deadlines, provided that the selection criteria of the index are clearly met. For the same reasons, however, an index component may also be excluded if the requirements for remaining in the SMI® are no longer met.

The TOPIX® Index

We obtained all information contained in this underlying supplement regarding the TOPIX® Index, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. This information reflects the policies of, and is subject to change by, JPX Market Innovation & Research, Inc. (“JPXI”), the index sponsor. JPXI has no obligation to continue to publish, and may discontinue publication of, the TOPIX® Index at any time. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to the TOPIX® Index in connection with the offer and sale of securities.

In addition, information about the TOPIX® Index may be obtained from other sources including, but not limited to, the TOPIX® Index sponsor’s website (including information regarding the TOPIX® Index’s sector weightings). We are not incorporating by reference into this document the website or any material it includes. Neither we nor any agent makes any representation that such publicly available information regarding the TOPIX® Index is accurate or complete.

The TOPIX® Index is reported by Bloomberg L.P. under the ticker symbol “TPX.”

General

The TOPIX® Index (also known as the “Tokyo Stock Price Index®”) was developed by the Tokyo Stock Exchange, Inc. (the “TSE”). Publication of the TOPIX® Index began on July 1, 1969, based on an initial index value of 100 at January 4, 1968, which was reset at 1,000 on April 1, 1998. The TOPIX® Index is computed and published every second via TSE’s Market Information System and is reported to securities companies across Japan and available worldwide through computerized information networks.

Composition of the TOPIX® Index

The TOPIX® Index is a capped free-float adjusted market capitalization weighted index comprised of domestic common stocks listed on the Tokyo Stock Exchange (TSE) covering an extensive portion of the Japanese stock market. On April 4, 2022, JPXI began revisions to the TOPIX® Index in conjunction with the restructuring of the TSE into three new market segments: the Prime Market, the Standard Market and the Growth Market. Prior to April 4, 2022, the component stocks of the TOPIX® Index consisted of all Japanese common stocks listed on the First Section of the TSE. Japanese stocks admitted to the TSE were previously assigned to one of the First Section, the Second Section or the Mothers. Stocks listed on the First Section were typically limited to larger, longer established and more actively traded issues, stocks listed on the Second Section were typically limited to mid-sized companies and stocks listed on the Mothers were typically limited to high-growth start-up companies. Stocks that were components of the TOPIX® Index as of April 1, 2022 remain as its components after the market restructuring, regardless of their new market segment. However, component stocks with tradeable share market capitalization of under JPY 10 billion on the base date of June 20, 2021 are designated as “phased weighting reduction constituents,” and their weighting will be gradually reduced in ten stages on the last business day of each quarter beginning in October 2022 and ending in January 2025. Subject to a re-evaluation after the fourth stage, they will be removed from the TOPIX® Index on the last business day of January 2025.

Calculation of the TOPIX® Index

The TOPIX® Index is a capped free-float adjusted market capitalization-weighted index. The TOPIX® Index is not expressed in Japanese Yen, but is presented in terms of points (as a decimal figure), rounded to the nearest one-hundredth. The TOPIX® Index is calculated by multiplying 100 by the figure obtained by dividing the current free-float adjusted market value (the current market price per share at the time of the index calculation multiplied by the applicable number of free-float adjusted listed common shares listed at the same instance) (the “Current Market Value”) by the base market value (*i.e.*, the Current Market Value on the base date) (the “Base Market Value”).

The calculation of the TOPIX® Index can be represented by the following formula:

$$\text{Index} = \frac{\text{Current Market Value}}{\text{Base Market Value}} \times 100$$

Individual Constituent Weight Cap. The upper weighting limit for any one constituent of TOPIX® Index is 10%. If an issue’s weight calculated by free-float adjusted market capitalization as of the last business day of every August is over the upper limit, a cap-adjustment ratio for adjustment of weight will be applied to said issue on the last business day of October. Even if the weight again exceeds the upper limit due to stock price movements or other reasons, the cap-adjustment ratio will not be changed until the last business day of the next October.

Number of Shares Used for Index Calculation. The number of shares used in the above calculation is adjusted by multiplying the number of shares listed by a free-float weight (“**FFW**”) ratio. The FFW ratio is the percentage of listed shares deemed to be available for trading in the public market. The purpose of the FFW ratio is to exclude shares that are deemed to be not available to investors in the public markets. JPXI considers the following to be non-free-float shares: shares held by the top 10 major shareholders, treasury and other similar stock (including certain cross-share holdings that have limited voting rights), shares held by board members and other representatives, shares held by other listed companies for investment purposes other than pure investment and other shares deemed by JPXI to unavailable for trading in the market.

Maintenance of the TOPIX® Index

Addition and Deletion of Constituents.

Additions to the component stocks can occur (1) through the initial listing of a company on or transfer to the Prime Market, with those changes taking effect on the last business day of the month after such initial listing; (2) through the initial listing of a new company resulting from a corporate consolidation that results in an index constituent being delisted, with those changes taking effect on the new listing date; (3) through the delisting of an index constituent due to a merger with a surviving stock that is not an index constituent, with those changes taking effect on the delisting date; or (4) through the cancellation, as of the last business day of August 2023, of the designation “Securities on Special Alert” on a former component stock that had caused that stock to be removed from the TOPIX® Index, *provided* that that stock meets tradeable share market capitalization and annual traded value ratio requirements, with those changes taking effect on the last business day of October 2023.

Deletions of constituents can occur due to (1) delisting, resulting from a corporate consolidation, when the surviving company re-lists with the TSE, with those changes taking effect on the initial listing date of the new company (normally two business days after the delisting date); (2) delisting of a company for reasons other than those stated above, with those changes taking effect on the delisting date; or (3) designation of stocks as “securities to be delisted” or “security on special alert”, with those changes taking effect four business days after such designation.

Changes in Number of Shares Used for Index Calculation.

Changes in the number of shares will be made due to changes to the free-float weight ratio using the stock price at the end of trading on the business day before the adjustment date. The free float weight ratio assigned to each listed company is reviewed annually, with timings that vary according to the settlement terms of each such listed company. Free float weights may also be subject to extraordinary review in the case of certain corporate actions (e.g., allocation of new shares to a third party, conversion of preferred shares or exercise of subscription warrants, company spin-offs, mergers, acquisitions, take-over bids) and for other reasons JPXI believes appropriate.

In addition, changes in the number of shares will be made for certain other events including: public offering, third-party-allotment, issues to shareholders with payment, exercise of subscription warrants, conversion of preferred stock, cancellation of treasury stock, merger/acquisition, sale of shares held by the Government of Japan (Nippon Telegraph and Telephone, Japan Tobacco and Japan Post Holdings only), rights offering (limited to cases where the allotted subscription warrant securities are listed), demerger (absorption-type) and other events for which adjustments are deemed appropriate, such as stock splits.

Adjustments to Base Market Value. Whenever the market value of the TOPIX® Index changes due to an increase or decrease in constituents, capital increase or similar events other than market fluctuations, the Base Market Value is adjusted with the aim of maintaining continuity. Such events requiring adjustment include the addition or removal of component stocks as well as changes in the number of shares used for index calculation.

The formula for the adjustment is as follows:

$$\frac{\text{Previous Business Day Market Value}}{\text{Pre-Adjustment Base Market Value}} = \frac{(\text{Previous Business Day Market Value} \pm \text{Adjustment Amount})}{\text{New Base Market Value after adjustment}}$$

where Adjustment Amount is equal to the changes in the number of shares included in the calculation of the TOPIX® Index *multiplied* by the price of those shares used for the purposes of the adjustment.

Therefore,

$$\text{New Base Market Value} = \frac{\text{Old Base Market Value} \times (\text{Previous Business Day Market Value} \pm \text{Adjustment Amount})}{\text{Previous Business Day Market Value}}$$

Previous Business Day Market Value

The Base Market Value remains at the new value until a further adjustment is necessary as a result of another change. As a result of such change affecting the Current Market Value or any stock underlying the TOPIX® Index, the Base Market Value is adjusted in such a way that the new value of the TOPIX® Index will equal the level of the TOPIX® Index immediately prior to such change. No adjustment is made to the Base Market Value, however, in the case of events such as stock splits, gratis allotment of shares (limited to cases where the allotment is of treasury stock) and reverse splits, which theoretically do not affect market value.

Information on the reasons for base market value adjustments, details on the adjustments, adjustment dates and other data is available through TSE's notice system, published daily by TSE based on reports and other information from listed companies.

License Agreements

Prior to offering any securities linked to an index described in this underlying supplement, we will have an agreement with the sponsor of such index, providing us and certain of our affiliates or subsidiaries with a non-exclusive license with the right to use such index in connection with certain securities, including the securities offered by Deutsche Bank AG. For the securities linked to a specific index, the general terms of such license agreement are expected to require us to provide the following disclosure to you:

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EXCHANGE-TRADED FUNDS

The applicable pricing supplement will include a brief description of any exchange-traded fund to which the securities are linked. Such information will be obtained from publicly available sources, without independent verification.

The sponsor of each exchange-traded fund is required to file information specified by the Securities and Exchange Commission (the "SEC") periodically. Information provided to or filed with the SEC under the Securities Act of 1933, as amended (the "Securities Act"), and the Investment Company Act of 1940, as amended (the "Investment Company Act") can be located by reference to the applicable exchange-traded fund SEC file numbers (as set forth in the applicable pricing supplement) and can be accessed via the SEC's website at www.sec.gov. In addition, information may be obtained from other sources including, but not limited to, press releases, newspaper articles and other publicly disseminated documents. None of such publicly available information is incorporated by reference into this underlying supplement or the applicable pricing supplement.

This underlying supplement and any applicable pricing supplement relates only to the securities offered thereby and does not relate to any exchange-traded fund. We will derive all disclosures contained in the applicable pricing supplement regarding an exchange-traded fund from the publicly available documents described in the preceding paragraph. In connection with the offering of the securities, neither we nor any agent has participated in the preparation of such documents or made any due diligence inquiry with respect to any exchange-traded fund. Neither we nor any agent has independently verified the accuracy or completeness of any information with respect to any exchange-traded fund in connection with the offer and sale of securities. Furthermore, we cannot give any assurance that all events occurring prior to the date hereof or the date of the applicable pricing supplement (including events that would affect the accuracy or completeness of the publicly available documents described in the preceding paragraph) that would affect the trading price of a exchange-traded fund (and therefore the price of such exchange-traded fund at the time we price any applicable securities) have been publicly disclosed. Subsequent disclosure of any such events or the disclosure of or failure to disclose material future events concerning a exchange-traded fund could affect the any payments with respect to the applicable securities and therefore the trading prices of such securities.