

## Equity Index Underlying Supplement

To Prospectus dated February 23, 2021 and  
Prospectus Supplement dated February 23, 2021

# HSBC USA Inc. Notes Linked to a Reference Asset

## GENERAL

HSBC USA Inc. from time to time may offer and sell certain senior unsecured debt obligations (the “Notes”) linked to a Reference Asset. The “Reference Asset” is the underlying measure by which we will determine the amount payable on the Notes, if any, and may be based on price movements in, performance of, or other events relating to one or more particular indices, index funds or other securities, currencies, interest rates, consumer prices, or commodities or commodity futures, or baskets comprised of any of those instruments or measures, or other instruments or measures, including the occurrence or nonoccurrence of any event or circumstance, or a combination thereof. This underlying supplement describes certain terms of Notes linked to a Reference Asset that is an index that tracks the performance of equity securities, which we refer to as an “Index,” a basket of equity indices or a basket of instruments or measures that includes an equity index as one of its components. We refer to any instrument or measure that comprises a basket as a “Basket Component,” and collectively as the “Basket Components.” The applicable free writing prospectus or pricing supplement will specify the Reference Asset to which your Notes are linked as well as specific terms of the Notes.

Notwithstanding anything to the contrary set forth in the accompanying prospectus supplement for Notes, Series 1 dated February 23, 2021 (the “Prospectus Supplement”) and the accompanying base prospectus for debt securities, preferred stock, depositary shares, warrants, purchase contracts and units (the “Base Prospectus”) dated February 23, 2021, this underlying supplement describes additional terms of the Notes and some of the potential indices to which the return on the Notes may be linked.

You should read the applicable free writing prospectus or pricing supplement, this underlying supplement, the Prospectus Supplement and the Base Prospectus carefully before you invest in a particular issuance of the Notes. If the terms described in the applicable free writing prospectus or pricing supplement are different or inconsistent with those described herein, the terms described in the applicable free writing prospectus or pricing supplement will govern the applicable Notes.

The descriptions of indices in this underlying supplement only apply to select equity indices to which Notes possibly may be linked. We do not guarantee that we will offer Notes linked to any of the indices described herein. In addition, we may offer Notes linked to one or more equity indices that are not described herein. In such an event, we will describe such additional equity index or indices in the applicable free writing prospectus or pricing supplement, or in another underlying supplement.

This underlying supplement describes the following indices:

- the DAX<sup>®</sup> Index;
- the Dow Jones Industrial Average<sup>®</sup>;
- the EURO STOXX 50<sup>®</sup> Index;
- the EURO STOXX<sup>®</sup> Banks Index
- the FTSE<sup>®</sup> 100 Index;
- the Hang Seng Index;
- the Hang Seng China Enterprises Index;
- the KOSPI 200 Index;
- the MSCI EAFE Index;
- the MSCI Emerging Markets Index;
- the MSCI Europe Index;
- the MSCI Singapore Free Index;
- the MSCI Taiwan Index;
- the NASDAQ-100 Index<sup>®</sup>;
- the Nikkei Stock Average;
- the NYSE<sup>®</sup> FANG+<sup>™</sup> Index;
- the PHLX Housing Sector Index;
- the Russell 2000<sup>®</sup> Index;
- the S&P 100<sup>®</sup> Index;
- the S&P 500<sup>®</sup> Index;
- the S&P 500<sup>®</sup> Low Volatility Index;
- the S&P BRIC 40 Index;
- the S&P MidCap 400<sup>®</sup> Index
- the S&P/ASX 200 Index;
- the S&P 500<sup>®</sup> ESG Index
- the TOPIX<sup>®</sup> Index; and
- the Swiss Market Index

**An investment in the Notes involves certain risks. You should refer to “Risk Factors” beginning on page S-1 of this document and page S-1 of the Prospectus Supplement for risks related to an investment in the Notes.**

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the Notes or passed upon the accuracy or the adequacy of this document, the Base Prospectus, the Prospectus Supplement or any free writing prospectus or pricing supplement. Any representation to the contrary is a criminal offense.

The Notes are not deposit liabilities or other obligations of a bank and are not insured by the Federal Deposit Insurance Corporation or any other governmental agency of the United States or any other jurisdiction, and involve investment risks, including possible loss of the principal amount invested due to the credit risk of HSBC USA Inc.

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In making your investment decision, you should rely only on the information contained or incorporated by reference in the applicable free writing prospectus or pricing supplement, this underlying supplement, any related underlying supplement, the Prospectus Supplement and Base Prospectus. The information in the applicable free writing prospectus or pricing supplement and any related underlying supplement including this underlying supplement may only be accurate as of the dates of each of these documents, respectively.

The Notes described in the applicable free writing prospectus or pricing supplement and this underlying supplement are not appropriate for all investors, and involve important legal and tax consequences and investment risks, which should be discussed with your professional advisers. The applicable free writing prospectus or pricing supplement, any related underlying supplement including this underlying supplement and the accompanying Prospectus Supplement and Base Prospectus do not constitute an offer to sell or a solicitation of an offer to buy the Notes in any circumstances in which such offer or solicitation is unlawful.

In this underlying supplement, “HSBC,” “we,” “us” and “our” refer to HSBC USA Inc., unless the context requires otherwise.

Neither HSBC or the calculation agent, nor any of our or its affiliates, accepts any responsibility for the calculation, maintenance or publication of the Indices described herein or any Successor Indices (as defined below).

## DISCLAIMER

This underlying supplement is not an offer to sell and it is not an offer to buy interests in any of the stocks or other securities comprising any Index. All disclosures contained in this underlying supplement regarding an Index, including its make-up, method of calculation and changes in its components, where applicable, are derived from publicly available information. That information reflects the policies of, and is subject to change by, the applicable Reference Sponsor (as defined herein). Information from outside sources is not incorporated by reference in, and should not be considered a part of, this document. **No website referenced herein is incorporated by reference in, or a part of, this document.** Neither HSBC USA Inc. nor any of its affiliates has made any independent investigation as to the adequacy or accuracy of information about any Index or any other constituent included in any Index contained in this underlying supplement. No Reference Sponsor is under any obligation to continue to publish, and may discontinue or suspend the publication of, the applicable Index at any time. You should make your own investigation into each applicable Index.

If the Notes are linked to an Index not described in this underlying supplement, the applicable free writing prospectus or pricing supplement or a separate underlying supplement will provide information relating to that Index.

## RISK FACTORS

Your investment in the Notes will involve certain risks. We urge you to read the section “Risk Factors” beginning on page S-1 of the Prospectus Supplement, in any related underlying supplement and in the applicable free writing prospectus or pricing supplement in addition to the following risk factors relevant to your Notes. Investing in the Notes is not equivalent to investing directly in any of the stocks or other securities tracked by the relevant Indices. You should understand the risks of investing in the Notes and should reach an investment decision only after careful consideration, with your advisers, of the suitability of the Notes in light of your particular financial circumstances and the information set forth in this underlying supplement, the applicable free writing prospectus or pricing supplement, any other relevant underlying supplement, and the accompanying Prospectus Supplement and Base Prospectus.

You will be subject to significant risks not associated with conventional fixed-rate or floating-rate debt securities. You should not purchase the Notes unless you understand and can bear these investment risks.

### *General risks related to the Notes:*

- **YOUR INVESTMENT IN THE NOTES MAY RESULT IN A LOSS** — Unless otherwise specified in the applicable free writing prospectus or pricing supplement, you may lose your entire investment, and there can be no assurance of the receipt of any amount at maturity. The return on the Notes may be less than the return on conventional fixed-rate or floating-rate debt securities with the same maturity date.
- **THE NOTES ARE SUBJECT TO OUR CREDIT RISK** — The Notes are senior unsecured debt obligations of the issuer, HSBC, and are not, either directly or indirectly, an obligation of any third party. As further described in the accompanying prospectus supplement and prospectus, the Notes will rank on par with all of the other unsecured and unsubordinated debt obligations of HSBC, except such obligations as may be preferred by operation of law. Any payment to be made on the Notes, including any return of principal at maturity, depends on the ability of HSBC to satisfy its obligations as they come due. As a result, the actual and perceived creditworthiness of HSBC may affect the market value of the Notes and, in the event HSBC were to default on its obligations, you may not receive the amounts owed to you under the terms of the Notes.
- **THE NOTES ARE NOT INSURED OR GUARANTEED BY ANY GOVERNMENTAL AGENCY OF THE UNITED STATES OR ANY OTHER JURISDICTION** — The Notes are not deposit liabilities or other obligations of a bank and are not insured or guaranteed by the Federal Deposit Insurance Corporation or any other governmental agency or program of the United States or any other jurisdiction. An investment in the Notes is subject to the credit risk of HSBC, and in the event that HSBC is unable to pay its obligations as they become due, you may not receive the full payments due on the Notes.
- **THE ESTIMATED INITIAL VALUE OF THE NOTES, WHICH WILL BE DETERMINED BY US ON THE PRICING DATE, IS EXPECTED TO BE LESS THAN THE PRICE TO PUBLIC AND MAY DIFFER FROM THE MARKET VALUE OF THE NOTES IN THE SECONDARY MARKET, IF ANY** — The Estimated Initial Value of the Notes will be calculated by us on the pricing date and is expected to be less than the price to public. The Estimated Initial Value will reflect our internal funding rate, which is the borrowing rate we pay to issue market-linked securities, as well as the mid-market value of the embedded derivatives in the Notes. This internal funding rate is typically lower than the rate we would use when we issue conventional fixed or floating rate debt securities. As a result of the difference between our internal funding rate and the rate we would use when we issue conventional fixed or floating rate debt securities, the Estimated Initial Value of the Notes may be lower if it were based on the prices at which our fixed or floating rate debt securities trade in the secondary market. In addition, if we were to use the rate we use for our conventional fixed or floating rate debt issuances, we would expect the economic terms of the Notes to be more favorable to you. We will determine the value of the embedded derivatives in the Notes by reference to our or our affiliates’ internal pricing models. These pricing models consider certain assumptions and variables, which can include volatility and interest rates. Different pricing models and assumptions could provide valuations for the Notes that are different from our Estimated Initial Value. These pricing models rely in part on certain forecasts about future events, which may prove to be incorrect. The Estimated Initial Value does not represent a minimum price at which we or any of our affiliates would be willing to purchase your Notes in the secondary market (if any exists) at any time.
- **THE PRICE OF YOUR NOTES IN THE SECONDARY MARKET, IF ANY, IMMEDIATELY AFTER THE PRICING DATE IS EXPECTED TO BE LESS THAN THE PRICE TO PUBLIC** — The price to public takes into account certain costs. These costs, which, unless specified otherwise in the applicable free writing prospectus or pricing supplement, will be used or retained by us or one of our affiliates, include our affiliates’ projected hedging profits (which may or may not be realized) for assuming risks inherent in hedging our obligations under the Notes and the costs associated with structuring and hedging our obligations under the Notes. If you were to sell your Notes in the secondary market, if any, the price you would receive for your Notes may be less than the price you paid for them because secondary market prices will not take into account these costs. The price of your Notes in the secondary market, if any, at any time after issuance will vary based

on many factors, including the value of the Reference Asset and changes in market conditions, and cannot be predicted with accuracy. The Notes are not designed to be short-term trading instruments, and you should, therefore, be able and willing to hold the Notes to maturity. Any sale of the Notes prior to maturity could result in a loss to you.

- **IF WE WERE TO REPURCHASE YOUR NOTES IMMEDIATELY AFTER THE ORIGINAL ISSUE DATE, THE PRICE YOU RECEIVE MAY BE HIGHER THAN THE ESTIMATED INITIAL VALUE OF THE NOTES** — Assuming that all relevant factors remain constant after the original issue date, the price at which any of the underwriters, dealers, agents or their affiliates may initially buy or sell the Notes in the secondary market, if any, and the value that may initially be used for customer account statements, if any, may exceed the Estimated Initial Value on the pricing date for a temporary period after the original issue date. This temporary price difference may exist because, in our discretion, we may elect to effectively reimburse to investors a portion of the estimated cost of hedging our obligations under the Notes and other costs in connection with the Notes that we will no longer expect to incur over the term of the Notes. We will make such discretionary election and determine this temporary reimbursement period on the basis of a number of factors, including the tenor of the Notes and any agreement we may have with the distributors of the Notes. The amount of our estimated costs which we effectively reimburse to investors in this way may not be allocated ratably throughout the reimbursement period, and we may discontinue such reimbursement at any time or revise the duration of the reimbursement period after the original issue date of the Notes based on changes in market conditions and other factors that cannot be predicted.
- **THE NOTES LACK LIQUIDITY** — The Notes will not be listed on any securities exchange or automated quotation system. None of the underwriters, dealers, agents or their affiliates is required to offer to purchase the Notes in the secondary market, if any exists. Even if there is a secondary market, it may not provide enough liquidity to allow you to trade or sell the Notes easily. Because other dealers are not likely to make a secondary market for the Notes, the price at which you may be able to trade your Notes is likely to depend on the price, if any, at which any of the underwriters, dealers, agents or their affiliates is willing to buy the Notes.
- **OUR TRADING, HEDGING AND OTHER BUSINESS ACTIVITIES MAY CREATE CONFLICTS OF INTEREST WITH YOU** — We or our affiliates may engage in trading activities related to the Reference Asset or the securities included in the Reference Asset that are not for your account or on your behalf. We or our affiliates also may issue or underwrite other financial instruments with returns based upon the Reference Asset. These trading and other business activities may present a conflict of interest between your interest in the Notes and the interests we and our affiliates may have in our proprietary accounts, in facilitating transactions, including block trades, for our or their other customers, and in accounts under our or their management. These trading and other business activities, if they influence the value of the Reference Asset or secondary trading in your Notes, could be adverse to your interests as a beneficial owner of the Notes.

We expect to enter into arrangements or adjust or close out existing transactions to hedge our obligations under the Notes. We or our affiliates also may enter into hedging transactions relating to other securities or instruments, some of which may have returns calculated in a manner related to that of the Notes offered hereby. We may enter into such hedging arrangements with one of our affiliates. Our affiliates may enter into additional hedging transactions with other parties relating to the Notes and the Reference Asset. This hedging activity is expected to result in a profit to those engaging in the hedging activity, which could be more or less than initially expected, or the hedging activity could also result in a loss. We and our affiliates will price these hedging transactions with the intent to realize a profit, regardless of whether the value of the Notes increases or decreases. Any profit in connection with such hedging activities will be in addition to any other compensation that we and our affiliates receive for the sale of the Notes, which creates an additional incentive to sell the Notes to you.

- **THERE MAY BE POTENTIAL CONFLICTS OF INTEREST INVOLVING THE CALCULATION AGENT, WHICH IS EXPECTED TO BE AN AFFILIATE OF OURS** — We have the right to appoint and remove the calculation agent. One of our affiliates is expected to be the calculation agent for the Notes and, as such, will make a variety of determinations relating to the Notes, including the amounts that will be paid on the Notes. Under some circumstances, these duties could result in a conflict of interest between its status as our affiliate and its responsibilities as calculation agent. These conflicts could occur, for instance, in connection with the calculation agent's determination as to whether a Market Disruption Event (as defined below) has occurred. The calculation agent will be required to carry out its duties in good faith and use its reasonable judgment. However, because the calculation agent is expected to be one of our affiliates, potential conflicts of interest could arise. Neither we nor any of our affiliates will have any obligation to consider your interests as a holder of the Notes in taking any action that might affect the value of your Notes.

*General risks related to Indices:*

- **EQUITY MARKET RISKS MAY AFFECT THE TRADING VALUE OF THE NOTES AND THE AMOUNT DUE ON THE NOTES** — We expect that the Reference Asset will fluctuate in accordance with changes in the level of the relevant Index or Indices, the value of equity securities generally and other factors. The financial condition of the issuers of the stocks or other securities tracked by an Index may become impaired or the general condition of the equity market may deteriorate, either of which may cause a decrease in the value of the Reference Asset and thereby affect the value of the Notes. Equity securities are susceptible to general equity market fluctuations and to volatile increases and decreases in value, as market confidence in and perceptions regarding the instrument or instruments comprising an Index change. Investor perceptions regarding the issuer of a stocks or other securities tracked by an Index are based on various and unpredictable factors, including expectations regarding government, economic, monetary and fiscal policies, inflation and interest rates, economic expansion or contraction, and global or regional political, economic, and banking crises. The value of the Reference Asset may be expected to fluctuate until the maturity date.
- **AS A HOLDER OF THE NOTES, YOU WILL NOT HAVE ANY OWNERSHIP INTEREST OR RIGHTS IN THE STOCKS OR OTHER SECURITIES TRACKED BY AN INDEX** — As a holder of the Notes, you will not have any ownership interest or rights in any stocks or other securities tracked by an Index, such as rights to vote, dividend payments or other distributions. In addition, the sponsor of an Index (each, a “Reference Sponsor”) will not have any obligation to consider your interests as a holder of the Notes in taking any action that might affect the level of an Index and the value of the Notes.
- **WE OR OUR AFFILIATES ARE NOT AFFILIATED WITH ANY OF THE REFERENCE SPONSORS** — Unless otherwise specified in the applicable free writing prospectus or pricing supplement, we or our affiliates are not affiliated with any of the Reference Sponsors. We have not made and will not make any independent investigation as to the adequacy or completeness of the information about any equity index or any other constituent included in any Index contained herein or in any applicable free writing prospectus or pricing supplement. You should make your own investigation into the relevant Indices and the Reference Sponsors.
- **OUR OR OUR AFFILIATES’ BUSINESS ACTIVITIES RELATING TO THE STOCKS OR SECURITIES TRACKED BY AN INDEX MAY CREATE CONFLICTS OF INTEREST WITH YOU** — We or our affiliates, at the time of any offering of the Notes or in the future, may engage in business with any company that has stocks or securities that are tracked by an Index, including making loans to, equity investments in, or providing investment banking, asset management, or other services to those companies, their affiliates, and their competitors. In connection with these activities, we or our affiliates may receive information about those companies that we will not divulge to you or other third parties. We or our affiliates have published, and in the future may publish, research reports on one or more of these companies. This research is modified from time to time without notice and may express opinions or provide recommendations that are inconsistent with purchasing or holding your Notes. Any of these activities may affect the market value of the Notes. Any prospective purchaser of the Notes should undertake an independent investigation of the Reference Asset as in its judgment is appropriate to make an informed decision regarding an investment in the Notes. The selection of an Index does not reflect any investment recommendations from us.
- **GOVERNMENTAL REGULATORY ACTIONS COULD RESULT IN MATERIAL CHANGES TO THE COMPOSITION OF AN INDEX AND COULD NEGATIVELY AFFECT YOUR RETURN ON THE NOTES** — Governmental regulatory actions, including but not limited to sanctions-related actions by the U.S. or foreign governments, could make it necessary or advisable for there to be material changes to the composition of an Index, depending on the nature of such governmental regulatory actions and the Index constituent stocks that are affected. If any governmental regulatory action results in the removal of Index constituent stocks that have (or historically have had) significant weights within such Index, such removal, or even any uncertainty relating to a possible removal, could have a material and negative effect on the level of such Index and, therefore, your return on the Notes.

*Additional risks relating to certain Notes with more than one Index comprising the Reference Asset:*

- **THE INDICES COMPRISING THE REFERENCE ASSET MAY NOT MOVE IN TANDEM; AND GAINS IN ONE EQUITY INDEX MAY BE OFFSET BY DECLINES IN ANOTHER EQUITY INDEX** — Price movements in the Indices comprising the Reference Asset may not move in tandem with each other. At a time when the price of one or more Indices increase, the price of one or more of the other Indices may decrease. Therefore, increases in the level of one or more of the Indices comprising the Reference Asset may be moderated, or wholly offset, by lesser increases or decreases in the level of one or more of the other Indices comprising the Reference Asset. If the weightings of the Indices comprising the Reference Asset are not equal, adverse changes in the levels of the Indices that are more heavily weighted could have a greater impact upon the value of the Reference Asset and, consequently, the return on your Notes.

*If the Reference Asset is or includes the Russell 2000<sup>®</sup> Index or the S&P MidCap 400<sup>®</sup> Index or otherwise includes an Index that tracks securities related to small and mid-capitalization companies:*

- **SMALL-CAPITALIZATION OR MID-CAPITALIZATION COMPANIES RISK** — The respective Index may track companies that may be considered small-capitalization or mid-capitalization companies. These companies often have greater stock price volatility, lower trading volume and less liquidity than large-capitalization companies and therefore the respective index level may be more volatile than an investment in stocks issued by larger companies. Stock prices of small-capitalization or mid-capitalization companies may also be more vulnerable than those of larger companies to adverse business and economic developments, and the stocks of small-capitalization or mid-capitalization companies may be thinly traded, making it difficult for the relevant Index to track them. In addition, small-capitalization or mid-capitalization companies are often less stable financially than large-capitalization companies and may depend on a small number of key personnel, making them more vulnerable to loss of personnel. Small-capitalization or mid-capitalization companies are often subject to less analyst coverage and may be in early, and less predictable, periods of their corporate existences. These companies tend to have smaller revenues, less diverse product lines, smaller shares of their product or service markets, fewer financial resources and competitive strengths than large-capitalization companies and are more susceptible to adverse developments related to their products.

*If the Reference Asset is or includes the S&P 500<sup>®</sup> Low Volatility Index or otherwise includes an Index that tracks a low volatility index:*

- **A LOW VOLATILITY INDEX MAY BE VOLATILE** — While the relevant Index may have been designed in part to mitigate the effects of volatility, there is no assurance that it will be successful in doing so. It is also possible that the features of the relevant Index designed to address the effects of volatility will instead adversely affect the return of such Index and, consequently, the return on your Notes.

*If the Reference Asset is or includes the DAX<sup>®</sup> Index, the EURO STOXX 50<sup>®</sup> Index, the EURO STOXX<sup>®</sup> Banks Index, the FTSE<sup>®</sup> 100 Index, the Hang Seng Index, the Hang Seng China Enterprises Index, the KOSPI 200 Index, the MSCI EAFE Index, the MSCI Emerging Markets Index, the MSCI Europe Index, the MSCI Singapore Free Index, the MSCI Taiwan Index, the Nikkei Stock Average, the S&P BRIC 40 Index, the S&P/ASX 200 Index, the TOPIX<sup>®</sup> Index or the Swiss Market Index, or otherwise includes an Index that tracks foreign securities:*

- **RISKS ASSOCIATED WITH NON-U.S. COMPANIES** — An investment in securities linked to the level of an Index that tracks the common stocks of non-U.S. companies involves risks associated with the home countries of such non-U.S. companies. The prices of such non-U.S. companies' common stocks may be affected by political, economic, financial and social factors in the home country of each such non-U.S. company, including changes in such country's government, economic and fiscal policies, currency exchange laws or other laws or restrictions, which could affect the value of the Notes.

The foreign securities tracked by such an Index may have less liquidity and could be more volatile than many of the securities traded in U.S. or other longer-established securities markets. Direct or indirect government intervention to stabilize the relevant foreign securities markets, as well as cross shareholdings in foreign companies, may affect trading levels or prices and volumes in those markets. The other special risks associated with foreign securities may include, but are not limited to: less liquidity and smaller market capitalizations; less rigorous regulation of securities markets; different accounting and disclosure standards; governmental interference; currency fluctuations; higher inflation; and social, economic and political uncertainties.

These factors may adversely affect the performance of the Reference Asset and, as a result, the value of the Notes.

- **SECURITIES PRICES GENERALLY ARE SUBJECT TO POLITICAL, ECONOMIC, FINANCIAL AND SOCIAL FACTORS THAT APPLY TO THE MARKETS IN WHICH THEY TRADE AND, TO A LESSER EXTENT, FOREIGN MARKETS** — Foreign securities markets may be more volatile than U.S. or other securities markets and may be affected by market developments in different ways than U.S. or other securities markets. Also, there generally may be less publicly available information about companies in foreign securities markets than about U.S. companies, and companies in foreign securities markets are subject to accounting, auditing and financial reporting standards and requirements that differ from those applicable to U.S. companies.

In addition, securities prices outside the United States are subject to political, economic, financial and social factors that apply in foreign countries. These factors, which could negatively affect foreign securities markets, include the possibility of changes in a foreign government's economic and fiscal policies, the possible imposition of, or changes in, currency exchange laws or other laws or restrictions applicable to foreign companies or investments in foreign equity securities and the possibility of fluctuations in the rate of exchange

between currencies. Moreover, foreign economies may differ favorably or unfavorably from the United States economy in important respects such as growth of gross national product, rate of inflation, capital reinvestment, resources and self-sufficiency.

The economies of emerging market countries in particular face several concerns, including the relatively unstable governments which may present the risks of nationalization of businesses, restrictions on foreign ownership and prohibitions on the repatriation of assets, and which may have less protection of property rights than more developed countries. These economies may also be based on only a few industries, be highly vulnerable to changes in local and global trade conditions and may suffer from extreme and volatile debt burdens or inflation rates. In addition, local securities markets may trade a small number of securities and may be unable to respond effectively to increases in trading volume, potentially making prompt liquidation of holdings difficult or impossible at times. The risks of the economies of emerging market countries are relevant for Notes where the securities comprising or held by an Index are based or traded in one or more emerging market countries.

The impact of any of the factors set forth above may enhance or offset some or all of any change resulting from another factor or factors.

- **TIME DIFFERENCES BETWEEN THE DOMESTIC AND FOREIGN MARKETS AND NEW YORK CITY MAY CREATE DISCREPANCIES IN THE TRADING LEVEL OR PRICE OF THE NOTES** — Time differences between the domestic and foreign markets may result in discrepancies between the level of the underlying stocks tracked by an Index and the value of the Notes. To the extent that U.S. markets are closed while markets for the underlying stocks tracked by an Index remain open, significant price or rate movements of these underlying stocks may take place that will not be reflected immediately in the value of the Notes. In addition, there may be periods when the relevant foreign markets are closed for trading, causing the level of such Index to remain unchanged for multiple trading days in New York City.

*If the Reference Asset is or includes the EURO STOXX 50® Index, the EURO STOXX® Banks Index, the FTSE® 100 Index, the Hang Seng Index, the Hang Seng China Enterprises Index, the KOSPI 200 Index, the MSCI Singapore Free Index, the MSCI Taiwan Index, the Nikkei Stock Average, the S&P/ASX 200 Index, the TOPIX® Index or the Swiss Market Index or otherwise includes an Index that tracks foreign securities that is not adjusted for exchange rate changes:*

- **THE NOTES WILL NOT BE ADJUSTED FOR CHANGES IN EXCHANGE RATES** — Although the equity securities that comprise the relevant Index are traded in the foreign currencies, and your Notes are denominated in U.S. dollars, such Index and the amount payable on the Notes will not be adjusted for changes in the exchange rates between the U.S. dollar and the foreign currencies. Changes in exchange rates, however, may also reflect changes in the foreign economies that in turn may affect the level of such Index, and therefore the return on your Notes. The amount we will pay in respect of your Notes will be determined solely in accordance with the procedures described in the applicable free writing prospectus or pricing supplement.

*If the Reference Asset is or includes the DAX® Index, the MSCI EAFE Index, the MSCI Emerging Markets Index, the MSCI Europe Index or the S&P BRIC 40 Index or otherwise includes an Index that tracks foreign securities that is adjusted for exchange rate changes:*

- **THE NOTES ARE SUBJECT TO CURRENCY EXCHANGE RISK** —The prices of the securities included in the relevant Index are converted into U.S. dollars for purposes of calculating the level of such Index. As a result, your Notes will be exposed to currency exchange rate risk with respect to each of the currencies in which the equity securities included in such Index trade. Your net exposure will depend on the extent to which such currencies strengthen or weaken against the U.S. dollar and the relative weight of the equity securities included in such Index denominated in each such currency. If, taking into account such weighting, the U.S. dollar strengthens against such currencies, the level of such Index will be adversely affected and, depending on the terms of your Notes, the return on the Notes, if any, may be reduced.

Of particular importance to potential currency exchange risk are:

- the volatility of the exchange rate between the U.S. dollar and relevant currencies in which the stocks or other securities that make up the relevant Index are denominated;
- existing and expected rates of inflation;
- existing and expected interest rate levels;
- the balance of payments in the relative countries and between each country and its major trading partners; and



- the extent of governmental surpluses or deficits in the component countries and the United States.

All of these factors are in turn sensitive to the monetary, fiscal and trade policies pursued by the governments of various component countries and the United States and other countries important to international trade and finance.

*If the Reference Asset is or includes the PHLX Housing Sector Index or otherwise includes an Index that tracks securities related to the real estate industry:*

- **THERE ARE RISKS ASSOCIATED WITH THE U.S. HOUSING CONSTRUCTION MARKET THAT WILL AFFECT THE VALUE OF THE NOTES** — The U.S. housing construction market is significantly affected by national and international factors in general and local economic conditions and real estate markets as well as by weather conditions, natural disasters and geopolitical events, any of which could affect the ability of the companies the stocks of which are included in the relevant Index to conduct their businesses profitably. The U.S. housing construction market is cyclical and has from time to time experienced significant difficulties. The prices of the stocks or other securities included in the relevant Index and, in turn, the level of such Index, will be affected by a number of factors that may either offset or magnify each other, including:
  - a decline in the value of real estate;
  - employment levels and job growth;
  - the availability of financing for home buyers;
  - interest rates;
  - consumer confidence;
  - housing demand;
  - the availability of suitable undeveloped land;
  - raw material and labor shortages and price fluctuations;
  - federal, state and local laws and regulations concerning the development of land, homebuilding, home sales, consumer financing and environmental protection;
  - competition among companies which engage in the homebuilding business; and
  - the supply of homes and other housing alternatives.

In addition, weather conditions and natural disasters such as hurricanes, tornadoes, earthquakes, floods and fires can harm the homebuilding business. In addition, geopolitical events, such as the outbreak or aftermath of war, and related market disruptions could also have a significant impact on the U.S. housing construction market.

The difficulties described above could affect the U.S. housing industry generally or regionally and could cause the price of the stocks or other securities included in the relevant Index, and thus the level of such Index, to decline or remain flat during the term of the Notes.

- **THERE WILL BE NO DIRECT CORRELATION BETWEEN THE VALUE OF THE NOTES OR THE LEVEL OF THE RELEVANT INDEX AND RESIDENTIAL HOUSING PRICES** — There is no direct linkage between the level of the relevant Index and residential housing prices in specific regions or residential housing prices in general. While residential housing prices may be one factor that could affect the prices of the stocks or other securities included in the relevant Index, and consequently the level of such Index, neither the level of the relevant Index nor the Notes are directly linked to movements of residential housing prices and may be affected by factors unrelated to such movements.
- **THERE ARE RISKS ASSOCIATED WITH AN INVESTMENT IN A CONCENTRATED INDUSTRY** — The securities included in the relevant Index are issued by companies that are in the U.S. housing construction industry. Therefore, an investment in the Notes may carry risks similar to a concentrated securities investment in a single industry. The relevant Index may lack diversification and may not have the benefit of other offsetting components which may increase when other components are decreasing. Accordingly, a decline in value of stock prices of companies in the U.S. house construction industry could adversely affect the performance of the relevant Index and, consequently, the value of the Notes.

*If the Reference Asset is or includes the Hang Seng Index, the Hang Seng China Enterprises Index, the KOSPI 200 Index, the MSCI Emerging Markets Index, the MSCI Taiwan Index or the S&P BRIC 40 Index or otherwise includes an Index that tracks foreign securities in emerging markets:*

- **THERE ARE RISKS ASSOCIATED WITH EMERGING MARKETS** — An investment in the Notes will involve risks not generally associated with investments that have no emerging market component. In particular, many emerging nations are undergoing rapid change, involving the restructuring of economic, political, financial and legal systems. Regulatory and tax environments may be subject to change without review or appeal. Many emerging markets suffer from underdevelopment of capital markets and tax regulation. The risk of expropriation and nationalization remains a threat. Guarding against such risks is made more difficult by low levels of corporate disclosure and the unreliability of economic and financial data.

*If the Reference Asset is or includes the FTSE® 100 Index, the Hang Seng Index, the MSCI EAFE Index or the MSCI Europe Index or otherwise includes an Index that tracks our or our affiliates' securities:*

- **EVEN IF OUR OR OUR AFFILIATES' SECURITIES ARE TRACKED BY AN INDEX, WE OR OUR AFFILIATES WILL NOT HAVE ANY OBLIGATION TO CONSIDER YOUR INTERESTS** — Our parent HSBC Holdings plc is currently one of the companies included in the MSCI EAFE Index, the MSCI Europe Index, the Hang Seng Index, and the FTSE® 100 Index. We will not have any obligation to consider your interests as a holder of the Notes in taking any corporate action that might affect the level of the above mentioned indices, or any other Index that tracks or may track our or our affiliates' securities.

## **THE DAX® INDEX**

***The disclosure relating to the DAX® Index (the “DAX”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the DAX.***

***STOXX Ltd. (“STOXX”), an affiliate of the Deutsche Börse AG, Publishes the DAX***

The DAX measures the composite price performance of selected German stocks. The DAX uses only freely available and tradable (“free-float”) shares in the index calculation, which excludes shares held by 5% shareholders (other than (1) asset managers and trust companies, (2) funds and pension funds and (3) investment companies or foreign investment companies, in each case, insofar as they are pursuing short-term investment strategies and their shareholding does not exceed 25% of a company’s share capital) and certain other shares that may be limited in their liquidity. As of the date of this underlying supplement, the DAX is composed of stocks representing the 30 largest and most actively traded companies listed on the FWB® Frankfurt Stock Exchange (the “FWB”). The DAX has a base level of 1,000 as of December 30, 1987.

To be included or to remain in the DAX, companies must satisfy certain criteria. All classes of shares must:

- be listed in the “prime standard” segment of the FWB;
- be traded continuously on FWB’s electronic trading system, Xetra®; and
- have a free float of at least 10% of the outstanding shares.

The companies included in the DAX must also have their legal headquarters or operational headquarters in Germany or, in the case of non-German companies, have the major share of their stock exchange turnover on the FWB and their legal headquarters in a European Union (the “EU”) or European Free Trade Association (the “EFTA”) country.

The primary trading turnover requirement is met if at least 33% of a company’s total turnover within the EU or the EFTA has been transacted via Xetra® and Börse Frankfurt over the last 12 months. The total turnover includes the turnover of all stock listings of the company’s share class that arise due to trading on regulated exchanges and multilateral trading facilities.

With the respective prerequisites being satisfied, component stocks are selected for the DAX according to the following criteria:

- order book turnover on Xetra® and in the FWB’s floor trading (within the preceding 12 months); and
- free-float market capitalization as at a certain reporting date (last trading day of each month).

The market capitalization of a class of shares is determined using the average of the volume-weighted average price (“VWAP”) of the last 20 trading days prior to the last day of the month.

To ensure that the composition of the DAX reflects the market which it aims to represent, STOXX reserves the right to exclude certain companies. The index composition of the DAX is reviewed quarterly in March, June, September and December for significant changes to the component stocks (i.e., if the ranking of eligible stocks based on order book turnover and free-float market capitalization has changed significantly) and a more comprehensive review of the components is undertaken annually in September. Adjustments to the index composition are also made upon the occurrence of specified extraordinary circumstances, such as insolvency. Changes to the composition of the DAX are published after 10 PM CET on the third trading day in March, June, September and December.

### ***Calculation of the DAX***

The DAX is weighted by market capitalization; however, only free-float shares are taken into account. The level of the DAX is based on share prices reported in the Xetra® system. The level of the DAX is calculated according to the Laspeyres formula, which measures the aggregate price changes in the component stocks against the initial December 30, 1987 level of 1,000. The weight of any single company in the DAX is limited to 10% of the index capitalization.

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## **THE DOW JONES INDUSTRIAL AVERAGE®**

***The disclosure relating to the Dow Jones Industrial Average® (the “INDU”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the INDU.***

### ***S&P Dow Jones Indices Publishes the INDU***

The INDU is a price-weighted index of 30 blue-chip stocks, which represent nine economic sectors including consumer discretionary, consumer staples, communication services, energy, financials, health care, industrials, information technology and materials.

According to S&P Dow Jones Indices LLC (“S&P”), the composition of the INDU is determined by the Averages Committee, which is composed of two representatives of The Wall Street Journal (the “WSJ”) and three representatives of S&P. There are no pre-determined criteria for selection of a component stock, except that the INDU is designed to measure the performance of some of the largest U.S. companies and provide suitable sector representation with the exception of the transportation industry group and utilities sector which are covered by other Dow Jones indices. While stock selection is not governed by quantitative rules, a stock typically is added to the index only if the company has an excellent reputation, demonstrates sustained growth and is of interest to a large number of investors. Maintaining adequate sector representation within the index is also a consideration in the selection process. The inclusion of any particular company in the INDU does not constitute a prediction as to the company’s future results of operations or stock market performance. For the sake of continuity, changes to the composition of the INDU are made on an as-needed basis, and typically occur following corporate actions or market developments.

### ***Computation of the INDU***

The INDU is a price-weighted index rather than a market capitalization-weighted index. In essence, the INDU consists of one share of each of the 30 stocks included in the INDU. Thus, the weightings of the components of the INDU are affected only by changes in their prices, while the weightings of stocks in other indices are affected by price changes and changes in shares outstanding.

The INDU is calculated by adding up the prices of the 30 constituent stocks and dividing the total by a divisor. The divisor is adjusted to ensure the continuity of the INDU. The divisor is now an arbitrary number that reflects adjustments over time resulting from spin-offs, rights offerings, stock splits, stock dividends and other corporate actions, as well as additions to and deletions from the INDU. Accordingly, the divisor is no longer equal to the number of components in the INDU. The current divisor of INDU is published daily in the WSJ and other publications.

While S&P currently employs the above methodology to calculate the INDU, no assurance can be given that S&P will not modify or change this methodology in a manner that may affect the performance of the INDU.

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## THE EURO STOXX 50® INDEX

**The disclosure relating to the EURO STOXX 50® Index (the “SX5E”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the SX5E.**

### **STOXX Publishes the SX5E**

The SX5E was created by STOXX, which is owned by Deutsche Börse AG. Publication of the SX5E began on February 26, 1998, based on an initial index value of 1,000 at December 31, 1991. The SX5E is reported daily on the Bloomberg Professional® service under the symbol “SX5E” and on the STOXX website.

### **SX5E Composition and Maintenance**

The SX5E is composed of 50 stocks from 9 Eurozone countries (Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands and Spain) and represents the largest STOXX Supersector leaders in the Eurozone in terms of free-float market capitalization. The SX5E aims to include the 50 Supersector leaders from the EURO STOXX Index by selecting stocks from each of the 20 EURO STOXX Supersectors indices. The 20 STOXX 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 SX5E is weighted by free float market capitalization. Each component's weight is capped at 10% of the SX5E's total free float market capitalization. Free float weights are reviewed quarterly and the SX5E's composition is reviewed annually in September. The review cut-off date is the last trading day of August.

Within each of the 20 EURO STOXX Supersector indices, the component stocks are ranked by free float market capitalization. The largest stocks are added to the selection list until the coverage is close to, but still less than, 60% of the free float market capitalization of the corresponding EURO STOXX Total Market Index Supersector index. If the next-ranked stock brings the coverage closer to 60% in absolute terms, then it is also added to the selection list. All current component stocks are then added to the selection list. The stocks on the selection list are ranked by free float market capitalization. The largest 40 stocks on the selection list are selected for inclusion in the SX5E, and the remaining ten stocks are selected from the largest remaining stocks ranked between 41 and 60. If the component number is still below 50, then the largest remaining stocks on the selection list are added until the SX5E contains 50 stocks. In exceptional cases, STOXX may make additions and deletions to the selection list.

### **SX5E Calculation**

The SX5E 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 index value can be expressed as follows:

$$\text{Index} = \frac{\text{free float market capitalization of the index}}{\text{divisor of the index}}$$

The “free float market capitalization of the index” is equal to the sum of the product of the price, number of shares, free float factor and weighting cap factor for each component stock as of the time the SX5E is being calculated.

The SX5E is also subject to a divisor, which is adjusted to maintain the continuity of SX5E values despite changes due to corporate actions.

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## THE EURO STOXX® BANKS INDEX

**The disclosure relating to the EURO STOXX® Banks Index (the “SX7E”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the SX7E.**

### **STOXX Publishes the SX7E**

The SX7E was created by STOXX, which is owned by Deutsche Börse AG. Publication of the SX7E began on June 15, 1998, based on an initial index value of 100 at December 31, 1991. The SX7E is reported daily on the Bloomberg Professional® service under the symbol “SX7E” and on the STOXX website.

### **Index Composition and Maintenance**

The SX7E is one of the 20 EURO STOXX® Supersector indices that compose the STOXX® Europe 600 Index. The STOXX® Europe 600 Index contains the 600 largest stocks traded on the major exchanges of 17 European countries and is organized into the following 20 supersectors: technology; telecommunications; health care; banks; financial services; insurance; real estate; automobiles and parts; consumer products and services; media; retail; travel and leisure; food; beverage and tobacco; personal care; drug and grocery stores; construction and materials; industrial goods and services; basic resources; chemicals; energy; and utilities. The SX7E includes companies in the banks supersector, which tracks companies providing a broad range of financial services, including retail banking, loans and money transmissions.

The SX7E is weighted by free float market capitalization. All components are subject to a 30% capping for the largest company and a 15% capping for the second-largest company. Free float weights are reviewed quarterly.

The composition of each of the EURO STOXX® Supersector indices is reviewed quarterly. Changes to the component stocks are implemented on the third Friday in each of March, June, September and December and are effective the following trading day. All index components will be adjusted for corporate actions.

### **Index Calculation**

The SX7E 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 index value can be expressed as follows:

$$\text{Index} = \frac{\text{free float market capitalization of the SX7E}}{\text{divisor of the SX7E}}$$

The “free float market capitalization of the SX7E” is equal to the sum of the product of the price, number of shares, free float factor and weighting cap factor for each component stock as of the time the SX7E is being calculated.

The SX7E is also subject to a divisor, which is adjusted to maintain the continuity of SX7E values despite changes due to corporate actions.

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## **THE FTSE® 100 INDEX**

***The disclosure relating to the FTSE® 100 Index (the “UKX”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the UKX.***

### ***FTSE Russell Publishes the UKX***

The UKX is a market-capitalization weighted index calculated, published and disseminated by FTSE Russell (“FTSE”), an independent company wholly owned by the London Stock Exchange Group (the “LSE”). The UKX is designed to measure the composite performance of the 100 largest U.K. domiciled blue chip companies that pass screening for size and liquidity traded on the LSE. The UKX was launched on January 3, 1984 and has a base date of December 30, 1983. The UKX is reported by Bloomberg Professional® service under the ticker symbol “UKX.”

The UKX is calculated by (i) multiplying the per share price of each stock included in the UKX by the number of outstanding shares and by the free float factor applicable to such stock, (ii) calculating the sum of all these products (such sum referred to hereinafter as the “FTSE Aggregate Market Value”) as of the starting date of the UKX and (iii) dividing the FTSE Aggregate Market Value by a divisor which represents the total issued share capital of the UKX on the base date and which can be adjusted to allow changes in the issued share capital of individual underlying stocks (including the deletion and addition of stocks, the substitution of stocks, stock dividends and stock splits) to be made without distorting the UKX. Because of such capitalization weighting, movements in share prices of companies with relatively larger market capitalization will have a greater effect on the level of the entire UKX than will movements in share prices of companies with relatively smaller market capitalization.

The 100 stocks included in the UKX (the “UKX Underlying Stocks”) were selected from a reference group of stocks trading on the LSE which were selected by excluding certain stocks based on screens designed to ensure (i) minimum liquidity standards are met, (ii) accurate and reliable price information is available, (iii) minimum voting rights standards (generally, that greater than 5% of the company’s voting rights are in the hands of unrestricted shareholders) are met, (iv) minimum free float standards (25% if incorporated in the U.K. and 50% in non-U.K. incorporated) are achieved, and (v) other specified standards are observed. The UKX Underlying Stocks were selected from this reference group by selecting 100 stocks with the largest market value. A list of the issuers of the UKX Underlying Stocks is available from FTSE. The UKX is reviewed quarterly by FTSE. The results of the periodic review will be shown to the FTSE Russell Europe, Middle East & Africa Regional Equity Advisory Committee at their next quarterly meeting in order to maintain continuity in the level. The UKX Underlying Stocks may be replaced, if necessary, in accordance with deletion/addition rules which provide generally for the removal and replacement of a stock from the UKX if such stock is delisted or its issuer is subject to a takeover offer that has been declared unconditional or it has ceased to be a viable component of the UKX. 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 111<sup>th</sup> place or below, in each case ranked on the basis of market value.

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## THE HANG SENG INDEX

**The disclosure relating to the Hang Seng Index (the “HSI”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the HSI.**

### **Hang Seng Indexes Company Limited Publishes the HSI**

The HSI is calculated, maintained and published by Hang Seng Indexes Company Limited (“HSIL”) in concert with the HSI Advisory Committee and was first developed, calculated and published on November 24, 1969. The HSI is a free float-adjusted market capitalization weighted stock market index that is designed to reflect the performance of the Hong Kong stock market.

Only companies with a primary listing on the main board of the Stock Exchange of Hong Kong (“SEHK”) are eligible as constituents of the HSI. The HSI excludes stapled securities, foreign companies, biotech companies with stock names with the marker “B” and investment companies listed under Chapter 21 of the Listing Rules of SEHK. In addition, to be eligible for selection, a company: (1) must be among those that constitute the top 90% of the total market value of all primary listed shares on the SEHK (the market value of a company refers to the average of its month-end market capitalizations for the past 12 months of any review period); (2) must be among those that constitute the top 90% of the total turnover of all primary listed shares on the SEHK in a sufficient number of measurement sub-periods (turnover is assessed over the last eight quarterly sub-periods: if a company was in the top 90% in any of the most recent four sub-periods, it receives two points; if it was in the top 90% in any of the latter four sub-periods, it receives one point. A company must attain a “score” of eight points to meet the turnover requirement); and (3) should normally have a listing history of 24 months (there are exceptions for companies that have shorter listing histories but large market values and/or high turnover scores). From the many eligible candidates, final selections are based on the following: (1) the market value and turnover rankings of the companies; (2) the representation of the sub-sectors within the HSI directly reflecting that of the market; and (3) the financial performance of the companies.

### **Calculation of the HSI**

The calculation methodology of the HSI is a free float-adjusted market capitalization weighting with a specified cap on individual constituents according to the table below:

Category	Cap-level
Secondary-listed constituents	5%
Weighted voting rights (WVR) constituents	5%
Other constituents	10%

The weightings of the constituents will be derived in the following manner:

- Initial weightings of the constituents are derived in accordance with the free float-adjusted market value and are capped at 10%
- Any excessive weightings will be re-distributed to constituents with weightings less than 10% in proportion to their original weightings in step (a)
- Step (b) will be repeated until no constituents has a weighting higher than 10%
- If, subsequent to the re-distribution, WVR and/ or secondary-listed constituents with weightings more than 5% emerge, they will be capped at 5% and the excessive weightings will be re-distributed to WVR and/ or secondary-listed constituents with weightings less than 5% and other constituents with weightings less than 10% in proportion to their redistributed weightings in step (c)
- Step (d) will be repeated until no constituents has a weighting higher than their corresponding cap-level as specified in table above.

The formula for the index calculation is as follows:

$$\text{Current Index} = \frac{\sum (P_t \times IS \times FAF \times CF)}{\sum (P_{t-1} \times IS \times FAF \times CF)} \times \text{Yesterday's Closing Index}$$

where:

- $P_t$  : current price at day  $t$ ;  
 $P_{t-1}$  : closing price at day  $t-1$ ;

*IS* : *number of issued shares;*  
*FAF* : *free float-adjusted factor, which is between 0 and 1; and*  
*CF* : *capping factor, which is between 0 and 1.*

The adjustment of the free float-adjusted factors, the calculation of the cap factors and the update of issued shares will be undertaken quarterly. The HSI will also be recapped in the event of constituent changes if the newly added component weighting is higher than the index cap level.

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## THE HANG SENG CHINA ENTERPRISES INDEX

**The disclosure relating to the Hang Seng China Enterprises Index (the “HSCEI”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the HSCEI.**

### **Hang Seng Indexes Company Limited Publishes the HSCEI**

The HSCEI is compiled, published and managed by HSIL in concert with the HSI Advisory Committee. HSCEI is a free float-adjusted market capitalization weighted index with a 10% cap on individual constituent weightings. Launched on August 8, 1994, the HSCEI is comprised of H-shares, which are Hong Kong listed shares of companies incorporated in mainland China (“H-share companies”). The HSCEI had a base value of 1,000 at launch, but was re-based as of January 3, 2000 with a value of 2,000 to align with the Hang Seng Composite Index Series, which launched on October 3, 2001.

The HSCEI is calculated and published in Hong Kong dollars. The HSCEI is reviewed quarterly with data cut-off dates as of the end of each March, June, September and December.

Only H-share companies with a primary listing on the main board of the stock exchange of Hong Kong are eligible as constituents of the HSCEI. It includes the primary or secondary listed shares of companies and Real Estate Investment Trusts (“REITs”). It excludes stapled securities, foreign companies, biotech companies with stock names with the marker “B” and investment companies listed under Chapter 21 of the Listing Rules of the SEHK. A component stock is selected or removed from the HSCEI in the quarterly review process based on the following selection criteria:

- *Listing history requirement.* Stocks should be listed for at least one month prior to the review cut-off date.
- *Turnover screening.* Stocks must have 0.1% turnover velocity for at least ten out of the latest twelve months to maintain their inclusion or to be newly included in the HSCEI. New entrants must also have 0.1% turnover velocity in each of the latest three months. Stocks with a trading history of less than six months must have at least 0.1% turnover velocity in all trading months. Stocks with a trading history of between six and twelve months cannot have more than one month in which they failed to attain a turnover velocity of at least 0.1% and must have attained a turnover velocity of at least 0.1% for each of the latest three months if it is not an existing constituent.

Turnover velocity for a given month is calculated as the median of shares traded daily over that month divided by the free float-adjusted issued shares at month end.

- *Ranking by combined market capitalization.* Of the stocks satisfying the listing history requirement and turnover screening test, the 50 eligible stocks with the highest combined market capitalization will be selected as constituents of the HSCEI. Combined market value is calculated for each stock by adding 50% of full market value to 50% of free float-adjusted market value. In the event of two constituents have identical combined market value, the constituent with the higher full market value will be assigned a higher rank.

### **Calculation Methodology**

The calculation methodology of the HSCEI is a free float-adjusted market capitalization weighting with a specified cap on individual constituents according to the table below:

Category	Cap-level
Secondary-listed constituents	5%
WVR constituents	5%
Other constituents	10%

The weightings of the constituents will be derived in the following manner:

- (a) Initial weightings of the constituents are derived in accordance with the free float-adjusted market value and are capped at 10%
- (b) Any excessive weightings will be re-distributed to constituents with weightings less than 10% in proportion to their original weightings in step (a)
- (c) Step (b) will be repeated until no constituents has a weighting higher than 10%
- (d) If, subsequent to the re-distribution, WVR and/ or secondary-listed constituents with weightings more than 5% emerge, they will be capped at 5% and the excessive weightings will be re-distributed to WVR and/ or

secondary-listed constituents with weightings less than 5% and other constituents with weightings less than 10% in proportion to their redistributed weightings in step (c)

- (e) Step (d) will be repeated until no constituents has a weighting higher than their corresponding cap-level as specified in table above.

The formula of the HSCEI is as follows:

$$\text{Current Index} = \frac{\sum (P_t \times IS \times FAF \times CF)}{\sum (P_{t-1} \times IS \times FAF \times CF)} \times \text{Yesterday's Closing Index}$$

where:

$P_t$	:	Current price at Day $t$
$P_{t-1}$	:	Current Price at Day $t-1$
$IS$	:	Issued Shares
$FAF$	:	Free float Adjusted Factor, which is between 0 and 1
$CF$	:	Capping Factor, which is between 0 and 1

**Rebalancing.** There will be a quarterly adjustment of the free float-adjusted factors (FAFs), calculation of the Cap Factors ("CFs") and update of issued shares ("IS"). The rebalancing usually will be implemented after the close of market on the first Friday in March, June, September and December and will be effective on the next trading day. In the event of corporate actions such as bonus issue, rights issue, stock splits and stock consolidations, the IS will be updated simultaneously with the index adjustment. Such ad hoc rebalancing will be conducted if a constituent's IS and/or FAF is substantially different from the production data. The HSCEI will also be recapped in the event of constituent changes if the newly added component weighs higher than the index cap level. A minimum of two trading days' notice will be given to subscribers of data products issued by HSIL for any ad hoc rebalancing.

**Reserve list.** The five non-constituent stocks with the highest combined market capitalization rank will be on the reserve list and will be used to replace any constituent that is removed due to stock suspension or delisting in between the regular reviews.

**Trading suspension.** Whether or not to remove a suspended constituent from the HSCEI and replace it with an appropriate candidate will be determined in the regular index reviews. Should a suspended constituent be removed from the HSCEI, its last traded price may be adjusted down to the lowest price in the system (i.e., \$0.0001 in the security's price currency) or an official residual price (if available) for index calculation on the trading day preceding the effective date of the constituent changes.

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## THE KOSPI 200 INDEX

***The disclosure relating to the KOSPI 200 Index (the “KOSPI2”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the KOSPI2.***

The KOSPI2 is a capitalization-weighted index of 200 Korean blue-chip stocks listed on the KOSPI (Korea Composite Stock Price Index). The KOSPI2 is calculated, maintained and published by the Korea Exchange (“KRX”). The constituent stocks are selected on the basis of their market value, liquidity and representativeness of the respective market and industry groups. The KOSPI2 was developed with a base value of 100 as of January 3, 1990. The KOSPI2 is reported by Bloomberg Professional® service under the ticker symbol “KOSPI2.”

### **Selection Criteria**

Eligible securities for the KOSPI2 are the common stocks listed on the KOSPI market as of the last trading day in the second month preceding rebalancings, excluding:

- companies on the KRX’s watchlist or scheduled to be delisted;
- collective investment institutions, foreign securities, and depository receipts;
- companies investing in real estate, ship, or social infrastructure, mutual funds, and special purpose acquisition companies;
- issues of which free-float rate is under ten percent; and
- companies that have been listed on the KOSPI market for six months or less, subject to certain exceptions.

Issues eligible for inclusion in the KOSPI2 are classified into ten sectors: (i) energy, (ii) materials, (iii) industrials, (iv) customer discretionary, (v) customer staples, (vi) health care, (vii) financials and real estate, (viii) information technology, (ix) communication services, and (x) utilities.

Constituents are selected in a 2-step process:

1. In each sector, companies of which average daily trading value ranking (liquidity basis) is not within 85 percent of the number of eligible companies in a given sector are removed. Next, companies not in 85 percent by cumulative market capitalization in a given sector are removed. The first company that crosses the 85 percent mark is saved.
2. Current index constituents with average daily market capitalization ranking is within 110 percent of the number of current constituents in a given sector are included in the index, if they meet the liquidity requirement.

Non-constituents are selected for index inclusion if their average daily market capitalization ranking is within 90 percent of the number of current constituents in a given sector.

If the 200 company target count has not been reached so far, remaining companies that meet the liquidity requirement are selected regardless of company classification in order by average daily market capitalization, until 200 stocks are included.

When the stock target count has been over-reached, companies are deleted regardless of company classification in ascending order of averaged daily market capitalization until the target count of 200 companies is satisfied.

***Exceptional addition of large-scale companies.*** A company that fails to meet the constituent selection criteria but is in the top 50 common stocks in the KOSPI market by market capitalization, is subject to index inclusion considering sectoral balance and liquidity. In such case, the company replaces a company with the smallest average daily market capitalization among the selected companies. The market capitalization refers to the average daily market capitalization over the 15 trading days from the screening base date.

***Reserved issues.*** In each sector, the largest 10 remaining stocks by average daily market capitalization become the replacement pool for the index if they meet the liquidity requirement and are eligible to be included in the index, in case of any delisting or other such deletion of an existing index constituent.

### **Index Calculation**

The KOSPI2 is calculated using a free float adjusted market capitalization weighted methodology. The KOSPI2 is computed by multiplying (i) the market capitalization as of the calculation time divided by the market capitalization as of the base date, by (ii) 100. Market capitalization is obtained by multiplying the number of listed common shares of the constituents by the price of the applicable common share.

### **Index Maintenance**

***Index rebalancing.*** The KOSPI2 is biannually reconstituted using the constituent selection criteria. An index committee

reviews the KOSPI2 constituents. Rebalancing takes place on the trading day following the last trading day of the June and December delivery month for KOSPI2 futures contracts. Selected companies are confirmed as constituents in May and November after the Index Committee's review before being published on the KRX index website.

*Ongoing event-related changes.* A constituent is deleted from the KOSPI2 when it is delisted from the market, put on the KRX's watch list or merged with another issues. Otherwise KRX can remove constituents from the KOSPI2 if the issue does not meet the eligibility requirements. At the same time, a reserved issue in the corresponding sector is added to the KOSPI2. Additionally, special entry rules apply to spin-offs and new listings.

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## THE MSCI INDICES

***The disclosure relating to the MSCI Indices (as defined below) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes a MSCI Index.***

### ***MSCI, Inc. Publishes the MSCI Indices***

MSCI, Inc. (“MSCI”) calculates and maintains indices that are part of the “MSCI Global Investable Market Indexes” (the “MSCI Indices”), including the MSCI EAFE Index, the MSCI Emerging Markets Index (the “MSCI Emerging Markets Index”), the MSCI Europe Index, the MSCI Singapore Free Index and the MSCI Taiwan Index.

### ***Description of the MSCI Indices***

#### The MSCI EAFE Index

The MSCI EAFE Index offers a representation of developed markets in Europe, Australasia and the Far East including the following countries as of the date of this document: 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 U.K. The MSCI EAFE Index aims to capture 85% of the free float adjusted market capitalization of each country. It is based on the MSCI Global Investable Market Indexes methodology, which emphasizes index liquidity, investability and replicability. The MSCI EAFE Index has a base value of 100 and a base date of December 31, 1969.

The MSCI EAFE Price Index in USD is reported by Bloomberg Professional® service under the ticker symbol “MXEA.”

#### The MSCI Emerging Markets Index

The MSCI Emerging Markets Index offers a representation of emerging markets based on the following countries as of the date of this document Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Qatar, Russia, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates. The MSCI Emerging Markets Index aims to capture 85% of the free float-adjusted market capitalization in each country. It is based on the MSCI Global Investable Market Indexes methodology, which emphasizes index liquidity, investability and replicability.

The MSCI Emerging Markets® Price Index in USD is reported by Bloomberg Professional® service under the ticker symbol “MXEF.”

#### The MSCI Europe Index

The MSCI Europe Index offers a representation of developed markets in Europe including the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the U.K. The MSCI Europe Index aims to capture 85% of the free float adjusted market capitalization of each country. It is based on the MSCI Global Investable Market Indexes methodology, which emphasizes index liquidity, investability and replicability.

The MSCI Europe Price Index in USD is reported by Bloomberg Professional® service under the ticker symbol “MXEU.”

#### The MSCI Singapore Free Index

The MSCI Singapore Free Index offers a representation of the Singaporean market. The MSCI Singapore Free Index is a free-float adjusted capitalization weighted and aims to capture 85% of the publically available market capitalization of the Singaporean investable equity universe; companies are subject to a global minimum size requirement. It is based on the MSCI Global Investable Market Indexes methodology.

The MSCI Singapore Free Price Index in SGD is reported by Bloomberg Professional® service under the ticker symbol “SIMSCI.”

#### The MSCI Taiwan Index

The MSCI Taiwan Index is designed to measure the performance of the large and midcap segments of the Taiwan market. The MSCI Taiwan Index aims to capture 85% of the free-float adjusted market capitalization of Taiwan, subject to a global minimum size requirement. It is based on the MSCI Global Investable Market Indexes methodology.

The MSCI Taiwan Price Index in TWD is reported by Bloomberg Professional® service under the ticker symbol “TAMSCI.”

## **MSCI Global Investable Market Indices Methodology**

### **Constructing the MSCI Global Investable Market Indices**

MSCI undertakes an index construction process, which involves: (i) identifying eligible equity securities and classifying those eligible securities into the appropriate country (defining the “Equity Universe”); (ii) applying investability screens to individual companies and securities in the Equity Universe that are classified in that market (determining the “Market Investable Equity Universe” for each market); (iii) determining market capitalization size-segments for each market; (iv) applying index continuity rules for an index that includes 85% ± 5% of the Market Investable Equity Universe (the “MSCI Standard Index”); (v) creating style segments within each size-segment within each market; and (vi) classifying securities under the Global Industry Classification Standard (“GICS”).

#### *Defining the Equity Universe*

(i) **Identifying Eligible Equity Securities:** The Equity Universe initially looks at securities listed in countries which are classified as either developed markets (“Developed Market” or “DM”) or emerging markets (“Emerging Market” or “EM”). All listed equity securities, or listed securities that exhibit characteristics of equity securities, except mutual funds (U.S. Business Development Companies are eligible), exchange-traded funds, equity derivatives, limited partnerships structured to be taxed as limited partnerships, and most investment trusts, are eligible for inclusion in the Equity Universe. REITs in some countries and certain income trusts in Canada are also eligible for inclusion.

(ii) **Country Classification of Eligible Securities:** Each company and its securities (i.e., share classes) is classified in one and only one country, which allows for 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 an eligible listing 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 investability screens used to determine the Investable Equity Universe in each market are as follows:

(i) **“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. To determine this minimum size requirement, the companies in the DM Equity Universe are sorted in descending order of full market capitalization and the cumulative coverage of the free float-adjusted market capitalization of the DM Equity Universe is calculated at each company. When the cumulative free float-adjusted market capitalization coverage of 99% of the sorted Equity Universe is achieved, the full market capitalization of the company at that point defines the Equity Universe Minimum Size Requirement.

(ii) **Equity Universe Minimum 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.

(iii) **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. A minimum liquidity level of 20% of 3-month Annualized Traded Value Ratio (“ATVR”) and 90% of 3-month Frequency of Trading over the last 4 consecutive quarters, as well as 20% of 12-month ATVR are required for the inclusion of a security in a Market Investable Equity Universe of a Developed Market. A minimum liquidity level of 15% of 3-month ATVR and 80% of 3-month Frequency of Trading over the last 4 consecutive quarters, as well as 15% of 12-month ATVR are required for the inclusion of a security in a Market Investable Equity Universe of an Emerging Market. In instances when a security does not meet the above criteria, the security will be represented by a relevant liquid eligible Depositary Receipt if it is trading in the same geographical region. Depositary Receipts are deemed liquid if they meet all the above mentioned criteria for 12-month ATVR, 3-month ATVR and 3-month Frequency of Trading. In addition, securities with stock prices above USD 10,000 fail the liquidity screening unless they are already constituents of the MSCI Global Investable Market Indices.

(iv) **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 MSCI Standard Index's ability to fully and fairly represent the characteristics of the underlying market.

(v) "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 four months before the implementation of the initial construction of the index or 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.

(vi) 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 (referred to as "foreign room") must be at least 15%.

#### *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:

- Investable Market Index (Large + Mid + Small)
- Standard Index (Large + Mid)
- Large Cap Index
- Mid Cap Index
- Small Cap Index

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 and index continuity rules.

#### *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. The application of this requirement involves the following steps:

If after the application of the index construction methodology, a Standard Index contains fewer than five securities in a Developed Market or three securities in an Emerging Market, then the largest securities by free float-adjusted market capitalization are added to the Standard Index in order to reach five constituents in that Developed Market or three in that Emerging Market. At subsequent Index Reviews, if the free float-adjusted market capitalization of a non-index constituent is at least 1.50 times the free float-adjusted market capitalization of the smallest existing constituent after rebalancing, the larger free float-adjusted market capitalization security replaces the smaller one.

When the index continuity rule is in effect, the market size-segment cutoff is set at 0.5 times the global minimum size reference for the Standard Index rather than the full market capitalization of the smallest company in that market's Standard Index.

#### *Creating Style Indices within Each Size-Segment*

All securities in the investable equity universe are classified into Value or Growth segments using the MSCI Global Value and Growth methodology.

#### *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, the GICS. The GICS entails four levels of classification: (1) sector; (2) industry group; (3) industries; and (4) sub-industries. Under the GICS, each company is assigned 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.

## Index Calculation

### Price Index Level

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, the level of the relevant MSCI index level is obtained by applying the change in the market performance to the previous period level for such MSCI index.

$$\text{Price Index Level USD}_t = \text{PriceIndexLevelUSD}_{t-1} \times \frac{\text{Index Adjusted Market Cap USD}_t}{\text{Index Initial Market Cap USD}_t}$$

$$\text{Price Index Level Local}_t = \text{PriceIndexLevelLocal}_{t-1} \times \frac{\text{Index Adjusted Market Cap For Local}_t}{\text{Index Initial Market Cap USD}_t}$$

Where:

- *Price Index Level USD<sub>t-1</sub>* is the Price Index level in USD at time t-1
- *Index Adjusted Market Cap USD<sub>t</sub>* is the Adjusted Market Capitalization of the index in USD at time t
- *Index Initial Market Cap USD<sub>t</sub>* is the Initial Market Capitalization of the index in USD at time t
- *Price Index Level Local<sub>t-1</sub>* is the Price Index level in local currency at time t-1
- *Index Adjusted Market Cap For Local<sub>t</sub>* is the Adjusted Market Capitalization of the index in USD converted using FX rate as of t-1 and used for local currency index at time t

### Index Market Capitalization

Index Adjusted Market Cap USD<sub>t</sub> =

$$\sum_{s \in I, t} \frac{\text{End of Day Number of Shares}_{s,t-1} \times \text{Price Per Share}_t \times \text{Inclusion Factor}_t \times \text{PAF}_t}{\text{FXrate}_t}$$

Index Adjusted Market Cap For Local<sub>t</sub> =

$$\sum_{s \in I, t} \left( \frac{\text{End of Day Number of Shares}_{s,t-1} \times \text{Price Per Share}_t \times \text{Inclusion Factor}_t \times \text{PAF}_t}{\text{FXrate}_{t-1}} \times \frac{\text{ICL}_t}{\text{ICL}_{t-1}} \right)$$

Index Initial Market Cap USD<sub>t</sub> =

$$\sum_{s \in I, t} \frac{\text{End of Day Number of Shares}_{s,t-1} \times \text{Price Per Share}_t \times \text{Inclusion Factor}_t}{\text{FXrate}_{t-1}}$$

Where:

- *End Of Day Number Of Shares<sub>t-1</sub>* is the number of shares of security s at the end of day t-1.
- *Price Per Share<sub>t</sub>* is the price per share of security s at time t.
- *Price Per Share<sub>t-1</sub>* is the price per share of security s at time t-1.
- *Inclusion Factor<sub>t</sub>* is the inclusion factor of security s at time t. The inclusion factor can be one or the combination of the following factors: Foreign Inclusion Factor, Domestic Inclusion Factor, Growth Inclusion Factor, Value Inclusion Factor, Index Inclusion Factor.
- *PAF<sub>t</sub>* is the Price Adjustment Factor of security s at time t.
- *FXrate<sub>t</sub>* is the FX rate of the price currency of security s vs USD at time t. It is the value of 1 USD in foreign currency.
- *FXrate<sub>t-1</sub>* is the FX rate of the price currency of security s vs USD at time t-1. It is the value of 1 USD in foreign currency.
- *ICL<sub>t</sub>* is the Internal Currency Index of price currency at time t. The ICI is different than 1 when a country changes the internal value of its currency (e.g., from Turkish Lira to New Turkish Lira, ICI = 1,000,000).
- *ICL<sub>t-1</sub>* is the Internal Currency Index of price currency at time t-1.

### Security Index of Price in Local Currency

The Security Index of Price is distributed in MSCI daily and monthly security products. It represents the price return from period to period by utilizing the concept of an index of performance with an arbitrary base value. The index of price is fully adjusted for capital changes and is expressed in local currency.

$$\text{SecurityPriceIndexLevel}_t = \text{SecurityPriceIndexLevel}_{t-1} \times \frac{\text{Security Adjusted Market Cap For Local}_t}{\text{Security Initial Market Cap USD}_t}$$

*Security Adjusted Market Cap For Local* =

$$\frac{\text{End Of Day Number Of Shares}_{t-1} \times \text{Price Per Share}_t \times \text{Inclusion Factor}_t \times \text{PAF}_t}{\text{FXrate}_{t-1}} \times \frac{\text{ICI}_t}{\text{ICI}_{t-1}}$$

$$\text{Security Initial Market Cap USD}_t = \frac{\text{End Of Day Number Of Shares}_{t-1} \times \text{PricePerShare}_{t-1} \times \text{Inclusion Factor}_t}{\text{FXrate}_{t-1}}$$

Where:

- *Security Price Index Level<sub>t-1</sub>* is Security Price Index level at time t-1.
- *Security Adjusted Market Cap For Local<sub>t</sub>* is the Adjusted Market Capitalization of security s in USD converted using FX rate as of t-1.
- *Security Initial Market Cap USD<sub>t</sub>* is the Initial Market Capitalization of security s in USD at time t.
- *End Of Day Number Of Shares<sub>t-1</sub>* is the number of shares of security s at time t-1.
- *Price Per Share<sub>t</sub>* is the price per share of security s at time t.
- *Price Per Share<sub>t-1</sub>* is the price per share of security s at time t-1.
- *Inclusion Factor<sub>t</sub>* is the inclusion factor of security s at time t. The inclusion factor can be one or the combination of the following factors: Foreign Inclusion Factor, Domestic Inclusion Factor Growth Inclusion Factor, Value Inclusion Factor, Index Inclusion Factor.
- *PAF<sub>t</sub>* is the Price Adjustment Factor ("PAF") of security s at time t.
- *FXrate<sub>t-1</sub>* is the FX rate of the price currency of security s vs USD at time t-1. It is the value of 1 USD in foreign currency.
- *ICI<sub>t</sub>* is the Internal Currency Index of price currency at time t. The ICI is different than 1 when a country changes the internal value of its currency (e.g., from Turkish Lira to New Turkish Lira – ICI = 1,000,000).
- *ICI<sub>t-1</sub>* is the Internal Currency Index of price currency at time t-1.

#### **Maintenance of and Changes to the MSCI Indices**

MSCI maintains the MSCI Indices with the objective of reflecting, on a timely basis, the evolution of the underlying equity markets and segments. In maintaining the MSCI Indices, emphasis is also placed on continuity, continuous investability of constituents, replicability, index stability and low turnover.

As part of the changes to MSCI's methodology which became effective in May 2008, maintenance of the indices falls into three broad categories:

- semi-annual reviews, which will occur each May and November and will involve a comprehensive reevaluation of the market, the universe of eligible securities and other factors involved in composing the indices;
- quarterly reviews, which will occur each February and August and will focus on significant changes in the market since the last semi-annual review and on including significant new eligible securities (such as IPOs, which were not eligible for earlier inclusion in the indices); and
- ongoing event-related changes, which will generally be reflected in the indices at the time of the event and will include changes resulting from mergers, acquisitions, spin-offs, bankruptcies, reorganizations, and other similar corporate events.

Based on these reviews, additional components may be added, and current components may be removed, at any time. MSCI generally announces all changes resulting from semi-annual reviews, quarterly reviews and ongoing events in advance of their implementation, although in exceptional cases they may be announced during market hours for same or next day implementation.

## **Prices and Exchange Rate**

### Prices

The prices used to calculate the MSCI Indices are the official exchange closing prices or those figures accepted as such. MSCI reserves the right to use an alternative pricing source on any given day.

### Exchange rates

MSCI uses the closing spot rates published by WM / Reuters at 4:00 PM London time. MSCI uses WM / Reuters rates for all countries for which it provides indices.

In case WM/Reuters does not provide rates for specific markets on given days (for example Christmas Day and New Year Day), the previous business day's rates are normally used.

MSCI independently monitors the exchange rates on all its indices and may, under exceptional circumstances, elect to use an alternative exchange rate if the WM / Reuters rates are not available, or if MSCI determines that the WM / Reuters rates are not reflective of market circumstances for a given currency on a particular day. In such circumstances, an announcement would be sent to clients with the related information. If appropriate, MSCI may conduct a consultation with the investment community to gather feedback on the most relevant exchange rate.

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## **THE NASDAQ-100 INDEX®**

***The disclosure relating to the Nasdaq-100 Index® (the “NDX”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the NDX.***

### ***The Nasdaq, Inc. Publishes the NDX***

The NDX is a modified market capitalization-weighted index of 100 of the largest non-financial companies listed on The Nasdaq Stock Market based on market capitalization. It does not contain securities of financial companies (based on the Financials industry classification according to the Industry Classification Benchmark). The NDX, which includes companies across a variety of major industry groups, was launched on January 31, 1985, with a base index value of 250.00. On January 1, 1994, the base index value was reset to 125.00. Current information regarding the market value of the NDX is available from Nasdaq, Inc. (“Nasdaq”) as well as numerous market information services. The NDX is reported by Bloomberg Professional® service under the ticker symbol “NDX.”

The share weights of the component securities of the NDX 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 NDX is directly proportional to the value of its share weight.

### ***Calculation of the NDX***

At any moment in time, the level of the NDX equals the aggregate value of the then-current share weights of each of the component securities, which are based on the total shares outstanding of each such 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 level of the NDX. The divisor serves the purpose of scaling such aggregate value to a lower order of magnitude, which is more desirable for reporting purposes.

### ***Underlying Stock Eligibility Criteria and Annual Ranking Review***

#### Initial Eligibility Criteria

To be eligible for initial inclusion in the NDX, a security must be listed on The Nasdaq Stock Market and meet the following criteria:

- the security’s U.S. listing must be exclusively on the Nasdaq Global Select Market or the Nasdaq Global Market;
- the security must be issued by a non-financial company;
- the security may not be issued by an issuer currently in bankruptcy proceedings;
- the security must generally be a common stock, ordinary share, American Depositary Receipt, tracking stock, shares of beneficial interest, or limited partnership interests;
- the security must have a three-month average daily trading volume of at least 200,000 shares;
- if the security is issued by an issuer organized under the laws of a jurisdiction outside the United States, it must have listed options on a recognized market in the United States or be eligible for listed-options trading on a recognized options market in the United States;
- the issuer of the security may not have entered into a definitive agreement or other arrangement which would likely result in the security no longer being eligible;
- the issuer of the security may not have annual financial statements with an audit opinion that is currently withdrawn; and
- the issuer of the security must have “seasoned” on the Nasdaq Stock Market or another recognized market (generally, a company is considered to be seasoned if it has been listed on a market for at least three full months, excluding the first month of initial listing).

#### Continued Eligibility Criteria

In addition, to be eligible for continued inclusion in the NDX the following criteria apply:

- the security’s U.S. listing must be exclusively on the Nasdaq Global Select Market or the Nasdaq Global Market;
- the security must be issued by a non-financial company;
- the security may not be issued by an issuer currently in bankruptcy proceedings;

- the security must have an average daily trading volume of at least 200,000 shares in the previous three-month trading period as measured annually during the ranking review process described below;
- 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 recognized market in the United States or be eligible for listed-options trading on a recognized options market in the United States, as measured annually during the ranking review process;
- the issuer of the security may not have entered into a definitive agreement or other arrangement that would likely result in the security no longer being eligible;
- the security must have an adjusted market capitalization equal to or exceeding 0.10% of the aggregate adjusted market capitalization of the NDX at each month-end. In the event that a company does not meet this criterion for two consecutive month-ends, it will be removed from the NDX effective after the close of trading on the third Friday of the following month; and
- the issuer of the security may not have annual financial statements with an audit opinion that is currently withdrawn.

These eligibility criteria may be revised from time to time by Nasdaq without regard to the Notes.

#### Annual Ranking Review

The component securities are evaluated on an annual basis (the "Ranking Review"), except under extraordinary circumstances, which may result in an interim evaluation, as follows. Issuers that meet the applicable eligibility criteria are ranked by market value. The top 75 ranked issuers will be selected for inclusion. Any other issuers that were already members of the NDX and are ranked within the top 100 are also selected for inclusion. In the event that fewer than 100 issuers pass the first two criteria, the remaining positions will first be filled, in rank order, by current index members that were in the top 100 at the previous reconstitution but are ranked in positions 101-125 in the current reconstitution. 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 NDX. The data used in the ranking includes end of October market data and is updated for total shares outstanding submitted in a publicly filed SEC document via EDGAR through the end of November.

Replacements are made effective after the close of trading on the third Friday in December. Moreover, if at any time during the year other than the Ranking Review, a component security is determined by Nasdaq to become ineligible for continued inclusion in the NDX, the security will be replaced with the largest market capitalization security, as of the prior month end, meeting the eligibility criteria listed above and not currently included in the NDX.

#### ***Index Maintenance***

In addition to the Ranking Review, the securities in the NDX are monitored every day by Nasdaq with respect to changes in total shares outstanding arising from corporate events, such as stock dividends, stock splits and certain spin-offs and rights issuances. Nasdaq has adopted the following quarterly scheduled weight adjustment procedures with respect to those changes. If the change in total shares outstanding arising from a corporate action is greater than or equal to 10%, that change will be made to the NDX as soon as practical, normally within ten days of such corporate action. Otherwise, if the change in total shares outstanding is less than 10%, then all such changes are accumulated and made effective at one time on a quarterly basis after the close of trading on the third Friday in each of March, June, September and December.

In either case, the share weights for those component securities are adjusted by the same percentage amount by which the total shares outstanding have changed in those securities. Ordinarily, whenever there is a change in the share weights, a change in a component security, or a change to the price of a component security due to spin-off, rights issuances or special cash dividends, Nasdaq adjusts the divisor to ensure that there is no discontinuity in the level of the NDX that might otherwise be caused by any of those changes. All changes will be announced in advance.

#### ***Index Rebalancing***

Under the methodology employed, on a quarterly basis coinciding with Nasdaq's quarterly scheduled weight adjustment procedures, the component securities are categorized as either "Large Stocks" or "Small Stocks" depending on whether their current percentage weights (after taking into account scheduled weight adjustments due to stock repurchases, secondary offerings or other corporate actions) are greater than, or less than or equal to, the average percentage weight in the NDX (i.e., as a 100-stock index, the average percentage weight in the NDX is 1%).

This quarterly examination will result in an index rebalancing if it is determined that: (1) the current weight of the single largest market capitalization component security is greater than 24% or (2) the "collective weight" of those component securities, the individual current weights of which are in excess of 4.5%, when added together, exceed 48%. In addition,

Nasdaq may conduct a special rebalancing at any time if it is determined to be necessary to maintain the integrity of the NDX.

If either one or both of these weight distribution requirements are met upon quarterly review, or Nasdaq determines that a special rebalancing is required, a weight rebalancing will be performed. First, relating to weight distribution requirement (1) above, if the current weight of the single largest component security exceeds 24%, then the weights of all Large Stocks will be scaled down proportionately towards 1% by enough amount for the adjusted weight of the single largest component security to be set to 20%. Second, relating to weight distribution requirement (2) above, for those component securities whose individual current weights or adjusted weights in accordance with the preceding step are in excess of 4.5%, if their "collective weight" exceeds 48%, then the weights of all Large Stocks will be scaled down proportionately towards 1% by just enough amount for the "collective weight," so adjusted, to be set to 40%.

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## **THE NIKKEI STOCK AVERAGE**

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### ***Nikkei, Inc. Publishes the NKY***

The NKY was developed, and is calculated, maintained and published, by Nikkei Inc. The NKY is also commonly referred to as the Nikkei 225. The NKY is reported by Bloomberg Professional® service under the symbol “NKY.”

The NKY is a stock index that measures the composite price performance of selected Japanese stocks. The NKY is based on 225 underlying stocks (the “Nikkei Underlying Stocks”) trading on the Tokyo Stock Exchange (“TSE”) representing a broad cross-section of Japanese industries. All 225 Nikkei Underlying Stocks are stocks listed in the First Section of the TSE. Stocks listed in the First Section of the TSE are among the most actively traded stocks on the TSE. Nikkei Inc. rules require that the 75 most liquid issues (one-third of the component count of the NKY) be included in the NKY. Nikkei Inc. was first calculated and published the NKY in 1970; prior to 1970, the TSE calculated the NKY.

The 225 companies included in the NKY are divided into six sector categories: 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, Electric Machinery, Automobiles and Auto Parts, Precision Instruments, Communications;
- Financials — Banking, Other Financial Services, Securities, Insurance;
- Consumer Goods — Fishery, Foods, Retail, Services;
- Materials — Mining, Textiles and Apparel, Paper and Pulp, Chemicals, Petroleum, Rubber, Glass and Ceramics, Steel, Nonferrous Metals, Trading Companies;
- Capital Goods/Others — Construction, Machinery, Shipbuilding, Transportation Equipment, Other Manufacturing, Real Estate; and
- Transportation and Utilities — Railway and Bus, Land Transport, Marine Transport, Air Transport, Warehousing, Electric Power, Gas.

### ***Calculation of the NKY***

The NKY is a modified, price-weighted index (i.e., a Nikkei Underlying Stock’s weight in the NKY is based on its price per share rather than the total market capitalization of the issuer) which is calculated by (i) multiplying the per share price of each Nikkei Underlying Stock by the corresponding weighting factor for such Nikkei Underlying Stock (a “Weight Factor”), (ii) calculating the sum of all these products and (iii) dividing such sum by a divisor (the “Divisor”). The Divisor was initially set at 225 for the date of May 16, 1949 (the date on which the TSE was reopened after World War II) using historical numbers from that date. The Divisor is subject to periodic adjustments as set forth below. Each Weight Factor is computed by dividing ¥50 by the presumed par value of the relevant Nikkei Underlying Stock, so that the share price of each Nikkei Underlying Stock when multiplied by its Weight Factor corresponds to a share price based on a uniform par value of ¥50. The stock prices used in the calculation of the NKY are those reported by a primary market for the Nikkei Underlying Stocks (currently the TSE). The level of the NKY is calculated once every 5 seconds during TSE trading hours.

In order to maintain continuity in the NKY 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 NKY is adjusted in a manner designed to prevent any instantaneous change or discontinuity in the level of the NKY. 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 Weight Factor and divided by the new Divisor (i.e., the level of the NKY immediately after such change) will equal the level of the NKY immediately prior to the change.

### ***Standards for Listing and Maintenance***

A Nikkei Underlying Stock may be deleted or added by Nikkei Inc. Any stock becoming ineligible for listing in the First Section of the TSE due to any of the following reasons will be deleted from the Nikkei Underlying Stocks: (i) bankruptcy of the issuer, (ii) merger of the issuer with, or acquisition of the issuer by, another company, (iii) delisting of such stock, (iv) transfer of such stock to the “Seiri-Post” because of excess debt of the issuer or because of any other reason or (v) transfer of such stock to the Second Section. In addition, a component stock transferred to the “Kanri-Post” (Posts for stocks under supervision) becomes a candidate for deletion. Nikkei Underlying Stocks with relatively low liquidity, based

on trading value and rate of price fluctuation, may be deleted by Nikkei Inc. Upon deletion of a stock from the Nikkei Underlying Stocks, Nikkei Inc. will select a replacement for such deleted Nikkei Underlying Stock in accordance with certain criteria. A list of the issuers of the Nikkei Underlying Stocks constituting the NKY is available from the Nikkei Economic Electronic Databank System and from the Stock Market Indices Data Book published by Nikkei Inc. Nikkei Inc. may delete, add or substitute any stock underlying the NKY.

***Property Rights and Disclaimers***

The Nikkei Stock Average is an intellectual property of Nikkei Inc. “Nikkei,” “Nikkei Stock Average,” and “Nikkei 225” are the service marks of Nikkei Inc. Nikkei Inc. reserves all the rights, including copyright, to the NKY. Nikkei Digital Media, Inc., a wholly owned subsidiary of Nikkei Inc. calculates and disseminates the NKY under exclusive agreement with Nikkei Inc. Nikkei Inc. and Nikkei Digital Media Inc. are collectively the “Nikkei Index Sponsor.”

The Notes are not in any way sponsored, endorsed or promoted by the Nikkei Index Sponsor. The Nikkei Index Sponsor does not make any warranty or representation whatsoever, express or implied, either as to the results to be obtained as to the use of the NKY or the figure as which the NKY stands at any particular day or otherwise. The NKY is compiled and calculated solely by the Nikkei Index Sponsor. However, the Nikkei Index Sponsor shall not be liable to any person for any error in the NKY and the Nikkei Index Sponsor shall not be under any obligation to advise any person, including a purchase or vendor of the Notes, of any error therein.

In addition, the Nikkei Index Sponsor gives no assurance regarding any modification or change in any methodology used in calculating the NKY and is under no obligation to continue the calculation, publication and dissemination of the NKY.

## **THE NYSE® FANG+™ INDEX**

***The disclosure relating to the NYSE® FANG+™ Index (the “NYFANG”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the NYFANG.***

### ***ICE Data Indices, LLC Publishes the NYFANG***

The NYFANG is an equal-dollar weighted index designed to represent a segment of the technology and consumer discretionary sectors consisting of highly-traded growth stocks of technology and tech-enabled companies such as Facebook, Inc., Apple Inc., Amazon.com, Inc., Netflix, Inc. and Google (Alphabet Inc.). The NYFANG currently has 10 index constituents, which is the minimum number, but it may have more than 10 index constituents in the future. The NYFANG was launched on September 26, 2017. As of the date of this document, the index constituents are Facebook, Inc., Apple Inc., Amazon.com, Inc., Netflix, Inc., Google (Alphabet Inc.), Alibaba Group Holding Limited, Baidu, Inc., Nvidia Corporation, Tesla, Inc. and Twitter, Inc. ICE Data Indices, LLC (“ICE Data”) is the index sponsor, index administrator and index calculation agent.

### ***Index Universe***

The index universe will consist of all stocks classified as consumer discretionary or technology by the index sponsor that are listed on a major U.S. stock exchange, such as the NYSE, Nasdaq or NYSE American. American depositary receipts are eligible for inclusion in the NYFANG.

### ***Index Constituent Selection***

At each quarterly rebalance, the index universe will be screened utilizing a proprietary methodology that references, among other factors, sector classification, revenue growth and an analysis of the applicable issuer’s business. The following steps will be executed:

- Stocks must have a market capitalization (including all share classes and unlisted shares) of at least \$5 billion;
- Stocks must have a trailing six month average daily traded value (ADTV / turnover) of \$50 million on the specific listing line;
- The ICE Data Indices Governance Committee (the “Governance Committee”) will oversee a process to select FANG and FANG-related stocks. The FANG stocks include Facebook, Inc., Apple Inc., Amazon.com, Inc., Netflix, Inc., Google (Alphabet Inc.). Other stocks selected for the NYFANG, in addition to satisfying the criteria in the two subparagraphs above, should exhibit characteristics of high-growth technology and internet/media stocks. ICE Data and its Governance Committee will focus on distinguishing between traditional technology and services companies and newer, innovative, technology utilizing companies using, among other factors, sector classification, revenue growth and an analysis of the issuer’s business.

The final list of companies will be equally weighted based upon the prices and index market capitalization as of the close of trading on the third Friday of March, June, September, and December.

### ***Rebalances and Frequency***

The general aim of the quarterly rebalance of the NYFANG is to ensure that the selection and weightings of the index constituents continues to reflect as closely as possible the NYFANG’s objective of representing a segment of the technology and consumer discretionary sectors consisting of the most highly-traded and high-growth technology and internet/media stocks such as Facebook, Inc., Apple Inc., Amazon.com, Inc., Netflix, Inc., Google (Alphabet Inc.).

The index administrator reserves the right to, at any time, change the number of stocks comprising the NYFANG by adding or deleting one or more stocks, or replacing one or more stocks contained in the NYFANG with one or more substitute stocks of its choice, if in the index administrator’s discretion such addition, deletion or substitution is necessary or appropriate to maintain the quality and/or character of the NYFANG. Any such action would need to be approved by the Governance Committee.

Changes to the index constituents may occur during a scheduled rebalance and as a result of the removal of an index constituent. The quarterly index rebalance becomes effective after the close of the third Friday of March, June, September, and December. The rebalance announcement will be made after the close of the second Friday of the month (one week prior). The reference date for all company-specific data and information utilized in the rebalancing process will be taken from that same day, with exception of the prices utilized to determine the shares, which will be taken from the third Friday.

### ***Periodical Weighting Adjustment***

At quarterly index rebalances, the NYFANG will be rebalances according to the methodology described above under “—Index Universe” and “—Index Constituent Selection.”

### **Index Calculation**

The NYFANG is calculated on a price return basis. The current index level would be calculated by dividing the current modified index market capitalization by the index divisor. The divisor was determined based on the initial capitalization base of the NYFANG and the base level. The divisor is updated as a result of corporate actions and composition changes. The general formula for the index is:

$$\text{Index(PR)}_t = \frac{\sum_i P_{i,t} Q_{i,t}}{D_t}$$

Where:

$t$  means Index Calculation Date  $t$

$D_t$  means the index divisor on Index Calculation Date  $t$

$P_{i,t}$  means the price of index constituent  $i$  on Index Calculation Date  $t$

$Q_{i,t}$  means the number of shares of index constituent  $i$  on Index Calculation Date  $t$

Index Calculation Date means a U.S. Business Day where all of the Constituent Exchanges are open.

The index divisor  $D_t$  will be adjusted for corporate actions and any additions, deletions, and share changes for the Index Constituents:

$$D_t = \frac{\sum_i APC_{i,t} Q_t}{\text{Index(PR)}_{t-1}}$$

Where:

$D_t$  means the index divisor on Index Calculation Date  $t$

$\text{Index(PR)}_{t-1}$  means the price return index level from Date  $t-1$

$APC_{i,t}$  means the Adjusted Previous Close Price (for corporate actions, and, denominated in the index base Currency) of index constituent  $i$  on Index Calculation Date  $t$

$Q_{i,t}$  means the number of shares of Index constituent  $i$  on Index Calculation Date  $t$

The base date for the NYFANG is September 19, 2014, and the Base Level is 1,000.00.

### **Corporate Actions**

*General.* The NYFANG may be adjusted in order to maintain the continuity of the index level and the composition. Adjustments take place in reaction to events that occur with index constituents in order to mitigate or eliminate the effect of that event on index performance.

*Removal of constituents.* An index constituent may be deleted from the NYFANG as a result of a corporate action such as a merger, acquisition, spin-off, delisting or bankruptcy. All removals will be announced at least three trading days before the effective date of the removal. A removed constituent may be replaced with a new stock. If an index constituent is removed in the NYFANG, the divisor will be adjusted to maintain the index level.

#### **Mergers and Acquisitions.**

- Merger or acquisition between index constituents: In the event a merger or acquisition occurs between index constituents, the acquired company is deleted. There will be no change made to the acquiring company's inclusion in the NYFANG.
- Merger or acquisition between an index constituent and a non-member: A non-member is defined as a company that is not a current index constituent. A merger or acquisition between an index constituent and one non-member can take two forms:
  - The acquiring company is an index constituent and the acquired company is not. There will be no action taken as to inclusion in the NYFANG.



- The acquiring company is not an index constituent, but the acquired company is an index constituent. The acquired company is removed from the NYFANG

*Suspensions and company distress.* Immediately upon an index constituent filing for bankruptcy, an announcement will be made to remove the stock from the NYFANG effective for the next trading day following the bankruptcy. If the stock is trading on an over-the-counter (“OTC”) market, the last trade or price on that market is utilized as the deletion price on that day.

If the stock does not trade on the relevant exchange between the bankruptcy announcement and the deletion effective date, the stock may be deleted from the NYFANG in that corporate action with a presumed market value of \$0.

*Price sources.* In the event that the trading in shares is suspended or halted, the last known price established during regular daytime trading on the primary exchange will be used. Depending on the particular situation, the index administrator may choose to value the security at a price of \$0 for purposes of index calculation and/or index corporate action. This would be applicable for certain extreme cases such as a company bankruptcy or severe distress when the security is no longer tradeable.

*Spin-offs.* The closing price of the index constituent is adjusted by the value of the spin-off, and the shares of the index constituent will be adjusted to maintain its existing weighting in the NYFANG. The divisor will be adjusted to account for any changes in the overall index market capitalization. Spun-off companies will not be added into the NYFANG at the time of the event.

*Dividends.* The index will be adjusted for dividends that are special in nature, typically through a price adjustment and/or corresponding share increase.

*Rights issues and other rights.* In the event of a rights issue, the price is adjusted for the value of the right before the open on the ex-date, and the shares are increased to maintain the index constituent’s existing weighting within the NYFANG. The adjustment assumes that the rights issue is fully subscribed. The amount of the price adjustment is determined from the terms of the rights issue, including the subscription price, and the price of the underlying security. The index administrator shall only enact adjustments if the rights represent a positive value, or are in-the-money, or alternatively, represent or can be converted into a tangible cash value.

*Bonus issues, stock splits and reverse stock splits.* For bonus issues, stock splits and reverse stock splits, the number of shares included in the NYFANG will be adjusted in accordance with the ratio given in the corporate action. Since the event will also incorporate a corresponding price adjustment and will not change the value of the company included in the NYFANG, the divisor will not be changed because of this.

*Changes in number of shares.* Changes in the number of shares outstanding, typically due to share repurchases, tenders, or offerings, will not be reflected in the NYFANG.

### **Index Governance**

ICE Data is responsible for the day-to-day management of the NYFANG, including retaining primary responsibility for all aspects of the index determination process, including implementing appropriate governance and oversight, as required under the International Organization of Securities Commission’s Principles for Financial Benchmarks (the “IOSCO Principles”). The Governance Committee is responsible for helping to ensure ICE Data’s overall compliance with the IOSCO Principles, by performing the Oversight Function which includes overseeing the index development, design, issuance and operation of the NYFANG, as well as reviewing the control framework. ICE Data is also responsible for decisions regarding the interpretation of the index methodology and the Governance Committee is responsible for reviewing all rule book modifications and index constituent changes to ensure that they are made objectively, without bias, and in accordance with applicable law and regulation and ICE Data’s policies and procedures. Consequently, all ICE Data’s and the Governance Committee discussions and decisions are confidential until released to the public.

*Cases not covered in the methodology.* In cases which are not expressly covered in the methodology, operational adjustments will take place along the lines of the aim of the NYFANG. Operational adjustments may also take place if, in the opinion of the index administrator, it is desirable to do so to maintain a fair and orderly market in derivatives on the NYFANG and/or this is in the best interests of the investors in products based on the NYFANG and/or the proper functioning of the markets. Any such modifications described in this paragraph will also be governed by any applicable and outstanding policies and procedures in place by ICE Data at such time.

*Methodology changes.* The Governance Committee reviews all methodology modifications and index changes to ensure that they are made objectively, without bias and in accordance with applicable law and regulation and ICE Data’s policies and procedures. The methodology may be supplemented, amended in whole or in part, revised or withdrawn at any time. Supplements, amendments, revisions and withdrawals may also lead to changes in the way the NYFANG is compiled or calculated or affect the NYFANG in another way.

## **Dissemination**

The NYFANG is calculated from 9:30 AM until 6:00 PM Eastern Time (“ET”) on those days specified as “Index Business Days,” as that term is defined in the index methodology. Solely for the purpose of the preceding sentence and not for the purpose of any calculation of the value of the securities, Index Business Days will be classified as days on which the U.S. Equity Markets (NYSE, Nasdaq, and NYSE American) are open for a full or partial day of trading.

## **Exceptional Market Conditions and Corrections**

The index administrator retains the right to delay the publication of the opening level of the NYFANG. Furthermore, the index administrator retains the right to suspend the publication of the level of the NYFANG if it believes that circumstances prevent the proper calculation of the NYFANG.

If index constituent prices are canceled, the NYFANG will not be recalculated unless the index administrator decides otherwise.

Commercially reasonable efforts are made to ensure the correctness and validity of data used in real-time index calculations. If incorrect price or corporate action data affects index daily highs, lows, or closes, it is corrected retroactively as soon as possible and all revisions are communicated out to the public and market data vendors.

## **Announcements**

Changes to the index methodology which arise as a result of market feedback, consultations, internal reviews, or otherwise will be communicated by an index announcement which will be distributed by ICE Data Indices at [theice.com/market-data/indices/equity-indices](http://theice.com/market-data/indices/equity-indices) and NYSE Market Data at [theice.com/market-data/indices/equity-indices/products](http://theice.com/market-data/indices/equity-indices/products). Information contained in such websites is not incorporated by reference in, and should not be considered a part of, this document.

As a general rule, the announcement periods that are mentioned below will be applied. However, emergency actions, including urgently required corporate action treatments, often resulting from late notices from the relevant company or exchange, may require the index administrator to deviate from the standard timing.

*Inclusion of new index constituents.* The inclusion of new companies in the NYFANG will typically only occur during the quarterly rebalance, although there could be exceptions based on a specific corporate action affecting a current index constituent during the year. The inclusion of the new company will be announced at least one week before the effective date of the actual inclusion.

*Removal of index constituents.* Index constituents would be removed from the NYFANG as a result of periodic corporate actions as well as the results of the quarterly rebalance. All removals will be announced at least three trading days before the effective date of the removal. It should be noted that in the case of mergers and acquisitions, every effort will be made to remove the company at some reasonable time ahead of the suspension in trading in the acquired company. There will be certain situations and corporate actions that would require the removal of a company that has already ceased trading. In those cases, the company will be removed from the NYFANG at its last traded price, or, at the discretion of the index administrator, at a derived price that most accurately represents its post-suspension value.

*Corporate actions.* In case of an event that could affect one or more index constituents, the index administrator will inform the market about the intended treatment of the event in the NYFANG shortly after the firm details have become available and have been confirmed. When possible, the corporate action will be announced, even if not all information is known, at least one trading day before the effective date of the action. Once the corporate action has been effectuated, the index administrator will confirm the changes in a separate announcement.

*Methodology changes.* Barring exceptional circumstances, proposed methodology changes will be announced to stakeholders prior to them being implemented. Stakeholders will also be notified when the changes shall take effect. “Stakeholders” include external parties that subscribe to the index data or license it as the basis for an investment product (including, but not limited to, HSBC).

*Reviews; publication of new selection.* The new composition of the NYFANG, including the companies to be a part of the NYFANG and their corresponding new index weights, can be accessed from NYSE Market Data at [theice.com/market-data/indices/equity-indices/products](http://theice.com/market-data/indices/equity-indices/products).

## **License Agreement**

The NYSE® FANG+™ Index is a trademark of ICE Data or its affiliates and has been licensed, along with the NYFANG, for use by HSBC in connection with the Notes. The Notes are not sponsored, endorsed, sold or promoted by ICE Data. ICE Data makes no representations or warranties regarding the advisability of investing in securities generally, in the Notes particularly, or the ability of the NYFANG to track general stock market performance.

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FOR A PARTICULAR PURPOSE WITH RESPECT TO THE NYFANG, INDEX VALUES OR ANY DATA INCLUDED THEREIN. IN NO EVENT SHALL ICE DATA HAVE ANY LIABILITY FOR ANY SPECIAL, PUNITIVE, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS), EVEN IF NOTIFIED OF THE POSSIBILITY OF SUCH DAMAGES.

## THE PHLX HOUSING SECTOR INDEX

**The disclosure relating to the PHLX Housing Sector Index (the “HGX”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the HGX.**

### **The Nasdaq, Inc. Publishes the HGX**

The HGX is designed to measure the performance of a set of companies whose primary lines of business are directly associated with the U.S. housing construction market (the “PHLX Component Securities”). The HGX was set to an initial value of 250 on January 2, 2002.

The HGX is monitored or benchmarked against the value at which it was initially set. The HGX will reflect the U.S. housing construction industry only to the extent that the underlying issuers are representative of the industry. Nasdaq will adjust the composition of the HGX due to mergers of component issuers, because issuers no longer reflect the particular index group, or to improve the HGX’s correlation to the U.S. housing construction industry, as described in more detail below.

### **Index Composition and Maintenance**

The HGX is a modified market capitalization-weighted index, in which the value of the HGX equals the aggregate value of the index share weights (also known as the Index Shares) of each of the PHLX Component Securities multiplied by each such security’s last sale price, and divided by the divisor of the HGX. The divisor serves the purpose of scaling the aggregate index value to a lower order of magnitude, which is more desirable for reporting purposes. If trading in a PHLX Component Security is halted while the applicable market is open, the most recent last sale price for that security is used for all HGX computations until trading resumes. If trading is halted before the market is open, the previous day’s last sale price is used.

The formula for HGX value is:

$$\frac{\text{Aggregate Adjusted Market Value}}{\text{Divisor}}$$

where the Divisor is (Market Value after Adjustments/Market Value before Adjustments) × Divisor before Adjustments.

The HGX is calculated as a price return index (Nasdaq: HGX), which is ordinarily calculated without regard to cash dividends on the PHLX Component Securities. The HGX is also calculated as a total return index (Nasdaq: XHGX) which reinvested cash dividends on the ex-date. The total return index was synchronized to the value of the price return index at the close on June 30, 2011.

The HGX is calculated during the trading day and is disseminated once per second from 09:30:01 to 17:16:00 ET. The closing value of the HGX may change up until 17:15:00 ET due to corrections to the last sale price of the PHLX Component Securities.

### **Eligibility**

HGX eligibility is limited to specific types of securities. The security types eligible for the HGX include domestic or foreign common stocks, ordinary shares, shares of beneficial interest or limited partnership interests.

#### Initial Security Eligibility Criteria

To be included in the HGX, a security must meet the following criteria:

- a security must be listed on the Nasdaq Stock Market®, the New York Stock Exchange, NYSE American, or the CBOE Exchange;
- the issuer of the security must be classified as a company whose primary business is associated with the U.S. housing construction market under one of the applicable Industry Classification Benchmark (“ICB”) codes (2353, 3728 and 8779), which are products of FTSE International Limited and are licensed for use by the index sponsor;
- only one class of security per issuer is allowed;
- the security must have a market capitalization of at least \$100 million;
- the security must have traded at least 1.5 million shares in each of the last six months;
- the security must have listed options on a recognized options market in the U.S. or be eligible for listed-options trading on a recognized options market in the U.S.;
- the security may not be issued by an issuer currently in bankruptcy proceedings;

- the issuer of the security may not have entered into a definitive agreement or other arrangement which would likely result in the security no longer being eligible for the index;
- the issuer of the security may not have annual financial statements with an audit opinion that is currently withdrawn; and
- the issuer of the security must have “seasoned” on a recognized market for at least six months; in the case of spin-offs, the operating history of the spin-off will be considered.

#### Component Replacement Criteria

In the event that a security no longer meets the continued security eligibility criteria described below, it will be replaced with a security that meets all of the initial security eligibility criteria and additional criteria which follow. Securities eligible for inclusion will be ranked ascending by market value, current price and percentage price change over the previous six months. The security with the highest overall ranking will be added to the HGX (if multiple securities have the same rank, the security with the largest market capitalization will rank higher) provided that the HGX then meets the following criteria:

- no single PHLX Component Security is greater than 20% of the weight of the HGX and the top five PHLX Component Securities are not greater than 55% of the weight of the HGX; and
- no more than 15% of the weight of the HGX is composed of non-U.S. component securities that are not subject to comprehensive surveillance agreements.

In the event that the highest-ranking security does not permit the HGX to meet the above criteria, the next highest-ranking security will be selected and the HGX criteria will again be applied to determine eligibility. The process will continue until a qualifying replacement security is selected.

#### Continued Security Eligibility Criteria

To be eligible for continued inclusion in the HGX, a PHLX Component Security must meet the following criteria:

- the security must be listed on the Nasdaq Stock Market, the New York Stock Exchange, or NYSE American;
- the issuer of the security must be classified as a company whose primary business is associated with the U.S. housing construction market under one of the applicable ICB codes (2353, 3728 and 8779), which are products of FTSE International Limited and are licensed for use by the index sponsor;
- the security must have a market capitalization of at least \$60 million;
- the security may not be issued by an issuer currently in bankruptcy proceedings; and
- the issuer of the security may not have annual financial statements with an audit opinion that is currently withdrawn.

#### Continued Index Eligibility Criteria

In addition to the security eligibility criteria, the HGX as a whole must meet the following criteria on a continual basis unless otherwise noted:

- no single PHLX Component Security is greater than 25% of the weight of the HGX and the top five PHLX Component Securities do not constitute more than 60% of the weight of the HGX (measured semiannually on the first trading day in January and July);
- no more than 18% of the weight of the index is composed of non-U.S. PHLX Component Securities that are not subject to comprehensive surveillance agreements;
- the total number of PHLX Component Securities has not increased or decreased by 33.33% of the HGX and in no event will be less than nine;
- PHLX Component Securities representing at least 95% of the weight of the HGX have a market capitalization of at least \$75 million;
- PHLX Component Securities representing at least 92% of the weight of the HGX and at least 82% of the total number of PHLX Component Securities meet the security options eligibility rules;
- PHLX Component Securities must have trading volume of at least 600,000 shares for each of the last six months, except that for each of the lowest weighted PHLX Component Securities that in the aggregate

account for no more than 5% of the weight of the HGX, trading volume must be at least 500,000 shares for each of the last six months; and

- the lesser of the five highest weighted PHLX Component Securities or the highest weighted PHLX Component Securities that in the aggregate represent at least 30% of the total number of PHLX Component Securities each have had an average monthly trading volume of at least 1,250,000 shares over the past six months.

In the event the HGX does not meet the criteria, the HGX composition will be adjusted to ensure that the index meets the criteria. PHLX Component Securities that contribute to the HGX not meeting the eligibility criteria may be removed. PHLX Component Securities may be added and/or replaced according to the component replacement rules to ensure compliance with these criteria. If removed, the security will, in ordinary circumstances, be removed at its last sale price. If the security is halted from trading on its primary listing market, however, and the official closing price cannot be readily determined, Nasdaq may, at its discretion, remove the security at a zero price. If the security is removed at a zero price, it will be applied to the HGX after the close of trading on the third Friday in each of March, June, September, and December (ordinarily at 17:16:00 ET).

### ***Index Maintenance***

If a corporate event occurs as to any PHLX Component Security, such as a stock dividend, stock split, spin-off or rights issuance, the Index Shares and/or the price of the PHLX Component Security will be adjusted on the ex-date. If the change in total shares outstanding arising from other corporate actions is greater than or equal to 10%, the adjustment in the Index Shares and/or the price of the PHLX Component Security will be made as soon as practicable. Otherwise, if the change in total shares outstanding is less than 10%, then all such changes are accumulated and made effective on a quarterly basis after the close of trading on the third Friday in each of March, June, September, and December. The Index Shares are derived from the PHLX Component Security's total shares outstanding. The Index Shares are adjusted by the same percentage amount by which the total shares outstanding have changed.

In the event of a special cash dividend announced by the listing exchange, Nasdaq will adjust the last sale price of the relevant PHLX Component Security prior to market open on the ex-date for the special amount distributed.

In the event of a change in the Index Shares, a change in a PHLX Component Security, or a change to the price of a PHLX Component Security due to spin-offs, rights issuances, or special cash dividends, the divisor is ordinarily adjusted to ensure that there is no discontinuity in the value of the HGX, which might otherwise be caused by any such change. All changes are announced in advance and will be reflected in the HGX prior to market open on the applicable effective date.

### ***Index Rebalancing***

The HGX employs a modified market capitalization-weighting methodology. Each quarter, the HGX is rebalanced such that the maximum weight of any PHLX Component Security will not exceed 15% and no more than two securities will be at the cap. Any security then in excess of 8% will be capped at 8%. The aggregate amount by which all securities over 15% and 8% is reduced will be redistributed proportionally across the remaining PHLX Component Securities. After redistribution, if any other PHLX Component Security then exceeds 8%, the PHLX Component Security is set to 8% of the HGX and the redistribution is repeated to derive the final weights.

The modified market capitalization-weighted methodology is applied to the capitalization of each PHLX Component Security, using the last sale price of the security at the close of trading on the first Friday in March, June, September, and December and after applying quarterly changes to the total shares outstanding. Index Shares are then calculated by multiplying the weight of the security by the new market value of the HGX and dividing the modified market capitalization for each PHLX Component Security by its corresponding last sale price. The changes become effective after trading on the third Friday in March, June, September, and December.

In administering the HGX, Nasdaq will exercise reasonable discretion as it deems appropriate.

### ***License Agreement with Nasdaq***

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issued or in the determination or calculation of the equation by which the Notes is to be converted into cash. The Corporations have no liability in connection with the administration, marketing or trading of the Notes.

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## **THE RUSSELL 2000® INDEX**

***The disclosure relating to the Russell 2000® Index (the “RTY”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the Russell 2000® Index.***

### ***FTSE Russell Publishes the RTY***

The RTY is an index calculated, published, and disseminated by FTSE Russell, and measures the composite price performance of stocks of 2,000 companies determined by FTSE Russell to be part of the U.S. equity market. All 2,000 stocks are traded on a major U.S. exchange, and form a part of the Russell 3000® Index. The Russell 3000® Index is composed of the 3,000 largest U.S. companies as determined by market capitalization.

The RTY consists of the smallest 2,000 companies, by market capitalization, included in the Russell 3000® Index. The RTY is designed to track the performance of the small capitalization segment of the U.S. equity market. The inception date of the RTY is January 1, 1984. Members of the RTY are determined each year during annual reconstitution and enhanced quarterly with the addition of initial public offerings (IPOs). The RTY is a subset of the Russell U.S. indices.

### ***Defining Eligible Securities***

All companies that are determined to be part of the U.S. equity market under FTSE Russell’s country-assignment methodology are included in the Russell U.S. indices. If a company is incorporated 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 the equity market of its country of incorporation. If any of the three do not match, FTSE Russell then defines three Home Country Indicators (“HCI”): 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. Using the HCIs, FTSE Russell cross-compares the primary location of the company’s assets with the three HCIs. If the primary location of the company’s assets matches any of the HCIs, then the company is assigned to its primary asset location. If there is insufficient information to determine the country in which the company’s assets are primarily located, FTSE Russell will use the primary location of the company’s revenues for the same cross-comparison and will assign 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 where its headquarters are located unless the country is a Benefit Driven Incorporation (“BDI”) country; in which case, the company will be assigned to the country of its most liquid stock exchange. Russell lists the following countries as BDIs: 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, Saint Eustatius, Saint Maarten, and Turks and Caicos Islands. For any companies incorporated or headquartered in a U.S. territory, including countries such as Puerto Rico, Guam, and U.S. Virgin Islands, a U.S. HCI is assigned. If a company is designated as a Chinese “N Share,” it will not be considered for inclusion within the Russell U.S. indices. An “N Share” company is controlled by mainland Chinese entities, companies or individuals. It must be incorporated outside of China and traded on the New York Stock Exchange, the Nasdaq exchange or the NYSE American with a majority of its revenues or assets derived from the People’s Republic of China.

All securities eligible for inclusion in Russell U.S. indices must trade on an eligible U.S. exchange. The eligible U.S. exchanges are: CBOE, NYSE, NYSE American, NASDAQ and ARCA. Bulletin board, pink-sheets, and OTC-traded securities are not eligible for inclusion, including securities for which prices are displayed on the FINRA ADF.

Preferred and convertible preferred stock, redeemable shares, participating preferred stock, warrants, rights, installment receipts and trust receipts are not eligible for inclusion in the Russell U.S. indices. Royalty trusts, U.S. limited liability companies, closed-end investment companies, blank check companies, special-purpose acquisition companies, and limited partnerships are also not eligible for inclusion in the Russell U.S. indices. Business development companies, exchange traded funds and mutual funds are also excluded.

If an eligible company trades multiple share classes, FTSE Russell will review each share class independently for U.S. index inclusion. Stocks must trade at or above \$1.00 (on its primary exchange) on the rank day in May of each year to be eligible for inclusion during annual reconstitution. However, in order to reduce unnecessary turnover, if an existing index member’s closing price is less than \$1.00 on the last day of May, it will be considered eligible if the average of the daily closing prices (from its primary exchange) during the 30 days prior to the rank date is equal to or greater than \$1.00. If an existing index member does not trade on the rank day in May, it must price at \$1.00 or above on another eligible U.S. exchange to remain eligible. An initial public offering added during the quarterly IPO process is considered a new index addition and therefore must have a closing price on its primary exchange at or above \$1.00 on the last day of the IPO eligibility period in order to qualify for index inclusion. Companies with a total market capitalization of less than \$30 million are not eligible for inclusion in the Russell U.S. indices. Similarly, companies with only 5% or less of their shares available in the marketplace are not eligible for the Russell U.S. indices.



## ***Annual Reconstitution***

Annual reconstitution is the process by which all Russell indices are completely rebuilt. Reconstitution is a vital part of the creation of a benchmark which accurately represents a particular market segment. Companies may get bigger or smaller over time, or periodically undergo changes in their style characteristics. Reconstitution ensures that the companies continue to be correctly represented in the appropriate Russell indices.

On the rank day in May each year (timetable is announced each spring), all eligible securities are ranked by their total market capitalization. Total market capitalization is determined by multiplying total outstanding shares by the last price traded on the primary exchange on the rank day in May. All share classes for a company, including unlisted shares, are aggregated and considered total shares outstanding.

Reconstitution occurs on the last Friday in June. However, at times this date is too proximal to exchange closures and abbreviated exchange trading schedules when market liquidity is exceptionally low. In order to ensure proper liquidity in the markets, when the last Friday in June falls on the 29<sup>th</sup> or 30<sup>th</sup>, reconstitution will occur on the preceding Friday.

Eligible IPOs are added to the Russell U.S. indices quarterly to ensure that new additions to the institutional investing opportunity set are reflected in the representative indices. FTSE Russell focuses on IPOs each quarter because it is important to reflect market additions between reconstitution periods. Companies filing an initial public offering registration statement (or the local equivalent when outside the United States) and listing with the same quarter on an eligible U.S. exchange are reviewed for eligibility regardless of previous trading activity (exceptional or unique events may induce extraordinary treatment which will be communicated appropriately); a one month window is used to ensure that companies submitting the requisite filings just outside of the quarter are not excluded from eligibility. Companies currently trading on foreign exchanges or OTC markets will be reviewed for eligibility if: (1) the company files an initial public offering statement for an eligible U.S. exchange; (2) the offering is announced to the market and confirmed by FTSE Russell's vendors as an IPO; and (3) the security is not currently a member of the Russell Global Index (eligibility and country assignment are reviewed at reconstitution).

## ***Capitalization Adjustments***

After membership is determined, a security's shares are adjusted to include only those shares available to the public, which is often referred to as "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 are weighted in the Russell U.S. indices by their available (also called "float-adjusted") market capitalization, which is calculated by multiplying the primary closing price by the available shares. Adjustments to shares are reviewed at reconstitution, during quarterly update cycles and for corporate actions such as mergers.

Certain types of shares are considered restricted and removed from total market capitalization to arrive at free float or available market capitalization, such as shares directly owned by State, Regional, Municipal and Local governments (excluding shares held by independently managed pension schemes for governments), shares held by directors, senior executives and managers of the company, and by their family and direct relations, and by companies with which they are affiliated, and shares with high shareholding concentration, etc.

## ***Corporate Action-Driven Changes***

FTSE Russell adjusts the RTY on a daily basis in response to certain corporate actions and events, both to reflect the evolution of securities and to ensure that the indexes remain highly representative of the U.S. equity market. A company's membership and its weight in the RTY can be impacted by these corporate actions. FTSE Russell uses a variety of reliable public sources to determine when an action is final, including a company's press releases and regulatory filings; local exchange notifications; and official updates from other data providers FTSE Russell deems trustworthy. Prior to the completion of a corporate action or event, FTSE Russell estimates the effective date. FTSE Russell will then adjust the anticipated effective date based on public information until the date is considered final.

Depending upon the time an action is determined to be final, FTSE Russell either (1) applies the action before the open on the ex-date or (2) applies the action providing appropriate notice, referred to as a "delayed action." If FTSE Russell has confirmed the completion of a corporate action, scheduled to become effective subsequent to a rebalance, the event may be implemented in conjunction with the rebalance to limit turnover, provided appropriate notice can be given.

For merger and spin-off transactions that are effective between rank day in May and the Friday prior to annual reconstitution in June, the market capitalizations of the impacted securities are recalculated and membership is reevaluated as of the effective date of the corporate action. For corporate events that occur during the final week of reconstitution (during which reconstitution is finalized Friday after U.S. market close), market capitalizations and memberships will not be reevaluated. Non index members that have been considered ineligible as of rank day will not be reevaluated in the event of a subsequent corporate action that occurs between rank day and the reconstitution effective date.

If a company distributes shares of an additional share class to its existing shareholders through a mandatory corporate action, FTSE Russell evaluates the additional share class for separate index membership. The new share class will be deemed eligible if the market capitalization of the distributed shares meets minimum size requirement (above the minimum market capitalization breakpoint defined as the smallest member of the Russell 3000E Index from previous rebalance, adjusted for performance to date.) Index membership of additional share classes that are added due to corporate actions will mirror that of the pricing vehicle, as will style and stability probabilities. If the distributed shares of an additional share class do not meet eligibility requirements, they will not be added to the index (the distributed shares may be added to the index temporarily until they are settled and listed to enable index replication).

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

To maintain representativeness and maximize the available investment opportunity for index managers, the Russell U.S. indices are reviewed quarterly for updates to shares outstanding and to free floats used within the index calculation. The changes are implemented quarterly, on the third Friday of the month (after the close). The June reconstitution will continue to be implemented on the last Friday of June (unless the last Friday occurs on the 29th or 30th, when reconstitution will occur on the Friday prior).

### ***License Agreement with FTSE Russell***

HSBC has entered into a nonexclusive license agreement providing for the license to it, in exchange for a fee, of the right to use the RTY in connection with some products, including the Notes.

The Russell 2000® Index is a trademark of FTSE Russell. The Notes are not sponsored, endorsed, sold or promoted by FTSE Russell. FTSE Russell makes no representation or warranty, express or implied, to the owners of the Notes or any member of the public regarding the advisability of investing in securities generally or in the Notes particularly or the ability of the RTY to track general stock market performance or a segment of the same. FTSE Russell’s publication of the RTY in no way suggests or implies an opinion by Russell as to the advisability of investment in any or all of the securities upon which the RTY is based. FTSE Russell’s only relationship to HSBC USA Inc. is the licensing of certain trademarks and trade names of FTSE Russell and of the RTY which is determined, composed and calculated by FTSE Russell without regard to the HSBC USA Inc. or the Notes. FTSE Russell is not responsible for and has not reviewed the Notes nor any associated literature or publications and FTSE Russell makes no representation or warranty express or implied as to their accuracy or completeness, or otherwise. FTSE Russell reserves the right, at any time and without notice, to alter, amend, terminate or in any way change the Notes. FTSE Russell has no obligation or liability in connection with the administration, marketing or trading of the Notes:

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## **THE S&P 100® INDEX**

***The disclosure relating to the S&P 100® Index (the “OEX”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the OEX.***

### ***S&P Publishes the OEX***

The OEX is published by S&P and is a subset of the S&P 500® Index (the “SPX”). The OEX is reported on Bloomberg Professional® service under the symbol “OEX.”

To be included in the OEX, a company must maintain exchange-listed options, be included in the SPX and have a market capitalization in excess of \$8.2 billion, public float of at least 50%, positive as-reported earnings over the most recent quarter as well as over the most recent four quarters (summed together), and have highly tradable common stock with active and deep markets. Continued inclusion is not necessarily subject to these guidelines, as S&P strives to minimize unnecessary turnover in membership in the OEX and each removal is determined on a case-by-case basis. The sector balance of the OEX is maintained in line with the sector composition of the SPX. S&P calculates the OEX by reference to the prices of the constituent stocks of the OEX without taking account of the value of dividends paid on those stocks.

### ***The SPX***

***Eligible constituents of the OEX are selected from the constituents of the SPX.***

The SPX includes a representative sample of 500 companies in leading industries of the U.S. economy. The 500 companies are not the 500 largest companies listed on the NYSE and not all 500 companies are listed on the NYSE. S&P chooses companies for inclusion in the SPX with an aim of achieving a distribution by broad industry groupings that approximates the distribution of these groupings in the common stock population of the U.S. equity market. Although the SPX contains 500 constituent companies, at any one time it may contain greater than 500 constituent trading lines since some companies included in the SPX prior to July 31, 2017 may be represented by multiple share class lines in the SPX. The SPX is calculated, maintained and published by S&P and is part of the S&P Dow Jones Indices family of indices. Additional information is available on the following websites: [spglobal.com/spdji/en/indices/equity/sp-500](http://spglobal.com/spdji/en/indices/equity/sp-500) and [spglobal.com](http://spglobal.com).

S&P intends for the SPX to provide a performance benchmark for the large-cap U.S. equity markets. Constituent changes are made on an as-needed basis and there is no schedule for constituent reviews. Index additions and deletions are 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 Index Committee. Relevant criteria for additions to the SPX that are employed by S&P include: the company proposed for addition should have an unadjusted company market capitalization of \$9.8 billion or more and a security level float-adjusted market capitalization of at least 50% of such threshold (for spin-offs, eligibility is determined using when-issued prices, if available); using composite pricing and volume, the ratio of annual dollar value traded (defined as average closing price over the period multiplied by historical volume) in the proposed constituent to float-adjusted market capitalization of that company should be at least 1.00 and the stock should trade a minimum of 250,000 shares in each of the six months leading up to the evaluation date; the company must be a U.S. company (characterized as a Form 10-K filer with its U.S. portion of fixed assets and revenues constituting a plurality of the total and with a primary listing of the common stock 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 (each, an “eligible exchange”)); the proposed constituent has an investable weight factor (“IWF”) of 10% or more; the inclusion of the company will contribute to sector balance in the SPX relative to sector balance in the market in the relevant market capitalization range; 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); and, for IPOs, the company must be traded on an eligible exchange for at least twelve months (spin-offs or in-specie distributions from existing constituents do not need to be traded on an eligible exchange for twelve months prior to their inclusion in the SPX). In addition, constituents of the S&P MidCap 400® Index and the S&P SmallCap 600® Index can be added to the SPX provided they meet the unadjusted company level market capitalization eligibility criteria for the SPX. Migrations from the S&P MidCap 400® Index or the S&P SmallCap 600® Index do not need to meet the financial viability, liquidity, or 50% of the SPX's unadjusted company level minimum market capitalization threshold criteria. Further, constituents of the S&P Total Market Index Ex S&P Composite 1500 (which includes all eligible U.S. common equities except for those included in the SPX, the S&P MidCap 400® Index and the S&P SmallCap 600® Index) that acquire a constituent of the SPX, the S&P MidCap 400® Index or the S&P SmallCap 600® Index that do not fully meet the financial viability or IWF criteria may still be added to the SPX at the discretion of the Index Committee if the Index Committee determines that the addition could minimize turnover and enhance the representativeness of the SPX as a market benchmark. Certain types of organizational structures and securities are always excluded, including, but not limited to, business development companies (BDCs), limited partnerships, master limited partnerships, limited liability companies (LLCs), OTC bulletin board issues, closed-end funds, ETFs, ETNs, royalty trusts, tracking stocks, special purpose acquisition companies (SPACs), preferred stock

and convertible preferred stock, unit trusts, equity warrants, convertible bonds, investment trusts, rights and American depositary receipts (ADRs). Stocks are deleted from the SPX when they are involved in mergers, acquisitions or significant restructurings such that they no longer meet the inclusion criteria, and when they substantially violate one or more of the addition criteria. Stocks that are delisted or moved to the pink sheets or the bulletin board are removed, and those that experience a trading halt may be retained or removed in S&P's discretion. S&P evaluates additions and deletions with a view to maintaining SPX continuity.

For constituents included in the SPX prior to July 31, 2017, all publicly listed multiple share class lines are included separately in the SPX, subject to, in the case of any such share class line, that share class line satisfying the liquidity and float criteria discussed above and subject to certain exceptions. It is possible that one listed share class line of a company may be included in the SPX while a second listed share class line of the same company is excluded. For companies that issue a second publicly traded share class to index share class holders, the newly issued share class line is considered for inclusion if the event is mandatory and the market capitalization of the distributed class is not considered to be de minimis.

As of July 31, 2017, companies with multiple share class lines are no longer eligible for inclusion in the SPX. Only common shares are considered when determining whether a company has a multiple share class structure. Constituents of the SPX prior to July 31, 2017 with multiple share class lines will be grandfathered in and continue to be included in the SPX. If an SPX constituent reorganizes into a multiple share class line structure, that company will be reviewed for continued inclusion in the SPX at the discretion of the S&P Index Committee.

### **Calculation of the OEX**

The OEX is calculated using a base-weighted aggregative methodology. This discussion describes the "price return" calculation of the OEX. The applicable pricing supplement will describe the calculation if the underlier for your securities is not the price return calculation. The value of the OEX on any day for which an index value is published is determined by a fraction, the numerator of which is the aggregate of the market price of each stock in the OEX *times* the number of shares of such stock included in the OEX, and the denominator of which is the divisor, which is described more fully below. The "market value" of any index stock is the *product* of the market price per share of that stock *times* the number of the then-outstanding shares of such index stock that are then included in the OEX.

The OEX is also sometimes called a "base-weighted aggregative index" because of its use of a divisor. The "divisor" is a value calculated by S&P that is intended to maintain conformity in index values over time and is adjusted for all changes in the index stocks' share capital after the "base date" as described below. The level of the OEX reflects the total market value of all index stocks relative to the index's base date of 1941-43.

In addition, the OEX is float-adjusted, meaning that the share counts used in calculating the OEX reflect only those shares available to investors rather than all of a company's outstanding shares. S&P seeks to exclude shares held by long-term, strategic shareholders concerned with the control of a company, a group that generally includes the following: officers and directors and related individuals whose holdings are publicly disclosed, private equity, venture capital, special equity firms, asset managers and insurance companies with board of director representation, publicly traded companies that hold shares in another company, holders of restricted shares (except for shares held as part of a lock-up agreement), company-sponsored employee share plans/trusts, defined contribution plans/savings, investment plans, foundations or family trusts associated with the company, government entities at all levels (except government retirement or pension funds), sovereign wealth funds and any individual person listed as a 5% or greater stakeholder in a company as reported in regulatory filings (collectively, "strategic holders"). To this end, S&P excludes all share-holdings (other than depositary banks, pension funds (including government pension and retirement funds), mutual funds, exchange traded fund providers, investment funds, asset managers (including hedge funds with no board of director representation), investment funds of insurance companies and independent foundations not associated with the company) with a position greater than 5% of the outstanding shares of a company from the float-adjusted share count to be used in OEX calculations.

The exclusion is accomplished by calculating an IWF for each stock that is part of the numerator of the float-adjusted index fraction described above:

$$\text{IWF} = (\text{available float shares})/(\text{total shares outstanding})$$

where available float shares is defined as total shares outstanding less shares held by strategic holders. In most cases, an IWF is reported to the nearest one percentage point. For companies with multiple share class lines, a separate IWF is calculated for each share class line.

### **Maintenance of the OEX**

In order to keep the OEX comparable over time S&P engages in an index maintenance process. The OEX maintenance process involves changing the constituents as discussed above, and also involves maintaining quality assurance processes and procedures, adjusting the number of shares used to calculate the OEX, monitoring and completing the adjustments for company additions and deletions, adjusting for stock splits and stock dividends and adjusting for other

corporate actions. In addition to its daily governance of indices and maintenance of the OEX methodology, at least once within any 12 month period, the S&P Index Committee reviews the OEX methodology to ensure the OEX continues to achieve the stated objective, and that the data and methodology remain effective. The S&P Index Committee may at times consult with investors, market participants, security issuers included in or potentially included in the OEX, or investment and financial experts.

#### Divisor Adjustments

The two types of adjustments primarily used by S&P are divisor adjustments and adjustments to the number of shares (including float adjustments) used to calculate the OEX. Set forth below is a table of certain corporate events and their resulting effect on the divisor and the share count. If a corporate event requires an adjustment to the divisor, that event has the effect of altering the market value of the affected index stock and consequently of altering the aggregate market value of the index stocks following the event. In order that the level of the OEX not be affected by the altered market value (which could be an increase or decrease) of the affected index stock, S&P generally derives a new divisor by dividing the post-event market value of the index stocks by the pre-event index value, which has the effect of reducing the OEX's post-event value to the pre-event level.

#### Changes to the Number of Shares of a Constituent

The index maintenance process also involves tracking the changes in the number of shares included for each of the index companies. Changes as a result of mandatory events, such as mergers or acquisition driven share/IWF changes, stock splits and mandatory distributions are not subject to a minimum threshold for implementation and are implemented when the transaction occurs. At S&P's discretion, however, de minimis merger and acquisition changes may be accumulated and implemented with the updates made with the quarterly share updates as described below. Material share/IWF changes resulting from certain non-mandatory corporate actions follow the accelerated implementation rule. Non-material share/IWF changes are implemented quarterly.

#### Accelerated Implementation Rule

1. Public offerings. Public offerings of new company-issued shares and/or existing shares offered by selling shareholders, including block sales and spot secondaries, will be eligible for accelerated implementation treatment if the size of the event meets the materiality threshold criteria:

- (a) at least \$150 million, and
- (b) at least 5% of the pre-event total shares.

In addition to the materiality threshold, public offerings must satisfy the following conditions:

- be underwritten.
- have a publicly available prospectus, offering document, or prospectus summary filed with the relevant authorities.
- have a publicly available confirmation from an official source that the offering has been completed.

For public offerings that involve a concurrent combination of new company shares and existing shares offered by selling shareholders, both events are implemented if either of the public offerings represent at least 5% of total shares and \$150 million. Any concurrent share repurchase by the affected company will also be included in the implementation.

2. Dutch Auctions, self-tender offer buybacks, and split-off exchange offers. These nonmandatory corporate action types will be eligible for accelerated implementation treatment regardless of size once their results are publicly announced and verified by S&P.

#### Exception to the Accelerated Implementation Rule

For non-mandatory corporate actions subject to the accelerated implementation rule with a size of at least \$1 billion, S&P will apply the share change, and any resulting IWF change, using the latest share and ownership information publicly available at the time of the announcement, even if the offering size is below the 5% threshold. This exception ensures that very large events are recognized in a timely manner using the latest available information.

All non-mandatory events not covered by the accelerated implementation rule (including but not limited to private placements, acquisition of private companies, and conversion of non-index share lines) will be implemented quarterly coinciding with the third Friday of the third month in each calendar quarter. In addition, events that were not implemented

under the accelerated implementation rule but were found to have been eligible, (e.g., due to lack of publicly available information at the time of the event) are implemented as part of a quarterly rebalancing.

#### Announcement Policy

For accelerated implementation, S&P will provide two (2) business days' notice for all non-U.S. domiciled stocks, and one (1) business days' notice for all U.S. domiciled stocks.

#### IWF Updates

Accelerated implementation for events less than \$1 billion will include an adjustment to the company's IWF only to the extent that such an IWF change helps the new float share total mimic the shares available in the offering. To minimize unnecessary turnover, these IWF changes do not need to meet any minimum threshold requirement for implementation. Any IWF change resulting in an IWF of 0.96 or greater is rounded up to 1.00 at the next annual IWF 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.

Quarterly share change events resulting from the conversion of derivative securities, acquisitions of private companies, or acquisitions of non-index companies that do not trade on a major exchange are considered to be available to investors unless there is explicit information stating that the new owner is a strategic holder.

Other than the situations described above, please note that IWF changes are only made at the annual IWF review.

#### Share Updates

When total shares outstanding increase by at least 5%, but the new share issuance is to a strategic or major shareholder, it implies that there is no change in float-adjusted shares. However, in such instances, S&P will apply the share change and resulting IWF change regardless of whether the float change is greater than or equal to 5%.

For companies with multiple share class lines, the 5% share change threshold is based on each individual multiple share class line rather than total company shares.

Changes to share counts that total less than 5% of total shares are accumulated and made quarterly on the third Friday of March, June, September, and December.

#### Exceptions:

Any non-fully paid or non-fully settled offering such as forward sales agreements are not eligible for accelerated implementation. Share updates resulting from completion of subscription receipts terms or the settlement of forward sale agreements are updated at a future quarterly share rebalance.

#### Rebalancing Guidelines – Share/IWF Freeze

A share/IWF freeze period is implemented during each quarterly rebalancing. 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 are normally released after the market close on the second Friday, one week prior to the rebalancing effective date. In September, preliminary share and float data is released on the first Friday of the month. However, the share freeze period for September follows the same schedule as the other three quarterly share freeze periods. For illustration purposes, if rebalancing pro-forma files are scheduled to be released on Friday, March 13, the share/IWF freeze period will begin after the close of trading on Tuesday, March 10 and will end after the close of trading the following Friday, March 20 (i.e., the third Friday of the rebalancing month).

During the share/IWF freeze period, shares and IWFs are not changed except for mandatory corporate action events (such as merger activity, stock splits, and rights offerings), and the accelerated implementation rule is suspended. 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.

#### Adjustments for Corporate Actions

There is a large range of corporate actions that may affect companies included in the OEX. Certain corporate actions require S&P to recalculate the share count or the float adjustment or to make an adjustment to the divisor to prevent the value of the OEX from changing as a result of the corporate action. This helps ensure that the movement of the OEX does not reflect the corporate actions of individual companies in the OEX.

## Spin-Offs

As a general policy, a spin-off security is added to the OEX on the ex-date at a price of zero (with no divisor adjustment) and will remain in the OEX for at least one trading day. The spin-off security will remain in the OEX if it meets all eligibility criteria. If the spin-off security is determined ineligible to remain in the OEX, it will generally be removed after at least one day of regular way trading (with a divisor adjustment). The weight of the spin-off being deleted 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.

Companies that are spun off from a constituent of the OEX do not need to meet the eligibility criteria for new constituents, but they should be considered U.S. domiciled for index purposes. At the discretion of the Index Committee, a spin-off company may be retained in the OEX if the Index Committee determines it has a total market capitalization representative of the OEX. If the spin-off company's estimated market capitalization is below the minimum unadjusted company market capitalization for the OEX but there are other constituent companies in the OEX that have a significantly lower total market capitalization than the spin-off company, the Index Committee may decide to retain the spin-off company in the OEX.

Several additional types of corporate actions, and their related treatment, are listed in the table below.

<b>Corporate Action</b>	<b>Treatment</b>
Company addition/deletion	<u>Addition</u> Companies are added at the float market capitalization weight. The net change to the index market capitalization causes a divisor adjustment. <u>Deletion</u> The weights of all stocks in the 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
Change in shares outstanding	Increasing (decreasing) the shares outstanding increases (decreases) the market capitalization of the 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.
Change in IWF	Increasing (decreasing) the IWF increases (decreases) the market capitalization of the index. A net change to the index market capitalization causes a divisor adjustment.
Ordinary dividend	When a company pays an ordinary cash dividend, the index does not make any adjustments to the price or shares of the stock. As a result there are no divisor adjustments to the index.
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.

Any company that is removed from the OEX must wait a minimum of one year from its removal date before being reconsidered as a replacement candidate for the OEX.

### ***Recalculation Policy***

S&P reserves the right to recalculate and republish the OEX at its discretion in the event one of the following issues has occurred: (1) incorrect or revised closing price of one or more constituent securities; (2) missed or misapplied corporate action; (3) incorrect application of an index methodology; (4) late announcement of a corporate action; or (5) incorrect calculation or data entry error. The decision to recalculate the OEX is made at the discretion of the index

manager and/or index committee, as further discussed below. The potential market impact or disruption resulting from a recalculation is considered when making any such decision. In the event of an incorrect closing price, a missed or misapplied corporate action, a late announcement of a corporate action, or an incorrect calculation or data entry error that is discovered within two trading days of its occurrence, generally the OEX is recalculated. In the event any such event is discovered beyond the two trading day period, the index committee shall decide whether the OEX should be recalculated. In the event of an incorrect application of the methodology that results in the incorrect composition and/or weighting of index constituents, the index committee shall determine whether or not to recalculate the OEX following specified guidelines. In the event that the OEX is recalculated, it shall be done within a reasonable timeframe following the detection and review of the issue.

### ***Calculations and Pricing Disruptions***

Closing levels for the OEX are calculated by S&P based on the closing price of the individual constituents of the OEX as set by their primary exchange. Closing prices are received by S&P from one of its third party vendors and verified by comparing them with prices from an alternative vendor. The vendors receive the closing price from the primary exchanges. Real-time intraday prices are calculated similarly without a second verification. Official end-of-day calculations are based on each stock's primary market closing price. Prices used for the calculation of real time index values are based on the "Consolidated Tape." The Consolidated Tape is an aggregation of trades for each constituent over all regional exchanges and trading venues and includes the primary exchange. If there is a failure or interruption on one or more exchanges, real-time calculations will continue as long as the "Consolidated Tape" is operational.

If an interruption is not resolved prior to the market close, official closing prices will be determined by following the hierarchy set out in NYSE Rule 123C. A notice is published on the S&P website at [spglobal.com](http://spglobal.com) indicating any changes to the prices used in OEX calculations. In extreme circumstances, S&P may decide to delay index adjustments or not publish the OEX. Real-time indices are not restated.

### ***Unexpected Exchange Closures***

An unexpected market/exchange closure occurs when a market/exchange fully or partially fails to open or trading is temporarily halted. This can apply to a single exchange or to a market as a whole, when all of the primary exchanges are closed and/or not trading. Unexpected market/exchange closures are usually due to unforeseen circumstances, such as natural disasters, inclement weather, outages, or other events.

To a large degree, S&P is dependent on the exchanges to provide guidance in the event of an unexpected exchange closure. S&P's decision making is dependent on exchange guidance regarding pricing and mandatory corporate actions.

NYSE Rule 123C provides closing contingency procedures for determining an official closing price for listed securities if the exchange is unable to conduct a closing transaction in one or more securities due to a system or technical issue.

3:00 PM ET is the deadline for an exchange to determine its plan of action regarding an outage scenario. As such, S&P also uses 3:00 PM ET as the cutoff.

If all major exchanges fail to open or unexpectedly halt trading intraday due to unforeseen circumstances, S&P will take the following actions:

#### **Market Disruption Prior to Open of Trading:**

- (i) If all exchanges indicate that trading will not open for a given day, S&P will treat the day as an unscheduled market holiday. The decision will be communicated to clients as soon as possible through the normal channels. Indices containing multiple markets will be calculated as normal, provided that at least one market is open that day. Indices which only contain closed markets will not be calculated.
- (ii) If exchanges indicate that trading, although delayed, will open for a given day, S&P will begin index calculation when the exchanges open.

#### **Market Disruption Intraday:**

- (i) If exchanges indicate that trading will not resume for a given day, the OEX level will be calculated using prices determined by the exchanges based on NYSE Rule 123C. Intraday OEX values will continue to use the last traded composite price until the primary exchange publishes official closing prices.

### ***License Agreement with S&P***

HSBC has entered into a nonexclusive license agreement providing for the license to it, in exchange for a fee, of the right to use indices owned and published by S&P in connection with some products, including the Notes.



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The Notes are not sponsored, endorsed, sold or promoted by S&P Dow Jones Indices. S&P makes no representation or warranty, express or implied, to the owners of the Notes or any member of the public regarding the advisability of investing in securities generally or in the Notes particularly or the ability of the OEX to track general market performance. S&P's only relationship to HSBC is the licensing of the OEX and certain trademarks, service marks and/or trade names of S&P. The OEX is determined, composed and calculated by S&P without regard to HSBC or the Notes. S&P has no obligation to take the needs of HSBC or the owners of the Notes into consideration in determining, composing or calculating the OEX. S&P is not responsible for and has not participated in the determination of the prices and amount of the Notes or the timing of the issuance or sale of the Notes or in the determination or calculation of the equation by which the Notes are to be converted into cash. S&P has no obligation or liability in connection with the administration, marketing or trading of the Notes. There is no assurance that investment products based on the OEX will accurately track index performance or provide positive investment returns. S&P is not an investment advisor. Inclusion of a security within the OEX is not a recommendation by S&P to buy, sell or hold such security, nor is it considered to be investment advice.

S&P DOES NOT GUARANTEE THE ADEQUACY, ACCURACY, TIMELINESS AND/OR THE COMPLETENESS OF THE OEX OR ANY DATA RELATED THERETO OR ANY COMMUNICATION, INCLUDING BUT NOT LIMITED TO, ORAL OR WRITTEN COMMUNICATION (INCLUDING ELECTRONIC COMMUNICATIONS) WITH RESPECT THERETO. S&P SHALL NOT BE SUBJECT TO ANY DAMAGES OR LIABILITY FOR ANY ERRORS, OMISSIONS OR DELAYS THEREIN. S&P MAKES NO EXPRESS OR IMPLIED WARRANTIES, AND EXPRESSLY DISCLAIMS ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE OR AS TO RESULTS TO BE OBTAINED BY HSBC, OWNERS OF THE NOTES, OR ANY OTHER PERSON OR ENTITY FROM THE USE OF THE OEX OR WITH RESPECT TO ANY DATA RELATED THERETO. WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT WHATSOEVER SHALL S&P BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS, TRADING LOSSES, LOST TIME OR GOODWILL, EVEN IF THEY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER IN CONTRACT, TORT, STRICT LIABILITY, OR OTHERWISE. THERE ARE NO THIRD PARTY BENEFICIARIES OF ANY AGREEMENTS OR ARRANGEMENTS BETWEEN S&P AND HSBC, OTHER THAN THE LICENSORS OF S&P.

## THE S&P 500® INDEX

***The disclosure relating to the S&P 500® Index (the “SPX”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the SPX.***

### ***S&P Publishes the SPX***

The SPX, which we also refer to in this description as the “index,” was first launched on March 4, 1957 based on an initial value of 10 from 1941-1943, and it is sponsored by S&P. The SPX includes a representative sample of 500 companies in leading industries of the U.S. economy. The 500 companies are not the 500 largest companies listed on the NYSE and not all 500 companies are listed on the NYSE. S&P chooses companies for inclusion in the SPX with an aim of achieving a distribution by broad industry groupings that approximates the distribution of these groupings in the common stock population of the U.S. equity market. Although the SPX contains 500 constituent companies, at any one time it may contain greater than 500 constituent trading lines since some companies included in the SPX prior to July 31, 2017 may be represented by multiple share class lines in the SPX. The SPX is calculated, maintained and published by S&P and is part of the S&P Dow Jones Indices family of indices. Additional information is available on the following websites: [spglobal.com/spdji/en/indices/equity/sp-500](http://spglobal.com/spdji/en/indices/equity/sp-500) and [spglobal.com](http://spglobal.com).

S&P intends for the SPX to provide a performance benchmark for the large-cap U.S. equity markets. Constituent changes are made on an as-needed basis and there is no schedule for constituent reviews. Index additions and deletions are 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 Index Committee. Relevant criteria for additions to the SPX that are employed by S&P include: the company proposed for addition should have an unadjusted company market capitalization of \$9.8 billion or more and a security level float-adjusted market capitalization of at least 50% of such threshold (for spin-offs, eligibility is determined using when-issued prices, if available); using composite pricing and volume, the ratio of annual dollar value traded (defined as average closing price over the period multiplied by historical volume) in the proposed constituent to float-adjusted market capitalization of that company should be at least 1.00 and the stock should trade a minimum of 250,000 shares in each of the six months leading up to the evaluation date; the company must be a U.S. company (characterized as a Form 10-K filer with its U.S. portion of fixed assets and revenues constituting a plurality of the total and with a primary listing of the common stock 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 (each, an “eligible exchange”)); the proposed constituent has an investable weight factor (“IWF”) of 10% or more; the inclusion of the company will contribute to sector balance in the SPX relative to sector balance in the market in the relevant market capitalization range; 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); and, for IPOs, the company must be traded on an eligible exchange for at least twelve months (spin-offs or in-specie distributions from existing constituents do not need to be traded on an eligible exchange for twelve months prior to their inclusion in the SPX). In addition, constituents of the S&P MidCap 400® Index and the S&P SmallCap 600® Index can be added to the SPX provided they meet the unadjusted company level market capitalization eligibility criteria for the SPX. Migrations from the S&P MidCap 400® Index or the S&P SmallCap 600® Index do not need to meet the financial viability, liquidity, or 50% of the SPX's unadjusted company level minimum market capitalization threshold criteria. Further, constituents of the S&P Total Market Index Ex S&P Composite 1500 (which includes all eligible U.S. common equities except for those included in the SPX, the S&P MidCap 400® Index and the S&P SmallCap 600® Index) that acquire a constituent of the SPX, the S&P MidCap 400® Index or the S&P SmallCap 600® Index that do not fully meet the financial viability or IWF criteria may still be added to the SPX at the discretion of the Index Committee if the Index Committee determines that the addition could minimize turnover and enhance the representativeness of the SPX as a market benchmark. Certain types of organizational structures and securities are always excluded, including, but not limited to, business development companies (BDCs), limited partnerships, master limited partnerships, limited liability companies (LLCs), OTC bulletin board issues, closed-end funds, ETFs, ETNs, royalty trusts, tracking stocks, special purpose acquisition companies (SPACs), preferred stock and convertible preferred stock, unit trusts, equity warrants, convertible bonds, investment trusts, rights and American depositary receipts (ADRs). Stocks are deleted from the SPX when they are involved in mergers, acquisitions or significant restructurings such that they no longer meet the inclusion criteria, and when they substantially violate one or more of the addition criteria. Stocks that are delisted or moved to the pink sheets or the bulletin board are removed, and those that experience a trading halt may be retained or removed in S&P's discretion. S&P evaluates additions and deletions with a view to maintaining SPX continuity.

For constituents included in the SPX prior to July 31, 2017, all publicly listed multiple share class lines are included separately in the SPX, subject to, in the case of any such share class line, that share class line satisfying the liquidity and float criteria discussed above and subject to certain exceptions. It is possible that one listed share class line of a company may be included in the SPX while a second listed share class line of the same company is excluded. For companies that issue a second publicly traded share class to index share class holders, the newly issued share class line is considered for inclusion if the event is mandatory and the market capitalization of the distributed class is not considered to be de minimis.

As of July 31, 2017, companies with multiple share class lines are no longer eligible for inclusion in the SPX. Only common shares are considered when determining whether a company has a multiple share class structure. Constituents of the SPX prior to July 31, 2017 with multiple share class lines will be grandfathered in and continue to be included in the SPX. If an SPX constituent reorganizes into a multiple share class line structure, that company will be reviewed for continued inclusion in the SPX at the discretion of the S&P Index Committee.

### **Calculation of the SPX**

The SPX is calculated using a base-weighted aggregative methodology. This discussion describes the “price return” calculation of the SPX. The applicable pricing supplement will describe the calculation if the underlier for your securities is not the price return calculation. The value of the SPX on any day for which an index value is published is determined by a fraction, the numerator of which is the aggregate of the market price of each stock in the SPX *times* the number of shares of such stock included in the SPX, and the denominator of which is the divisor, which is described more fully below. The “market value” of any index stock is the *product* of the market price per share of that stock *times* the number of the then-outstanding shares of such index stock that are then included in the SPX.

The SPX is also sometimes called a “base-weighted aggregative index” because of its use of a divisor. The “divisor” is a value calculated by S&P that is intended to maintain conformity in index values over time and is adjusted for all changes in the index stocks’ share capital after the “base date” as described below. The level of the SPX reflects the total market value of all index stocks relative to the index’s base period of 1941-1943.

In addition, the SPX is float-adjusted, meaning that the share counts used in calculating the SPX reflect only those shares available to investors rather than all of a company’s outstanding shares. S&P seeks to exclude shares held by long-term, strategic shareholders concerned with the control of a company, a group that generally includes the following: officers and directors and related individuals whose holdings are publicly disclosed, private equity, venture capital, special equity firms, asset managers and insurance companies with board of director representation, publicly traded companies that hold shares in another company, holders of restricted shares (except for shares held as part of a lock-up agreement), company-sponsored employee share plans/trusts, defined contribution plans/savings, investment plans, foundations or family trusts associated with the company, government entities at all levels (except government retirement or pension funds), sovereign wealth funds and any individual person listed as a 5% or greater stakeholder in a company as reported in regulatory filings (collectively, “strategic holders”). To this end, S&P excludes all share-holdings (other than depository banks, pension funds (including government pension and retirement funds), mutual funds, exchange traded fund providers, investment funds, asset managers (including hedge funds with no board of director representation), investment funds of insurance companies and independent foundations not associated with the company) with a position greater than 5% of the outstanding shares of a company from the float-adjusted share count to be used in SPX calculations.

The exclusion is accomplished by calculating an IWF for each stock that is part of the numerator of the float-adjusted index fraction described above:

$$\text{IWF} = (\text{available float shares})/(\text{total shares outstanding})$$

where available float shares is defined as total shares outstanding less shares held by strategic holders. In most cases, an IWF is reported to the nearest one percentage point. For companies with multiple share class lines, a separate IWF is calculated for each share class line.

### **Maintenance of the SPX**

In order to keep the SPX comparable over time S&P engages in an index maintenance process. The SPX maintenance process involves changing the constituents as discussed above, and also involves maintaining quality assurance processes and procedures, adjusting the number of shares used to calculate the SPX, monitoring and completing the adjustments for company additions and deletions, adjusting for stock splits and stock dividends and adjusting for other corporate actions. In addition to its daily governance of indices and maintenance of the SPX methodology, at least once within any 12 month period, the S&P Index Committee reviews the SPX methodology to ensure the SPX continues to achieve the stated objective, and that the data and methodology remain effective. The S&P Index Committee may at times consult with investors, market participants, security issuers included in or potentially included in the SPX, or investment and financial experts.

### Divisor Adjustments

The two types of adjustments primarily used by S&P are divisor adjustments and adjustments to the number of shares (including float adjustments) used to calculate the SPX. Set forth below is a table of certain corporate events and their resulting effect on the divisor and the share count. If a corporate event requires an adjustment to the divisor, that event has the effect of altering the market value of the affected index stock and consequently of altering the aggregate market value of the index stocks following the event. In order that the level of the SPX not be affected by the altered market value (which could be an increase or decrease) of the affected index stock, S&P generally derives a new divisor by

dividing the post-event market value of the index stocks by the pre-event index value, which has the effect of reducing the SPX's post-event value to the pre-event level.

#### Changes to the Number of Shares of a Constituent

The index maintenance process also involves tracking the changes in the number of shares included for each of the index companies. Changes as a result of mandatory events, such as mergers or acquisition driven share/IWF changes, stock splits and mandatory distributions are not subject to a minimum threshold for implementation and are implemented when the transaction occurs. At S&P's discretion, however, de minimis merger and acquisition changes may be accumulated and implemented with the updates made with the quarterly share updates as described below. Material share/IWF changes resulting from certain non-mandatory corporate actions follow the accelerated implementation rule. Non-material share/IWF changes are implemented quarterly.

#### Accelerated Implementation Rule

1. Public offerings. Public offerings of new company-issued shares and/or existing shares offered by selling shareholders, including block sales and spot secondaries, will be eligible for accelerated implementation treatment if the size of the event meets the materiality threshold criteria:

- (a) at least \$150 million, and
- (b) at least 5% of the pre-event total shares.

In addition to the materiality threshold, public offerings must satisfy the following conditions:

- be underwritten.
- have a publicly available prospectus, offering document, or prospectus summary filed with the relevant authorities.
- have a publicly available confirmation from an official source that the offering has been completed.

For public offerings that involve a concurrent combination of new company shares and existing shares offered by selling shareholders, both events are implemented if either of the public offerings represent at least 5% of total shares and \$150 million. Any concurrent share repurchase by the affected company will also be included in the implementation.

2. Dutch Auctions, self-tender offer buybacks, and split-off exchange offers. These nonmandatory corporate action types will be eligible for accelerated implementation treatment regardless of size once their results are publicly announced and verified by S&P.

#### Exception to the Accelerated Implementation Rule

For non-mandatory corporate actions subject to the accelerated implementation rule with a size of at least \$1 billion, S&P will apply the share change, and any resulting IWF change, using the latest share and ownership information publicly available at the time of the announcement, even if the offering size is below the 5% threshold. This exception ensures that very large events are recognized in a timely manner using the latest available information.

All non-mandatory events not covered by the accelerated implementation rule (including but not limited to private placements, acquisition of private companies, and conversion of non-index share lines) will be implemented quarterly coinciding with the third Friday of the third month in each calendar quarter. In addition, events that were not implemented under the accelerated implementation rule but were found to have been eligible, (e.g., due to lack of publicly available information at the time of the event) are implemented as part of a quarterly rebalancing.

#### Announcement Policy

For accelerated implementation, S&P will provide two (2) business days' notice for all non-U.S. domiciled stocks, and one (1) business days' notice for all U.S. domiciled stocks.

#### IWF Updates

Accelerated implementation for events less than \$1 billion will include an adjustment to the company's IWF only to the extent that such an IWF change helps the new float share total mimic the shares available in the offering. To minimize unnecessary turnover, these IWF changes do not need to meet any minimum threshold requirement for implementation. Any IWF change resulting in an IWF of 0.96 or greater is rounded up to 1.00 at the next annual IWF 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.

Quarterly share change events resulting from the conversion of derivative securities, acquisitions of private companies, or acquisitions of non-index companies that do not trade on a major exchange are considered to be available to investors unless there is explicit information stating that the new owner is a strategic holder.

Other than the situations described above, please note that IWF changes are only made at the annual IWF review.

#### Share Updates

When total shares outstanding increase by at least 5%, but the new share issuance is to a strategic or major shareholder, it implies that there is no change in float-adjusted shares. However, in such instances, S&P will apply the share change and resulting IWF change regardless of whether the float change is greater than or equal to 5%.

For companies with multiple share class lines, the 5% share change threshold is based on each individual multiple share class line rather than total company shares.

Changes to share counts that total less than 5% of total shares are accumulated and made quarterly on the third Friday of March, June, September, and December.

#### Exceptions:

Any non-fully paid or non-fully settled offering such as forward sales agreements are not eligible for accelerated implementation. Share updates resulting from completion of subscription receipts terms or the settlement of forward sale agreements are updated at a future quarterly share rebalance.

#### Rebalancing Guidelines – Share/IWF Freeze

A share/IWF freeze period is implemented during each quarterly rebalancing. 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 are normally released after the market close on the second Friday, one week prior to the rebalancing effective date. In September, preliminary share and float data is released on the first Friday of the month. However, the share freeze period for September follows the same schedule as the other three quarterly share freeze periods. For illustration purposes, if rebalancing pro-forma files are scheduled to be released on Friday, March 13, the share/IWF freeze period will begin after the close of trading on Tuesday, March 10 and will end after the close of trading the following Friday, March 20 (i.e., the third Friday of the rebalancing month).

During the share/IWF freeze period, shares and IWFs are not changed except for mandatory corporate action events (such as merger activity, stock splits, and rights offerings), and the accelerated implementation rule is suspended. 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.

#### Adjustments for Corporate Actions

There is a large range of corporate actions that may affect companies included in the SPX. Certain corporate actions require S&P to recalculate the share count or the float adjustment or to make an adjustment to the divisor to prevent the value of the SPX from changing as a result of the corporate action. This helps ensure that the movement of the SPX does not reflect the corporate actions of individual companies in the SPX.

#### Spin-Offs

As a general policy, a spin-off security is added to the SPX on the ex-date at a price of zero (with no divisor adjustment) and will remain in the SPX for at least one trading day. The spin-off security will remain in the SPX if it meets all eligibility criteria. If the spin-off security is determined ineligible to remain in the SPX, it will generally be removed after at least one day of regular way trading (with a divisor adjustment). The weight of the spin-off being deleted 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.

Companies that are spun off from a constituent of the SPX do not need to meet the eligibility criteria for new constituents, but they should be considered U.S. domiciled for index purposes. At the discretion of the Index Committee, a spin-off company may be retained in the SPX if the Index Committee determines it has a total market capitalization representative of the SPX. If the spin-off company's estimated market capitalization is below the minimum unadjusted company market capitalization for the SPX but there are other constituent companies in the SPX that have a significantly lower total market capitalization than the spin-off company, the Index Committee may decide to retain the spin-off company in the SPX.

Several additional types of corporate actions, and their related treatment, are listed in the table below.

<b>Corporate Action</b>	<b>Treatment</b>
Company addition/deletion	<p><u>Addition</u> Companies are added at the float market capitalization weight. The net change to the index market capitalization causes a divisor adjustment.</p> <p><u>Deletion</u> The weights of all stocks in the 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>
Change in shares outstanding	Increasing (decreasing) the shares outstanding increases (decreases) the market capitalization of the 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.
Change in IWF	Increasing (decreasing) the IWF increases (decreases) the market capitalization of the index. A net change to the index market capitalization causes a divisor adjustment.
Ordinary dividend	When a company pays an ordinary cash dividend, the index does not make any adjustments to the price or shares of the stock. As a result there are no divisor adjustments to the index.
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.

Any company that is removed from the SPX, the S&P MidCap 400® Index or the S&P SmallCap 600® Index must wait a minimum of one year from its removal date before being reconsidered as a replacement candidate for the SPX.

### **Recalculation Policy**

S&P reserves the right to recalculate and republish the SPX at its discretion in the event one of the following issues has occurred: (1) incorrect or revised closing price of one or more constituent securities; (2) missed or misapplied corporate action; (3) incorrect application of an index methodology; (4) late announcement of a corporate action; or (5) incorrect calculation or data entry error. The decision to recalculate the SPX is made at the discretion of the index manager and/or index committee, as further discussed below. The potential market impact or disruption resulting from a recalculation is considered when making any such decision. In the event of an incorrect closing price, a missed or misapplied corporate action, a late announcement of a corporate action, or an incorrect calculation or data entry error that is discovered within two trading days of its occurrence, generally the SPX is recalculated. In the event any such event is discovered beyond the two trading day period, the index committee shall decide whether the SPX should be recalculated. In the event of an incorrect application of the methodology that results in the incorrect composition and/or weighting of index constituents, the index committee shall determine whether or not to recalculate the SPX following specified guidelines. In the event that the SPX is recalculated, it shall be done within a reasonable timeframe following the detection and review of the issue.

### **Calculations and Pricing Disruptions**

Closing levels for the SPX are calculated by S&P based on the closing price of the individual constituents of the SPX as set by their primary exchange. Closing prices are received by S&P from one of its third party vendors and verified by comparing them with prices from an alternative vendor. The vendors receive the closing price from the primary

exchanges. Real-time intraday prices are calculated similarly without a second verification. Official end-of-day calculations are based on each stock's primary market closing price. Prices used for the calculation of real time index values are based on the "Consolidated Tape." The Consolidated Tape is an aggregation of trades for each constituent over all regional exchanges and trading venues and includes the primary exchange. If there is a failure or interruption on one or more exchanges, real-time calculations will continue as long as the "Consolidated Tape" is operational.

If an interruption is not resolved prior to the market close, official closing prices will be determined by following the hierarchy set out in NYSE Rule 123C. A notice is published on the S&P website at spglobal.com indicating any changes to the prices used in SPX calculations. In extreme circumstances, S&P may decide to delay index adjustments or not publish the SPX. Real-time indices are not restated.

### **Unexpected Exchange Closures**

An unexpected market/exchange closure occurs when a market/exchange fully or partially fails to open or trading is temporarily halted. This can apply to a single exchange or to a market as a whole, when all of the primary exchanges are closed and/or not trading. Unexpected market/exchange closures are usually due to unforeseen circumstances, such as natural disasters, inclement weather, outages, or other events.

To a large degree, S&P is dependent on the exchanges to provide guidance in the event of an unexpected exchange closure. S&P's decision making is dependent on exchange guidance regarding pricing and mandatory corporate actions.

NYSE Rule 123C provides closing contingency procedures for determining an official closing price for listed securities if the exchange is unable to conduct a closing transaction in one or more securities due to a system or technical issue.

3:00 PM ET is the deadline for an exchange to determine its plan of action regarding an outage scenario. As such, S&P also uses 3:00 PM ET as the cutoff.

If all major exchanges fail to open or unexpectedly halt trading intraday due to unforeseen circumstances, S&P will take the following actions:

Market Disruption Prior to Open of Trading:

- (i) If all exchanges indicate that trading will not open for a given day, S&P will treat the day as an unscheduled market holiday. The decision will be communicated to clients as soon as possible through the normal channels. Indices containing multiple markets will be calculated as normal, provided that at least one market is open that day. Indices which only contain closed markets will not be calculated.
- (ii) If exchanges indicate that trading, although delayed, will open for a given day, S&P will begin index calculation when the exchanges open.

Market Disruption Intraday:

- (i) If exchanges indicate that trading will not resume for a given day, the SPX level will be calculated using prices determined by the exchanges based on NYSE Rule 123C. Intraday SPX values will continue to use the last traded composite price until the primary exchange publishes official closing prices.

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## THE S&P 500® LOW VOLATILITY INDEX

**The disclosure relating to the S&P 500® Low Volatility Index (the “SPLV”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the SPLV.**

### **S&P Publishes the SPLV**

The SPLV has been calculated since April 20, 2011 and measures the performance of the 100 least volatile stocks in the SPX. Volatility is defined as the standard deviation of the stock’s daily price returns in local currency over the past year. Constituents are weighted relative to the inverse of their corresponding volatility, with the least volatile stocks receiving the highest weights. The SPLV is designed to serve as a benchmark for low volatility or low variance strategies in the U.S. stock market and S&P may from time to time, in its sole discretion, add companies to or delete companies from the SPLV to achieve these objectives.

Changes in the SPLV are reported daily in the financial pages of many major newspapers, on Bloomberg Professional® service under the symbol “SP5LVI” and on the S&P website.

The SPLV does not reflect the payment of dividends on the stocks included in the SPLV and therefore the payment on the Notes will not produce the same return you would receive if you were able to purchase such underlying stocks.

### **Construction of the SPLV**

The methodology employs a volatility driven weighting scheme, using the divisor methodology used in all of S&P’s equity indices. There are two steps in the creation of the SPLV. The first is the selection of the companies; the second is the weighting of the SPLV’s constituents.

To be eligible for inclusion into the SPLV, stocks must first become constituents in the SPX. Relevant criteria employed by S&P for inclusion in the SPX include the viability of the particular company, the extent to which that company represents the industry group to which it is assigned, the extent to which the market price of that company’s common stock is generally responsive to changes in the affairs of the respective industry and the market value and trading activity of the common stock of that company. For information on the SPX please see “The S&P 500® Index” herein.

Additionally, to be eligible for the SPLV, constituents must have traded on all trading days in the 12 months leading up to the rebalancing reference date; however, index committee discretion may be used in situations where a stock was subject to a temporary trading halt during that period.

The selection of constituents included in the SPLV is done as follows:

1. Using available price return data for the trailing one year of trading days leading up to each index rebalancing reference date, the volatilities of the constituents within each eligible universe are calculated.
2. Constituents are, then, ranked in ascending order based on the inverse of the realized volatility. The top 100 securities with the least volatility form the SPLV.

At each rebalancing, the weight for each index constituent is set inversely proportional to its volatility. Volatility is defined as the standard deviation of the security’s daily price returns in local currency over the past year. The SPLV is calculated by means of the divisor methodology used in all S&P’s equity indices. The index value is simply the index market value divided by the Divisor. In order to maintain basket series continuity, S&P also adjusts the divisor at the rebalancing.

### **Maintenance of the SPLV**

#### Rebalancing

The SPLV is rebalanced after the close on the third Friday of each February, May, August and November using market data as of the last trading day of every January, April, July and October, respectively. The constituents’ shares are calculated using closing prices on the Wednesday prior to the second Friday of the rebalancing month as the reference price. Index share amounts are calculated and assigned to each stock to arrive at the weights determined on the reference date. Since index shares are assigned based on prices one week prior to rebalancing, the actual weight of each stock at the rebalancing will differ from these weights due to market movements.

#### Corporate Actions

<b>Corporate Action</b>	<b>Adjustment made to the index</b>	<b>Divisor adjustment?</b>
Spin-off	The spun-off company is added to the index, at a zero price at the market close of the day before the ex-date (with no divisor adjustment). The spun-off company is removed after at least one day of regular way trading (with a divisor adjustment).	

Rights Offering	The price is adjusted to the Price of the Parent Company minus (the Price of the Rights Offering/Rights Ratio). Index shares change so that the company's weight remains the same as its weight before the rights offering.	No
Stock Split	Index shares are multiplied by and the price is divided by the split factor.	No
Share Issuance or Share Repurchase	None. Actual shares outstanding of the company play no role in the daily index calculation.	No
Special Dividends	The price of the stock making the special dividend payment is reduced by the per share special dividend amount after the close of trading on the day before the dividend ex-date.	Yes
Constituent Change	Except for spin-offs, there are no intra-rebalancing additions.	-
	Deletions due to delistings, acquisition or any other corporate event resulting in the deletion of the stock from the index causes the weight of the rest of the stocks in the index to change. Relative weights stay the same.	Yes

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## **THE S&P BRIC 40 INDEX**

***The disclosure relating to the S&P BRIC 40 Index (the “SBR”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the SBR.***

### ***S&P Publishes the SBR***

The SBR (Bloomberg Professional® service index symbol “SBR”) is designed to provide exposure to 40 companies from the emerging markets of Brazil, Russia, India and China through liquid stocks trading on developed market exchanges (specifically, the Hong Kong Stock Exchange, the London Stock Exchange, Nasdaq and the NYSE Euronext). Publication of the SBR began on June 20, 2006, with a base value of 874.48 on February 2, 2004.

The SBR employs a modified market capitalization weighting scheme. All constituent companies must be members of the S&P/IFC Investable (S&P/IFCI) index series for Brazil, Russia, India and China (the “BRIC Countries”). The S&P/IFCI indices measure the returns of emerging market stocks that are legally and practically available to foreign investors. Constituents for the S&P/IFCI series are chosen based on size, liquidity, and their legal and practical availability to foreign institutional investors. The S&P/IFCI indices are calculated on a daily basis for each country.

All constituents of the S&P/IFCI country indices for the BRIC Countries comprise the initial selection universe. All companies that do not have a developed market listing are removed. Average three-month daily value traded (“liquidity”) and float-adjusted market capitalization (“market cap”), as of the reference date, are measured. All stocks with a market cap of less than US\$1 billion (the “Market Cap Threshold”) and/or liquidity of less than US\$5 million (the “Liquidity Threshold”) are removed. If a company has multiple share classes, the share class with the lower liquidity is removed. The remaining stocks are sorted in decreasing order of their float-adjusted market capitalization, and the top 40 become SBR members.

The pricing of the SBR members is taken from the stocks included in the SBR—specifically their developed market listing. If a single stock is trading in multiple developed markets, only the listing from the market with most liquidity is considered. The price of each stock used in the daily SBR level computation is the closing price from its respective exchange. All calculations are made in U.S. dollars. The SBR is calculated in U.S. dollars, with Reuters/WWM London closing fix being used to convert prices to U.S. dollars. The SBR is also calculated in euros.

### ***Index Calculation***

Once the constituent companies are identified, S&P utilizes a modified market capitalization weighing scheme to determine the composition of the SBR. At rebalancing, the starting weight of each stock is proportional to its available market capitalization, which accounts for available float and investment restrictions for foreign investors. The methodology stipulates that, at rebalancing, no stock can have a weight of more than 10% in the SBR and the minimum initial portfolio size that can be turned over in a single day (based on recent trading volumes) cannot be lower than US\$600 million.

### ***Index Maintenance***

The SBR is rebalanced once a year in December. The annual rebalancing of the SBR is effective after the market close on the third Friday of December. The reference date for the data used in the review is the third Friday of November. In addition to the annual rebalancing, there is a mid-year review. A semi-annual rebalancing occurs only if three of the biggest 30 stocks from the eligible universe are not in the SBR at the mid-year review. There is no semi-annual rebalancing in years when this condition is not satisfied. Generally, no companies are added between rebalancings, but a company can be deleted between rebalancings due to corporate events such as mergers, acquisitions, takeovers or delistings. The reference date for the data used in the mid-year review is the third Friday of May, with a mid-year rebalancing being made, if necessary, after the market close on the third Friday of June.

The Global Strategy Index Committee (the “Committee”) maintains the SBR, meeting regularly. The Committee members are full-time professional members of the S&P staff. At each meeting, the SBR Committee reviews pending corporate actions that may affect SBR constituents, statistics comparing the composition of the indices to the market, and any significant market events. In addition, the SBR Committee may revise the SBR policy covering rules for selecting companies, treatment of dividends, share counts or other matters. S&P considers information about changes to its indices and related matters to be potentially market-moving and material. Therefore, all SBR Committee discussions are confidential.

The table below summarizes the types of index maintenance adjustments and indicates whether or not a Divisor adjustment is required.

<u>Type of Corporate Action</u>	<u>Comments</u>	<u>Divisor Adjustment</u>
Spin-Off	The spin-off is added to the 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 and capping adjustment factor (AWF) as its parent company, and will remain in the index for at least one trading day. As a result, there will be no change to the index divisor on the ex-date.  If the spin-off is ineligible for continued inclusion, it will be removed after the ex-date. The weight of the spin-off being deleted is reinvested across all the index components proportionally such that the relative weights of all index components are unchanged. The net change in index market capitalization will cause a divisor change.	No
Rights Offering	The price is adjusted to the Price of the Parent Company minus (the Price of the Rights Offering/Rights Ratio). Index Shares change so that the company's weight remains the same as its weight before the rights offering.	No
Stock Dividend, Stock Split, Reverse Stock Split	Index shares are multiplied by and price is divided by the split factor.	No
Share Issuance, Share Repurchase, Equity Offering or Warrant Conversion	None.	No
Special Dividends	Price of the stock making the special dividend payment is reduced by the per- share special dividend amount after the close of trading on the day before the dividend ex-date.	Yes

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## **THE S&P MIDCAP 400® INDEX**

***The disclosure relating to the S&P MidCap 400® Index (the “MID”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the MID.***

### ***S&P Publishes the MID***

The MID, which we also refer to herein as the “index,” has a launch date of June 19, 1991, with a base value of 100 as of its base date, June 28, 1991, and it is sponsored by S&P. The MID includes a representative sample of 400 mid-sized companies in various industries of the U.S. economy. S&P chooses companies for inclusion in the MID with an aim of achieving a distribution by broad industry groupings that approximates the distribution of these groupings in the common stock population of mid-size companies in the U.S. equity market. Although the MID contains 400 constituent companies, at any one time it may contain greater than 400 constituent trading lines since some companies included in the MID prior to July 31, 2017 may be represented by multiple share class lines in the MID. The MID is calculated, maintained and published by S&P and is part of the S&P Dow Jones Indices family of indices. Additional information is available on the following websites: [spglobal.com/spdji/en/indices/equity/sp-400](http://spglobal.com/spdji/en/indices/equity/sp-400) and [spglobal.com](http://spglobal.com).

The MID is intended to reflect the risk and return characteristics of the broader universe of mid-sized firms in the U.S. equity markets. Index additions and deletions are 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 Index Committee. Constituent changes are generally announced one to five business days prior to the change. Relevant criteria for additions to the MID that are employed by S&P include: the company proposed for addition should have an unadjusted company market capitalization of between \$3.2 billion and \$9.8 billion and a security level float-adjusted market capitalization of at least 50% of such threshold (but the constituents are not the 400 largest companies in the NYSE in that range and not all 400 companies are listed on such exchange; for spin-offs, eligibility is determined using when-issued prices, if available); using composite pricing and volume, the ratio of annual dollar value traded (defined as average closing price over the period multiplied by historical volume) in the proposed constituent to float-adjusted market capitalization of that company should be at least 1.00 and the stock should trade a minimum of 250,000 shares in each of the six months leading up to the evaluation date; the company must be a U.S. company (characterized as a Form 10-K filer with its U.S. portion of fixed assets and revenues constituting a plurality of the total and with a primary listing of the common stock 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 (each, an “eligible exchange”)), the proposed constituent has an investable weight factor (“IWF”) of 10% or more, the inclusion of the company will contribute to sector balance in the MID relative to sector balance in the market in the relevant market capitalization range; 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; and, for IPOs, the company must be traded on an eligible exchange for at least twelve months (spin-offs or in-specie distributions from existing constituents do not need to be traded on an eligible exchange for twelve months prior to their inclusion in the MID). In addition, constituents of the S&P 500® Index and the S&P SmallCap 600® Index can be added to the MID provided they meet the unadjusted company level market capitalization eligibility criteria for the MID. Migrations from the S&P 500® Index or the S&P SmallCap 600® Index do not need to meet the financial viability, liquidity, or 50% of the MID’s unadjusted company level minimum market capitalization threshold criteria. Further, constituents of the S&P Total Market Index Ex S&P Composite 1500 (which includes all eligible U.S. common equities except for those included in the S&P 500® Index, the MID and the S&P SmallCap 600® Index) that acquire a constituent of the S&P 500® Index, the MID or the S&P SmallCap 600® Index that do not fully meet the financial viability or IWF criteria may still be added to the MID at the discretion of the Index Committee if the Index Committee determines that the addition could minimize turnover and enhance the representativeness of the MID as a market benchmark. Certain types of organizational structures and securities are always excluded, including, but not limited to, business development companies (BDCs), limited partnerships, master limited partnerships, limited liability companies (LLCs) OTC bulletin board issues, closed-end funds, ETFs, ETNs, royalty trusts, tracking stocks, special purpose acquisition companies (SPACs), preferred stock and convertible preferred stock, unit trusts, equity warrants, convertible bonds, investment trusts, rights and American depository receipts (“ADRs”). Stocks are deleted from the MID when they are involved in mergers, acquisitions or significant restructurings such that they no longer meet the inclusion criteria, and when they substantially violate one or more of the addition criteria. Stocks that are delisted or moved to the pink sheets or the bulletin board are removed and those that experience a trading halt may be retained or removed in S&P’s discretion. S&P evaluates additions and deletions with a view to maintaining MID continuity.

For constituents included in the MID prior to July 31, 2017, all publicly listed multiple share class lines are included separately in the MID, subject to, in the case of any such share class line, that share class line satisfying the liquidity and float criteria discussed above and subject to certain exceptions. It is possible that one listed share class line of a company may be included in the MID while a second listed share class line of the same company is excluded. For companies that issue a second publicly traded share class to index share class holders, the newly issued share class line is considered for inclusion if the event is mandatory and the market capitalization of the distributed class is not considered to be de minimis.

As of July 31, 2017, companies with multiple share class lines are no longer eligible for inclusion in the MID. Only common shares are considered when determining whether a company has a multiple share class structure. Constituents of the MID prior to July 31, 2017 with multiple share class lines will be grandfathered in and continue to be included in the MID. If an MID constituent reorganizes into a multiple share class line structure, that company will be reviewed for continued inclusion in the MID at the discretion of the S&P Index Committee.

### **Calculation of the MID**

The MID is calculated using a base-weighted aggregative methodology. This discussion describes the “price return” calculation of the MID. The applicable pricing supplement will describe the calculation if the underlier for your securities is not the price return calculation. The value of the MID on any day for which an index value is published is determined by a fraction, the numerator of which is the aggregate of the market price of each stock in the MID times the number of shares of such stock included in the MID, and the denominator of which is the divisor, which is described more fully below. The “market value” of any index stock is the *product* of the market price per share of that stock *times* the number of the then-outstanding shares of such index stock that are then included in the MID.

The MID is also sometimes called a “base-weighted aggregative index” because of its use of a divisor. The “divisor” is a value calculated by S&P that is intended to maintain conformity in index values over time and is adjusted for all changes in the index stocks’ share capital after the “base date” as described below. The level of the MID reflects the total market value of all index stocks relative to the MID’s base date of June 28, 1991.

In addition, the MID is float-adjusted, meaning that the share counts used in calculating the MID reflect only those shares available to investors rather than all of a company’s outstanding shares. S&P seeks to exclude shares held by long-term, strategic shareholders concerned with the control of a company, a group that generally includes the following: officers and directors and related individuals whose holdings are publicly disclosed, private equity, venture capital, special equity firms, asset managers and insurance companies with board of director representation, publicly traded companies that hold shares in another company, holders of restricted shares (except for shares held as part of a lock-up agreement), company-sponsored employee share plans/trusts, defined contribution plans/savings, investment plans, foundations or family trusts associated with the company, government entities at all levels (except government retirement or pension funds), sovereign wealth funds and any individual person listed as a 5% or greater stakeholder in a company as reported in regulatory filings (collectively, “strategic holders”). To this end, S&P excludes all share-holdings (other than depository banks, pension funds (including government pension and retirement funds), mutual funds, exchange traded fund providers, investment funds, asset managers (including hedge funds with no board of director representation), investment funds of insurance companies and independent foundations not associated with the company) with a position greater than 5% of the outstanding shares of a company from the float-adjusted share count to be used in MID calculations.

The exclusion is accomplished by calculating an “IWF” for each stock that is part of the numerator of the float-adjusted index fraction described above:

$$\text{IWF} = (\text{available float shares})/(\text{total shares outstanding})$$

where available float shares is defined as total shares outstanding less shares held by strategic holders. In most cases, an IWF is reported to the nearest one percentage point. For companies with multiple share class lines, a separate IWF is calculated for each share class line.

### **Maintenance of the MID**

In order to keep the MID comparable over time S&P engages in an index maintenance process. The MID maintenance process involves changing the constituents as discussed above, and also involves maintaining quality assurance processes and procedures, adjusting the number of shares used to calculate the MID, monitoring and completing the adjustments for company additions and deletions, adjusting for stock splits and stock dividends and adjusting for other corporate actions. In addition to its daily governance of indices and maintenance of the index methodology, at least once within any 12 month period, the S&P Index Committee reviews the index methodology to ensure the MID continues to achieve the stated objective, and that the data and methodology remain effective. The S&P Index Committee may at times consult with investors, market participants, security issuers included or potentially included the MID, or investment and financial experts.

### Divisor Adjustments

The two types of adjustments primarily used by S&P are divisor adjustments and adjustments to the number of shares (including float adjustments) used to calculate the MID. Set forth below is a table of certain corporate events and their resulting effect on the divisor and the share count. If a corporate event requires an adjustment to the divisor, that event has the effect of altering the market value of the affected index stock and consequently of altering the aggregate market value of the index stocks following the event. In order that the level of the MID not be affected by the altered market value (which could be an increase or decrease) of the affected index stock, S&P generally derives a new divisor by



dividing the post-event market value of the index stocks by the pre-event index value, which has the effect of reducing the MID's post-event value to the pre-event level.

#### Changes to the Number of Shares of a Constituent

The index maintenance process also involves tracking the changes in the number of shares included for each of the index companies. Changes as a result of mandatory events, such as mergers or acquisition driven share/IWF changes, stock splits and mandatory distributions are not subject to a minimum threshold for implementation and are implemented when the transaction occurs. At S&P's discretion, however, de minimis merger and acquisition changes may be accumulated and implemented with the updates made with the quarterly share updates as described below. Material share/IWF changes resulting from certain non-mandatory corporate actions follow the accelerated implementation rule. Non-material share/IWF changes are implemented quarterly.

#### Accelerated Implementation Rule

1. Public offerings. Public offerings of new company-issued shares and/or existing shares offered by selling shareholders, including block sales and spot secondaries, will be eligible for accelerated implementation treatment if the size of the event meets the materiality threshold criteria:

- (a) at least \$150 million, and
- (b) at least 5% of the pre-event total shares.

In addition to the materiality threshold, public offerings must satisfy the following conditions:

- be underwritten.
- have a publicly available prospectus, offering document, or prospectus summary filed with the relevant authorities.
- have a publicly available confirmation from an official source that the offering has been completed.

For public offerings that involve a concurrent combination of new company shares and existing shares offered by selling shareholders, both events are implemented if either of the public offerings represent at least 5% of total shares and \$150 million. Any concurrent share repurchase by the affected company will also be included in the implementation.

2. Dutch Auctions, self-tender offer buybacks, and split-off exchange offers. These nonmandatory corporate action types will be eligible for accelerated implementation treatment regardless of size once their results are publicly announced and verified by S&P.

#### Exception to the Accelerated Implementation Rule

For non-mandatory corporate actions subject to the accelerated implementation rule with a size of at least \$1 billion, S&P will apply the share change, and any resulting IWF change, using the latest share and ownership information publicly available at the time of the announcement, even if the offering size is below the 5% threshold. This exception ensures that very large events are recognized in a timely manner using the latest available information.

All non-mandatory events not covered by the accelerated implementation rule (including but not limited to private placements, acquisition of private companies, and conversion of non-index share lines) will be implemented quarterly coinciding with the third Friday of the third month in each calendar quarter. In addition, events that were not implemented under the accelerated implementation rule but were found to have been eligible, (e.g., due to lack of publicly available information at the time of the event) are implemented as part of a quarterly rebalancing.

#### **Announcement Policy**

For accelerated implementation, S&P will provide two (2) business days' notice for all non-U.S. domiciled stocks, and one (1) business days' notice for all U.S. domiciled stocks.

#### IWF Updates

Accelerated implementation for events less than \$1 billion will include an adjustment to the company's IWF only to the extent that such an IWF change helps the new float share total mimic the shares available in the offering. To minimize unnecessary turnover, these IWF changes do not need to meet any minimum threshold requirement for implementation. Any IWF change resulting in an IWF of 0.96 or greater is rounded up to 1.00 at the next annual IWF 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.

Quarterly share change events resulting from the conversion of derivative securities, acquisitions of private companies, or acquisitions of non-index companies that do not trade on a major exchange are considered to be available to investors unless there is explicit information stating that the new owner is a strategic holder.

Other than the situations described above, please note that IWF changes are only made at the annual IWF review.

### Share Updates

When total shares outstanding increase by at least 5%, but the new share issuance is to a strategic or major shareholder, it implies that there is no change in float-adjusted shares. However, in such instances, S&P will apply the share change and resulting IWF change regardless of whether the float change is greater than or equal to 5%.

For companies with multiple share class lines, the 5% share change threshold is based on each individual multiple share class line rather than total company shares.

Changes to share counts that total less than 5% of total shares are accumulated and made quarterly on the third Friday of March, June, September, and December.

### Exceptions:

Any non-fully paid or non-fully settled offering such as forward sales agreements are not eligible for accelerated implementation. Share updates resulting from completion of subscription receipts terms or the settlement of forward sale agreements are updated at a future quarterly share rebalance.

### Rebalancing Guidelines – Share/IWF Freeze

A share/IWF freeze period is implemented during each quarterly rebalancing. 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 are normally released after the market close on the second Friday, one week prior to the rebalancing effective date. In September, preliminary share and float data is released on the first Friday of the month. However, the share freeze period for September follows the same schedule as the other three quarterly share freeze periods. For illustration purposes, if rebalancing pro-forma files are scheduled to be released on Friday, March 13, the share/IWF freeze period will begin after the close of trading on Tuesday, March 10 and will end after the close of trading the following Friday, March 20 (i.e., the third Friday of the rebalancing month).

During the share/IWF freeze period, shares and IWFs are not changed except for mandatory corporate action events (such as merger activity, stock splits, and rights offerings), and the accelerated implementation rule is suspended. 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.

### **Adjustments for Corporate Actions**

There is a large range of corporate actions that may affect companies included in the MID. Certain corporate actions require S&P to recalculate the share count or the float adjustment or to make an adjustment to the divisor to prevent the value of the MID from changing as a result of the corporate action. This helps ensure that the movement of the MID does not reflect the corporate actions of individual companies in the MID.

### Spin-Offs

As a general policy, a spin-off security is added to the MID on the ex-date at a price of zero (with no divisor adjustment) and will remain in the MID for at least one trading day. The spin-off security will remain in the MID if it meets all eligibility criteria. If the spin-off security is determined ineligible to remain in the MID, it will generally be removed after at least one day of regular way trading (with a divisor adjustment). The weight of the spin-off being deleted 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.

Companies that are spun off from a constituent of the MID do not need to meet the eligibility criteria for new constituents, but they should be considered U.S. domiciled for index purposes. At the discretion of the Index Committee, a spin-off company may be retained in the MID if the Index Committee determines it has a total market capitalization representative of the MID. If the spin-off company's estimated market capitalization is below the minimum unadjusted company market capitalization for the MID but there are other constituent companies in the MID that have a significantly lower total market capitalization than the spin-off company, the Index Committee may decide to retain the spin-off company in the MID.

Several additional types of corporate actions, and their related treatment, are listed in the table below.

<b>Corporate Action</b>	<b>Treatment</b>
Company addition/deletion	<p><u>Addition</u></p> <p>Companies are added at the float market capitalization weight. The net change to the index market capitalization causes a divisor adjustment.</p> <p><u>Deletion</u></p> <p>The weights of all stocks in the 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>
Change in shares outstanding	Increasing (decreasing) the shares outstanding increases (decreases) the market capitalization of the 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.
Change in IWF	Increasing (decreasing) the IWF increases (decreases) the market capitalization of the index. A net change to the index market capitalization causes a divisor adjustment.
Ordinary dividend	When a company pays an ordinary cash dividend, the index does not make any adjustments to the price or shares of the stock. As a result there are no divisor adjustments to the index.
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.

Any company that is removed from the S&P 500® Index, the MID or the S&P SmallCap 600® Index must wait a minimum of one year from its removal date before being reconsidered as a replacement candidate for the MID.

### ***Recalculation Policy***

S&P reserves the right to recalculate and republish the MID at its discretion in the event one of the following issues has occurred: (1) incorrect or revised closing price of one or more constituent securities; (2) missed or misapplied corporate action; (3) incorrect application of an index methodology; (4) late announcement of a corporate action; or (5) incorrect calculation or data entry error. The decision to recalculate the MID is made at the discretion of the index manager and/or index committee, as further discussed below. The potential market impact or disruption resulting from a recalculation is considered when making any such decision. In the event of an incorrect closing price, a missed or misapplied corporate action, a late announcement of a corporate event, or an incorrect calculation or data entry error that is discovered within two trading days of its occurrence, generally the MID is recalculated. In the event any such event is discovered beyond the two trading day period, the index committee shall decide whether the MID should be recalculated. In the event of an incorrect application of the methodology that results in the incorrect composition and/or weighting of index constituents, the index committee shall determine whether or not to recalculate the MID following specified guidelines. In the event that the MID is recalculated, it shall be done within a reasonable timeframe following the detection and review of the issue.

### ***Calculations and Pricing Disruptions***

Closing levels for the MID are calculated by S&P based on the closing price of the individual constituents of the MID as set by their primary exchange. Closing prices are received by S&P from one of its third party vendors and verified

by comparing them with prices from an alternative vendor. The vendors receive the closing price from the primary exchanges. Real-time intraday prices are calculated similarly without a second verification. Prices used for the calculation of real time index values are based on the "Consolidated Tape." The Consolidated Tape is an aggregation of trades for each constituent over all regional exchanges and trading venues and includes the primary exchange. If there is a failure or interruption on one or more exchanges, real-time calculations will continue as long as the "Consolidated Tape" is operational.

If an interruption is not resolved prior to the market close, official closing prices will be determined by following the hierarchy set out in NYSE Rule 123C. A notice is published on the S&P website at spglobal.com indicating any changes to the prices used in MID calculations. In extreme circumstances, S&P may decide to delay index adjustments or not publish the MID. Real-time indices are not restated.

### ***Unexpected Exchange Closures***

An unexpected market/exchange closure occurs when a market/exchange fully or partially fails to open or trading is temporarily halted. This can apply to a single exchange or to a market as a whole, when all of the primary exchanges are closed and/or not trading. Unexpected market/exchange closures are usually due to unforeseen circumstances, such as natural disasters, inclement weather, outages, or other events.

To a large degree, S&P is dependent on the exchanges to provide guidance in the event of an unexpected exchange closure. S&P's decision making is dependent on exchange guidance regarding pricing and mandatory corporate actions.

NYSE Rule 123C provides closing contingency procedures for determining an official closing price for listed securities if the exchange is unable to conduct a closing transaction in one or more securities due to a system or technical issue.

3:00 PM ET is the deadline for an exchange to determine its plan of action regarding an outage scenario. As such, S&P also uses 3:00 PM ET as the cutoff.

If all major exchanges fail to open or unexpectedly halt trading intraday due to unforeseen circumstances, S&P will take the following actions:

#### **Market Disruption Prior to Open of Trading:**

- (i) If all exchanges indicate that trading will not open for a given day, S&P will treat the day as an unscheduled market holiday. The decision will be communicated to clients as soon as possible through the normal channels. Indices containing multiple markets will be calculated as normal, provided that at least one market is open that day. Indices which only contain closed markets will not be calculated.
- (ii) If exchanges indicate that trading, although delayed, will open for a given day, S&P will begin index calculation when the exchanges open.

#### **Market Disruption Intraday:**

- (i) If exchanges indicate that trading will not resume for a given day, the MID level will be calculated using prices determined by the exchanges based on NYSE Rule 123C. Intraday MID values will continue to use the last traded composite price until the primary exchange publishes official closing prices.

### ***License Agreement with S&P***

HSBC has entered into a nonexclusive license agreement providing for the license to it, in exchange for a fee, of the right to use indices owned and published by S&P in connection with some products, including the Notes.

The MID is a product of S&P, and has been licensed for use by HSBC.

The Notes are not sponsored, endorsed, sold or promoted by S&P Dow Jones Indices. S&P makes no representation or warranty, express or implied, to the owners of the Notes or any member of the public regarding the advisability of investing in securities generally or in the Notes particularly or the ability of the MID to track general market performance. S&P's only relationship to HSBC is the licensing of the MID and certain trademarks, service marks and/or trade names of S&P. The MID is determined, composed and calculated by S&P without regard to HSBC or the Notes. S&P has no obligation to take the needs of HSBC or the owners of the Notes into consideration in determining, composing or calculating the MID. S&P is not responsible for and has not participated in the determination of the prices and amount of the Notes or the timing of the issuance or sale of the Notes or in the determination or calculation of the equation by which the Notes are to be converted into cash. S&P has no obligation or liability in connection with the administration, marketing or trading of the Notes. There is no assurance that investment products based on the MID will accurately track index performance or provide positive investment returns. S&P is not an investment advisor. Inclusion of a security

within the MID is not a recommendation by S&P to buy, sell or hold such security, nor is it considered to be investment advice.

S&P DOES NOT GUARANTEE THE ADEQUACY, ACCURACY, TIMELINESS AND/OR THE COMPLETENESS OF THE MID OR ANY DATA RELATED THERETO OR ANY COMMUNICATION, INCLUDING BUT NOT LIMITED TO, ORAL OR WRITTEN COMMUNICATION (INCLUDING ELECTRONIC COMMUNICATIONS) WITH RESPECT THERETO. S&P SHALL NOT BE SUBJECT TO ANY DAMAGES OR LIABILITY FOR ANY ERRORS, OMISSIONS OR DELAYS THEREIN. S&P MAKES NO EXPRESS OR IMPLIED WARRANTIES, AND EXPRESSLY DISCLAIMS ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE OR AS TO RESULTS TO BE OBTAINED BY HSBC, OWNERS OF THE NOTES, OR ANY OTHER PERSON OR ENTITY FROM THE USE OF THE MID OR WITH RESPECT TO ANY DATA RELATED THERETO. WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT WHATSOEVER SHALL S&P BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS, TRADING LOSSES, LOST TIME OR GOODWILL, EVEN IF THEY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER IN CONTRACT, TORT, STRICT LIABILITY, OR OTHERWISE. THERE ARE NO THIRD PARTY BENEFICIARIES OF ANY AGREEMENTS OR ARRANGEMENTS BETWEEN S&P AND HSBC, OTHER THAN THE LICENSORS OF S&P.

## THE S&P/ASX 200 INDEX

**The disclosure relating to the S&P/ASX 200 Index (the “AS51”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the AS51.**

### **S&P Publishes the AS51**

The AS51 is intended to provide exposure to the largest 200 eligible securities that are listed on the Australian Securities Exchange (“ASX”) by float-adjusted market capitalization. The AS51 was first launched in 1979 by the ASX and was acquired and re-launched by its current index sponsor on April 3, 2000. The AS51 is sponsored, calculated, published and disseminated by S&P. The AS51 is reported by Bloomberg Professional® service under the symbol “AS51.”

### **Index Composition**

The AS51 weights companies according to the Global Industry Classification Standard, which creates uniform ground rules for replicable, custom-tailored, industry-focused portfolios. It also enables meaningful comparisons of sectors and industries across regions.

### **Standards for Listing and Maintenance**

The AS51 constituents are drawn from the universe of ordinary and preferred equity stocks listed on ASX. The criteria for index additions include, but are not limited to:

- *Listing.* Only securities listed on the ASX are considered for inclusion in the AS51;
- *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 stock price history (last six months), 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; and
- *Liquidity.* Only securities that are regularly traded are eligible for inclusion in the AS51. A stock’s liquidity is measured relative to its peers. 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 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 companies in the All Ordinaries index, an index that includes nearly all ordinary shares listed on the ASX.

Stocks must have a minimum Relative Liquidity of 50% to be included in the AS51.

- *Eligible Securities.* Common and equity preferred stocks (which are not of a fixed income nature) are eligible for inclusion in the AS51. Hybrid stocks, such as convertible stock, bonds, warrants and preferred stock that provide a guaranteed fixed return, are not eligible. Listed investment companies that invest in a portfolio of securities are not eligible. Companies that are currently under consideration for merger or acquisition are not eligible.

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.

*Intra-Quarter Additions/Deletions.* Between rebalancing dates, an addition to the AS51 is generally made only if a vacancy is created by an index deletion. Index additions are made according to market size and liquidity. An initial public offering (IPO) is added to the AS51 only when an appropriate vacancy occurs 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 index inclusion. An index constituent that appears to violate criteria for addition to the AS51 will not be deleted unless ongoing conditions warrant an index change. 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 AS51 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 AS51 at the cash offer price for cash-only offers. Otherwise, the best available price in the market is used.

**Rebalancing.** Rebalancing of the AS51 series occurs on a regular basis. Both market capitalization and liquidity are assessed using the previous six months' worth of data to determine index eligibility. Shares and IWFs updates are also applied regularly. The reference date used for the six months' worth of trading data is the last Friday of the month prior to the rebalancing, except for the September rebalancing where the reference date for data used is the second to last Friday of August.

The Index Committee may change the date of a given rebalancing for reasons including market holidays occurring on the scheduled rebalancing date. Any such change will be announced with proper advance notice where possible.

**Buffers.** In order to limit the level of index turnover, eligible securities will only be considered for index inclusion once another 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 AS51. The following 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.

The Rank Buffer for addition to the AS51 is 179<sup>th</sup> or higher, and for deletion, 221<sup>st</sup> 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 AS51. However, the Index Committee has complete discretion to by-pass these rules when circumstances warrant.

**Frequency.** The AS51 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.

**Share Updates.** The share count for all index constituents are updated quarterly and are rounded to the nearest thousand ('000). An update to the number of issued shares will be considered if the change is at least 5% of the float adjusted shares as at the quarterly rebalancing date. Intra quarter share changes are implemented at the effective date or as soon as reliable information is available; however, they will only take place in the following circumstances:

- Changes in a company's shares outstanding of 5% or more due to market-wide shares issuance or major off-market buy-backs;
- Rights issues, bonus issues and other major corporate actions; and
- Share issues resulting from index companies merging.

Share changes due to mergers or acquisitions are implemented when the transaction occurs, even if both of the companies are not in the same index and regardless of the size of the change.

Notification of intra quarter changes to the number of issued shares generally takes place three Business Days prior to the implementation date.

### **Index Calculation**

The AS51 is calculated using a base-weighted aggregate methodology so that the level of the AS51 reflects the total market value of all the component stocks relative to a particular base period. The total market value of a company is determined by multiplying the price of its stock by the number of shares available after float (IWF) adjustment. An indexed number is used to represent the result of this calculation in order to make the value easier to work with and track over time.

A stock's weight in the AS51 is determined by the float-adjusted market capitalization of the stock. The number of shares outstanding is reduced to exclude closely held shares from the index calculation because such shares are not available to investors. The AS51 calculates an Investable Weight Factor (IWF), which is the percentage of total shares outstanding that are included in the index calculation. All constituents in the AS51 are assigned an IWF. A company must have a minimum IWF of 0.3 to be eligible for index inclusion, however an IWF at or above that level is not necessary for ongoing index membership.

On any given day, the index value is the quotient of the total available market capitalization of its constituents and its divisor. Continuity in the index value is maintained by adjusting the divisor for all changes in the constituents' share capital after the base date. This includes additions and deletions to the AS51, rights issues, share buybacks and issuances, spin-offs, and adjustments in availability. The divisor's time series is, in effect, a chronological summary of all changes affecting the base capital of the index. The divisor is adjusted such that the index value at an instant just prior to a change in base capital equals the index value at an instant immediately following that change. The divisor will be adjusted to account for new addition to or deletion from the AS51 and certain corporate actions, such as special cash dividend, certain stock dividend, rights offering, new share issuance, reduction of capital and merger.

### ***Index Governance***

The Index Committee monitors overall policy guidelines and methodologies, as well as additions and deletions from the AS51. S&P Dow Jones chairs the Index Committee, which is composed of voting members representing both S&P Dow Jones and the ASX.

Decisions made by the Index Committee include all matters relating to index construction and maintenance. The Index Committee meets regularly to review market developments and convenes as needed to address major corporate actions. It is the sole responsibility of the Index Committee to decide on all matters relating to methodology, maintenance, constituent selection and index procedures. The Index Committee makes decisions based on all publicly available information and discussions are kept confidential to avoid any unnecessary impact on market trading.

### ***License Agreement***

The AS51 is a product of S&P, and has been licensed for use by us. Standard & Poor's® and S&P® are registered trademarks of Standard & Poor's Financial Services LLC; and these trademarks have been licensed for use by S&P and sublicensed for certain purposes by us. The Notes are not sponsored, endorsed, sold or promoted by S&P Dow Jones Indices. S&P Dow Jones Indices makes no representation or warranty, express or implied, to the holders of the Notes or any member of the public regarding the advisability of investing in securities generally or in the Notes particularly or the ability of the AS51 to track general market performance. S&P Dow Jones Indices' only relationship to us with respect to the AS51 is the licensing of the AS51 and certain trademarks, service marks and/or trade names of S&P Dow Jones Indices or its licensors. The AS51 is determined, composed and calculated by S&P Dow Jones Indices without regard to us or the Notes. S&P Dow Jones Indices have no obligation to take our needs or the needs of holders of the Notes into consideration in determining, composing or calculating the AS51. S&P Dow Jones Indices are not responsible for and have not participated in the determination of the prices, and amount of the Notes or the timing of the issuance or sale of the Notes or in the determination or calculation of the equation by which the Notes are to be converted into cash, surrendered or redeemed, as the case may be. S&P Dow Jones Indices have no obligation or liability in connection with the administration, marketing or trading of the Notes. There is no assurance that investment products based on the AS51 will accurately track AS51 performance or provide positive investment returns. S&P is not an investment advisor. Inclusion of a security within an AS51 is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, nor is it considered to be investment advice. Notwithstanding the foregoing, CME Group Inc. and its affiliates may independently issue and/or sponsor financial products unrelated to the Notes currently being issued by us, but which may be similar to and competitive with the Notes. In addition, CME Group Inc. and its affiliates may trade financial products which are linked to the performance of the AS51.

S&P DOES NOT GUARANTEE THE ADEQUACY, ACCURACY, TIMELINESS AND/OR THE COMPLETENESS OF THE AS51 OR ANY DATA RELATED THERETO OR ANY COMMUNICATION, INCLUDING BUT NOT LIMITED TO, ORAL OR WRITTEN COMMUNICATION (INCLUDING ELECTRONIC COMMUNICATIONS) WITH RESPECT THERETO. S&P DOW JONES INDICES SHALL NOT BE SUBJECT TO ANY DAMAGES OR LIABILITY FOR ANY ERRORS, OMISSIONS, OR DELAYS THEREIN. S&P MAKES NO EXPRESS OR IMPLIED WARRANTIES, AND EXPRESSLY DISCLAIMS ALL WARRANTIES, OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE OR AS TO RESULTS TO BE OBTAINED BY US, HOLDERS OF THE NOTES, OR ANY OTHER PERSON OR ENTITY FROM THE USE OF THE AS51 OR WITH RESPECT TO ANY DATA RELATED THERETO. WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT WHATSOEVER SHALL S&P DOW JONES INDICES BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS, TRADING LOSSES, LOST TIME OR GOODWILL, EVEN IF THEY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER IN CONTRACT, TORT, STRICT LIABILITY, OR OTHERWISE. THERE ARE NO THIRD PARTY BENEFICIARIES OF ANY AGREEMENTS OR ARRANGEMENTS BETWEEN S&P DOW JONES INDICES AND US, OTHER THAN THE LICENSORS OF S&P DOW JONES INDICES.



## THE S&P 500<sup>®</sup> ESG INDEX

**The disclosure relating to the S&P 500<sup>®</sup> ESG Index (the “SPXESUP”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the SPXESUP.**

### **S&P Publishes the SPXESUP**

The SPXESUP (reported on the Bloomberg Professional<sup>®</sup> service under the symbol “SPXESUP”) is designed to measure the performance of securities meeting sustainability criteria, while maintaining similar overall industry group weights as the S&P 500<sup>®</sup> Index. Publication of the SPXESUP began on January 28, 2019, with a base value of 100 on April 30, 2010.

The SPXESUP is constructed from an eligible universe of stocks consisting of the stocks included in the S&P 500<sup>®</sup> Index. Eligible constituents are then excluded based on the four screens described below:

- **Tobacco.** Based on data provided by Sustainalytics (a company that rates the sustainability of companies based on their environmental, social and corporate governance performance), constituents are excluded if they either directly or via an ownership interest of 25% or more of another company: (i) produce tobacco, (ii) have tobacco sales accounting for greater than 10% of their revenue, or (iii) have tobacco-related products & services accounting for greater than 10% of their revenue.
- **Controversial Weapons.** Based on data provided by Sustainalytics, constituents are excluded if they either directly or via an ownership interest of 25% or more of another company are involved in: (i) cluster weapons, (ii) landmines (anti-personnel mines), (iii) biological or chemical weapons, (iv) depleted uranium weapons, (v) white phosphorus weapons, or (vi) nuclear weapons.
- **UNGC Score.** The Arabesque S-Ray<sup>®</sup> Service provided by Arabesque (Deutschland) GMBH (an asset manager that, along with its affiliates based in other countries, focuses on environmental, social and governance data and quantitative models) rates companies based on the normative principles of the United Nations Global Compact (such rating, a “UNGC Score” and all companies with an assigned UNGC Score, collectively, the “UNGC Score Universe”). Any company with a UNGC Score at or below the bottom 5% of the UNGC Score Universe is excluded.
- **ESG Score.** ESG Scores are determined as described below. Any company with an ESG Score that falls within the worst 25% of ESG Scores for its GICS industry group is excluded. GICS entails four levels of classification: (i) sector; (ii) industry group; (iii) industries; and (iv) sub-industries. Under GICS, each company is assigned 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 GICS.

Companies without Sustainalytics coverage, an assigned UNGC Score or an assigned ESG Score are ineligible for inclusion in the SPXESUP until they receive Sustainalytics coverage, a UNGC Score and an ESG Score. In addition to the exclusions described above, if SAM (the trade name for a business unit of RobecoSAM AG that specializes in environmental, social and governance data, rating services and benchmarking) releases a Media and Stakeholder Analysis (an “MSA”), the applicable constituent will be reviewed and may be removed from the SPXESUP. Any constituent removed based on an MSA will not be eligible for reentry in the SPXESUP for one full calendar year. MSAs are released by SAM to highlight issues including economic crime and corruption, fraud, illegal commercial practices, human rights issues, labor disputes, workplace safety, catastrophic accidents and environmental disasters.

The SPXESUP is then constructed from the remaining eligible stocks through the following process:

- First, for each GICS industry group, companies are selected in decreasing order of ESG Score until 65% of the float-adjusted market capitalization for such GICS industry group is reached.
- Second, constituents ranked between 65% and 85% for each GICS industry group are selected to get as close as possible to the target of 75% of the float-adjusted market capitalization.
- Finally, if the combined float-adjusted market capitalization is not above the 75% target, additional eligible companies may be added in decreasing order of ESG Score to get as close as possible to the 75% target. This will continue until the addition of the next eligible component would result in the total float-adjusted market capitalization of the GICS industry group to move further away from the 75% target.

**ESG Scores.** S&P and SAM together provide environmental, social and governance scores (“ESG Scores”) that seek to measure companies’ financially material ESG factors based on SAM’s Corporate Sustainability Assessment (“CSA”). For purposes of assessing ESG Scores, companies are assigned to industry groups defined by SAM. These industry

group assignments are based on GICS industry group classifications, but some non-standards aggregations are made by SAM.

SAM seeks to perform a CSA on each company included in the S&P Global LargeMidCap Index and the S&P Global 1200 Index (which includes all companies included in the S&P 500® Index as the S&P 500® Index is one of the constituent indices of the S&P Global 1200 Index) as of a designated date in September.

CSA requests, including industry-specific questionnaires, are sent to companies each year in March. ESG scores are calculated based on the responses to the CSA and other available data. If a company does not respond to the CSA, SAM assigns a score based on available data.

A company's ESG Score is equal to the weighted sum of its ESG indicators. ESG indicators are assigned to different sustainability topics and questions, and the assigned weights of ESG indicators for each industry group are included in the CSAs that are distributed to companies in that industry group. The assigned weight for each ESG indicator may vary between industry groups and may be zero if SAM determines that a particular ESG indicator is not relevant for an industry group. ESG indicator weightings are reviewed each year.

The ESG Score methodology attempts to account for information bias inherent in self-provided answers vs data being collected by a SAM analyst, as well as the differences in transparency found in corporate sustainability reporting. A framework is used to deal with missing data for questions where a low level of publicly available information is available.

Two sorting screens are applied to the questions in each CSA. First, all questions are assigned to one of the three dimensions: environmental, social and governance. The questions within each dimension are then designated as either "mandatory" or "non-mandatory" with a minimum number of mandatory questions required in each dimension. Generally, SAM CSA questions are deemed mandatory if the information is found by SAM analysts for more than 50% of companies. SAM industry experts also have discretion to categorize specific questions as mandatory based on their fundamental importance, regardless of their answer rate, or to deem questions as non-mandatory even if they have answer rates greater than 50%.

During the 2017 and 2018 yearly SAM CSA methodology reviews, changes were made, with an added emphasis on questions requiring publicly available information from all companies, including participating companies. The changes were prompted by increasing investor expectations with regard to corporate transparency and rising expectations on what should be included in companies' public disclosures. As part of this review, the "public" questions were added to the list of mandatory questions used in the SAM CSA methodology. As a result, the mandatory questions from 2018 onwards are based on both the 50% rule previously described, as well as all "public" questions if not already selected as part of the 50% rule. Another result of this change is that all three dimensions (environmental, social, and governance) within the SAM CSA will contain a minimum set of mandatory questions, and no dimension can be marked as "not applicable," preserving the overall weights of each dimension in each industry within the S&P Global ESG Score.

If no information was found on a mandatory question, a score of zero is assigned to that question, and the total score for that company is calculated inclusive of the zero. Thus companies are penalized for a lack of reporting.

If no information is found for a non-mandatory question, the question will be disregarded and not included in the company's ESG Score calculation. The score that is assigned to each question based on a company's response or other available information is an ESG indicator. When no information is provided for a non-mandatory question and the question is disregarded, the weight allocated to that ESG indicator is redistributed amongst the other ESG indicators.

The ESG Score also attempts to mitigate some of the inherent data biases by normalizing the ESG indicators within each industry group based on a standardized z-score. It is the normalized ESG indicators that are used to calculate the ESG Score for each company.

The ESG Score methodology is under the supervision of the S&P DJI ESG Score Committee (the "ESG Committee"), which included committee members from S&P and SAM. The ESG Committee meets regularly. At each meeting, the ESG Committee reviews the methodology, and the ESG Committee may revise the methodology process if the ESG Committee determines a change is needed to better implement the intent of the scoring process. The ESG Committee may also make exceptions when applying the methodology.

### ***Index Maintenance***

The SPXESUP is rebalanced once a year effective after the market close on the last business day of April. The reference date for the data used in the review is the last trading day of March. In addition to the annual rebalancing, there are quarterly updates to the underlying shares and their respective weights within the SPXESUP which are effective after the close on the third Friday in March, June, September and December. Generally, no companies are added between rebalancings, but a company can be deleted between rebalancings due to corporate events such as mergers, takeovers or delistings. In addition, at the discretion of the Committee (as defined below), a deletion may occur if an MSA is raised.

The S&P Dow Jones Indices' Europe (EMEA) Index Committee (the "Committee") maintains the SPXESUP and other S&P ESG Indices, meeting regularly. At each meeting, the Committee reviews pending corporate actions that may affect SPXESUP constituents, statistics comparing the composition of the indices to the market, companies that are being considered as candidates for addition to the SPXESUP and any significant market events. In addition, the Committee may revise the index policy covering rules for selecting companies, treatment of dividends, share counts or other matters. S&P considers information about changes to its indices and related matters to be potentially market-moving and material. Therefore, all Committee discussions are confidential.

The table below describes some of the index maintenance adjustments applicable to the SPXESUP and indicates whether or not an index divisor adjustment is required.

Type of Corporate Action	Comments	Divisor Adjustment
Spin-off	In general, a spin-off security is added to the index at a zero price at the market close of the day before the ex-date (with no divisor adjustment). The spin-off security will remain in the index if it meets all necessary criteria. If a spin-off security is determined to be ineligible to remain in the index, it will be removed after at least one day of regular way trading (with a divisor adjustment).	No
Rights offering	The price is adjusted to the price of the parent company minus (the price of the rights offering/rights ratio). Index shares change so that the company's weight remains the same as its weight before the rights offering.	No
Stock dividend, stock split, reverse stock split	Index shares are multiplied by and price is divided by the split factor.	No
Share Issuance, Share Repurchase, Equity Offering or Warrant Conversion	None.	No
Special dividend	Price of the stock making the special dividend payment is reduced by the per-share special dividend amount after the close of trading on the day before the dividend ex-date.	Yes

### **License Agreement**

We or one of our affiliates has entered into a nonexclusive license agreement providing for the license to it, in exchange for a fee, of the right to use indices owned and published by S&P in connection with some products, including the Notes.

The SPXESUP is a product of S&P, and has been licensed for use by the Issuer.

The Notes are not sponsored, endorsed, sold or promoted by S&P Dow Jones Indices. S&P Dow Jones Indices makes no representation or warranty, express or implied, to the depositors of the Notes or any member of the public regarding the advisability of investing in certificates of deposit generally or in the Notes particularly or the ability of the SPXESUP to track general market performance. S&P Dow Jones Indices' only relationship to the Issuer with respect to the SPXESUP is the licensing of the SPXESUP and certain trademarks, service marks and/or trade names of S&P Dow Jones Indices. The SPXESUP is determined, composed and calculated by S&P Dow Jones Indices without regard to the Issuer or the Notes. S&P Dow Jones Indices has no obligation to take the needs of the Issuer or the holders of the Notes into consideration in determining, composing or calculating the SPXESUP. S&P Dow Jones Indices is not responsible for and has not participated in the determination of the prices and amount of the Notes or the timing of the issuance or sale of the Notes or in the determination or calculation of the equation by which the Notes are to be converted into cash. S&P Dow Jones Indices has no obligation or liability in connection with the administration, marketing or trading of the Notes. There is no assurance that investment products based on the SPXESUP will accurately track index performance or provide positive investment returns. S&P is not an investment advisor. Inclusion

of a security within the SPXESUP is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, nor is it considered to be investment advice. Notwithstanding the foregoing, CME Group Inc. and its affiliates may independently issue and/or sponsor financial products unrelated to the Notes currently being issued by the Issuer, but which may be similar to and competitive with the Notes. In addition, CME Group Inc. and its affiliates may trade financial products which are linked to the performance of the SPXESUP. It is possible that this trading activity will affect the value of the SPXESUP and the Notes.

S&P DOES NOT GUARANTEE THE ADEQUACY, ACCURACY, TIMELINESS AND/OR THE COMPLETENESS OF THE SPXESUP OR ANY DATA RELATED THERETO OR ANY COMMUNICATION, INCLUDING BUT NOT LIMITED TO, ORAL OR WRITTEN COMMUNICATION (INCLUDING ELECTRONIC COMMUNICATIONS) WITH RESPECT THERETO. S&P DOW JONES INDICES SHALL NOT BE SUBJECT TO ANY DAMAGES OR LIABILITY FOR ANY ERRORS, OMISSIONS, OR DELAYS THEREIN. S&P MAKES NO EXPRESS OR IMPLIED WARRANTIES, AND EXPRESSLY DISCLAIMS ALL WARRANTIES, OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE OR AS TO RESULTS TO BE OBTAINED BY THE ISSUER, HOLDERS OF THE NOTES, OR ANY OTHER PERSON OR ENTITY FROM THE USE OF THE SPXESUP OR WITH RESPECT TO ANY DATA RELATED THERETO. WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT WHATSOEVER SHALL S&P DOW JONES INDICES BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, TRADING LOSSES, LOST TIME OR GOODWILL, EVEN IF THEY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER IN CONTRACT, TORT, STRICT LIABILITY, OR OTHERWISE. THERE ARE NO THIRD PARTY BENEFICIARIES OF ANY AGREEMENTS OR ARRANGEMENTS BETWEEN S&P DOW JONES INDICES AND THE ISSUER, OTHER THAN THE LICENSORS OF S&P DOW JONES INDICES.

## THE TOPIX® INDEX

**The disclosure relating to the TOPIX® Index (the “TPX”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the TPX.**

### **The Tokyo Stock Exchange, Inc. Publishes the TPX**

The TPX is a capitalization-weighted index of all companies listed on the First Section of the Tokyo Stock Exchange, Inc. (the “TSE”). The TPX is supplemented by the subindices of the 33 industry sectors. These sectors include: Fishery; Agriculture & Forestry; Mining; Construction; Foods; Textiles & Apparels; Pulp & Paper; Chemicals; Pharmaceutical; Oil & Coal Products; Rubber Products; Glass & Ceramics Products; Iron & Steel; Nonferrous Metals; Metal Products; Machinery; Electric Appliances; Transportation Equipment; Precision Instruments; Other Products; Electric Power & Gas; Land Transportation; Marine Transportation; Air Transportation; Warehousing & Harbor Transportation Services; Information & Communication; Wholesale Trade; Retail Trade; Banks; Securities & Commodity Futures; Insurance; Other Financing Business; Real Estate; and Services. The index calculation excludes temporary issues and preferred stocks. The TPX is designed to measure the overall trend in the stock market in Japan, and is used as a benchmark for investment in Japanese stocks. Publication of the TPX began on July 1, 1969, with a base point of 100 as of the base date of January 4, 1968. The TPX is reported by Bloomberg Professional® service under the ticker symbol “TPX.”

### **Calculation of the TPX**

The TPX is computed and published every second.

The component stocks of the TPX consist of all domestic common stocks listed on the First Section of the TSE. Additions to the component stocks can occur in multiple ways: 1) as a result of an assignment from the TSE Second Section to the First Section, or by alteration of listing markets from the Mothers Market of the TSE, with such changes taking effect one business day before the last business day of the month after such assignment or alteration, as applicable; (2) through the initial listing of a company (directly or via another stock exchange), with such changes taking effect one business day before the last business day of the month after such initial listing; or (3) through the initial listing of a new company created through, among other things, a stock swap, stock transfer or merger, with such changes taking effect one business day before the listing date. Deletions of constituents are conducted due to (1) de-listing because of a stock-swap or the like when the surviving company re-lists with the TSE, with such changes taking effect one business day before the initial listing date of the new company (normally two business days after the de-listing date); (2) de-listing of a company for reasons other than a stock-swap or the like, with such changes taking effect one business day before the de-listing date; (3) designation of securities to be de-listed, with such changes taking effect three business days after such designation; or (4) reassignment of the listing to the Second Section of the TSE from the First Section of the TSE, with such changes taking effect one business day before such reassignment.

The TPX is a free float-adjusted market capitalization-weighted index. The TPX is not expressed in Japanese Yen, but is presented in terms of points (as a decimal figure) rounded off to the nearest one-hundredth. The TPX is calculated by multiplying the base value of 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 number of free-float adjusted common shares listed on the First Section of the TSE 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 TPX can be represented by the following formula:

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

In order to maintain continuity, the Base Market Value is adjusted from time to time to ensure that it reflects only price movements resulting from auction market activity, and to eliminate the effects of other factors and prevent any instantaneous change or discontinuity in the level of the TPX. Such factors include, without limitation: new listings, delistings and transfer of listed securities from the First Section to the Second Section of the TSE.

The formula for the adjustment is as follows:

$$\frac{\text{Adjusted Market Value on Adjustment Date}}{\text{Base Market Value before adjustment}} = \frac{(\text{Adjusted Market Value on Adjustment Date} \pm \text{Adjustment Amount})}{\text{Base Market Value after adjustment}}$$

Where Adjustment Amount is equal to the changes in the number of shares included in the calculation of the TPX multiplied by the price of those shares used for the purposes of the adjustment.

Therefore,

$$\text{New Base Market Value} = \frac{\text{Old Base Market Value} \times (\text{Adjusted Market Value on Adjustment Date} \pm \text{Adjustment Amount})}{\text{Adjusted Market Value on Adjustment Date}}$$

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 TPX, the Base Market Value is adjusted in such a way that the new value of the TPX will equal the level of the TPX immediately prior to such change.

No adjustment is made to the Base Market Value, however, in the case of events such as stock splits or decreases in capital without compensation, which theoretically do not affect market value.

***License Agreement with TSE:***

HSBC or one of its affiliates has entered into a non-exclusive license agreement with the TSE whereby it, in exchange for a fee, is permitted to use the TPX in connection with certain securities, including the Notes. HSBC is not affiliated with the TSE; the only relationship between the TSE and HSBC is any licensing of the use of the TPX and trademarks relating to it.

The license agreement between the TSE and HSBC or one of its affiliates provides that the following disclaimer must be set forth herein:

- (i) The TOPIX Index Value and the TOPIX Index Marks are subject to the rights owned by the TSE and the TSE owns all rights relating to the TPX such as calculation, publication and use of the TOPIX Index Value and relating to the TOPIX Index Marks.
- (ii) The TSE shall reserve the rights to change the methods of calculation or publication, to cease the calculation or publication of the TOPIX Index Value or to change the TOPIX Index Marks or cease the use thereof.
- (iii) The TSE makes no warranty or representation whatsoever, either as to the results stemmed from the use of the TOPIX Index Value and the TOPIX Index Marks or as to the figure at which the TOPIX Index Value stands on any particular day.
- (iv) The TSE gives no assurance regarding accuracy or completeness of the TOPIX Index Value and data contained therein. Further, the TSE shall not be liable for the miscalculation, incorrect publication, delayed or interrupted publication of the TOPIX Index Value.
- (v) No Notes are in any way sponsored, endorsed or promoted by the TSE.
- (vi) The TSE shall not bear any obligation to give an explanation of the Notes or an advice on investments to any purchaser of the Notes or to the public.
- (vii) The TSE neither selects specific stocks or groups thereof nor takes into account any needs of the issuing company or any purchaser of the Notes for calculation of the TOPIX Index Value.
- (viii) Including but not limited to the foregoing, the TSE shall not be responsible for any damage resulting from the issue and sale of the Notes.

“TOPIX®” and “TOPIX Index®” are trademarks of the TSE and prior to the settlement date we expect them to be licensed for use by HSBC or one of its affiliates. The Notes have not been and will not be passed on by the TSE as to their legality or suitability. The Notes will not be issued, endorsed, sold or promoted by the TSE. THE TSE MAKES NO WARRANTIES AND BEARS NO LIABILITY WITH RESPECT TO THE NOTES.

## **THE SWISS MARKET INDEX**

***The disclosure relating to the Swiss Market Index (the “SMI”) contained in this document relates only to the offering of Notes linked to a Reference Asset that is or includes the SMI.***

### ***SIX Group Ltd. Publishes the SMI***

The Swiss Market Index is a price return float-adjusted market capitalization-weighted index of the 20 largest stocks traded on the SIX Swiss Exchange. The SMI was first launched with a base level of 1,500 as of June 30, 1988. The SMI is sponsored, calculated, published and disseminated by SIX Group Ltd., certain of its subsidiaries, and the Management Committee of SIX Swiss Exchange. The SMI is reported by Bloomberg Professional® service under the symbol “SMI.”

### ***Composition and Maintenance***

The SMI Index contains approximately 85% of the entire free float market capitalization of the Swiss equity market and is made up of 20 of the largest and most liquid stocks from the Swiss Performance Index (“SPI”). Its composition is examined twice a year by the Management Committee and the Index Commission, and any changes to the index composition of the SMI Index are made once a year.

The position of each security is determined by a combination of average free-float market capitalization (compared to the capitalization of the entire SPI) and cumulated on order book turnover (compared to the total turnover of the SPI). The 18 securities with the highest rank are selected for inclusion in the SMI Index. In order to reduce turnover, a buffer is applied for securities ranked 19 to 22. Out of the securities ranked 19 to 22 current components are selected with priority over the other securities. New components out of the buffer are selected until 20 components have been reached.

### ***Capped Weightings and Intra-Quarter Breaches***

The weight of any underlier stock that exceeds a weight of 18% within the SMI Index is reduced to that value at each ordinary quarterly adjustment date by applying a capping factor to the calculation of such underlier stock’s free float market capitalization. An underlier stock’s number of shares and free float figure are used to determine its capping factor. The excess weight (the difference of the original weight minus the capped weight) is distributed proportionally across the other underlier stocks. The underlier stocks are also capped to 18% as soon as two underlier stocks exceed a weight of 20% (an “intra-quarter breach”). If an intra-quarter breach is observed after the close of the markets, the new capping factors are implemented after the close of the following trading day. The weights of the largest components are therefore set again to 18% effective after the close of the following trading day. If an issuer is represented in the SMI Index by more than one security, the free float market capitalization of those securities is cumulated for the calculation of the capping factors.

### ***Index Calculation***

The SMI Index is a non-dividend-adjusted price index. The SMI Index 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 capitalization of all securities included in the index by a divisor.

The divisor is a technical number used to calculate the index. If the market capitalization changes due to a corporate event, the divisor changes while the index value remains the same. The new divisor is calculated on the evening of the day before the corporate event takes effect. Regular cash dividend payments do not result in adjustments to the divisor. Repayments of capital through the reduction of a share’s par value, which can take the place of a regular cash dividend or constitute a component of the regular distribution, are treated in the same way as a normal dividend payment and no adjustments are made to the divisor. Distributions such as special dividends and anniversary bonuses that, contrary to a company’s usual dividend policy, are paid out or declared extraordinary dividends, are not deemed dividends in the above sense. These distributions are considered corporate events and also result in adjustments to the divisor.

### ***Sector designations***

Sector designations are determined by the index sponsor using criteria it has selected or developed. Index sponsors may use very different standards for determining sector designations. In addition, many companies operate in a number of sectors, but are listed in only one sector and the basis on which that sector is selected may also differ. As a result, sector comparisons between indices with different index sponsors may reflect differences in methodology as well as actual differences in the sector composition of the indices. FTSE Russell, which manages the ICB has implemented structural updates to the ICB, effective July 1, 2019. FTSE Russell added an 11th industry, Real Estate, to the ICB, expanded and reorganized the previously existing Telecommunications industry, reorganized the Consumer Goods and Consumer Services industries into Consumer Staples and Consumer Discretionary industries, respectively, and renamed the Oil & Gas industry to the Energy industry. The Real Estate industry contains the Real Estate Investment & Services sector and the Real Estate Investment Trusts (REITs) sector. However, because Mortgage REITs derive

revenue from real estate financing rather than from real estate itself, they remain in the Financials industry. The Telecommunications industry was expanded via the addition of companies from the previously existing Technology industry and the previously existing Media sector and reorganized by creating a new Telecommunications Equipment sector and new Telecommunications Services (which includes Fixed Line Telecommunications and Mobile Telecommunications companies) and Cable Television Services subsectors, which are grouped at the sector level as the Telecommunications Service Providers sector. The new Consumer Staples and Consumer Discretionary industries are a blend of the previously existing Consumer Goods and Consumer Services industries, with a majority of the weight in the existing Consumer Goods industry having shifted to the new Consumer Staples industry and a majority of the weight in the existing Consumer Services industry having shifted to the new Consumer Discretionary industry.

#### ***License Agreement***

The Notes are not in any way sponsored, endorsed, sold or promoted by the SIX Exchange and the SIX Exchange makes no warranty or representation whatsoever, express or implied, either as to the results to be obtained from the use of the SMI and/or the figure at which the SMI stands at any particular time on any particular day or otherwise. However, the SIX Exchange shall not be liable (whether in negligence or otherwise) to any person for any error in the SMI and the SIX Exchange shall not be under any obligation to advise any person of any error therein.

SIX Group, SIX Exchange, SPI, Swiss Performance Index (SPI), SPI EXTRA, SPI ex SLI, SMI, Swiss Market Index (SMI), SMI MID (SMIM), SMI Expanded, SXI, SXI Real Estate, SXI Swiss Real Estate, SXI Life Sciences, SXI Bio+Medtech, SLI, SLI Swiss Leader Index, SBI, SBI Swiss Bond Index, SAR, SAR SWISS AVERAGE RATE, SARON, SCR, SCR SWISS CURRENT RATE, SCRON, SAION, SCION, VSMI and SWX Immobilienfonds Index are trademarks that have been registered in Switzerland and/or abroad by SIX Group Ltd respectively SIX Exchange. Their use is subject to a license.



## **ADDITIONAL TERMS OF THE NOTES**

### **Official Closing Level**

The Official Closing Level of an Index will be its closing level on any Scheduled Trading Day, as determined by the calculation agent based upon the level displayed on the applicable Bloomberg Professional® service page, as specified in the applicable free writing prospectus or pricing supplement, or on any successor page on the Bloomberg Professional® service or any successor service, as applicable.

### **Discontinuance or Modification of an Index**

If the Reference Sponsor of an Index discontinues publication of or otherwise fails to publish such Index on any day on which such Index is scheduled to be published and the Reference Sponsor or another entity publishes a successor or substitute Index that the calculation agent determines, in its sole discretion, to be comparable to the discontinued Index (such index being referred to herein as a “Successor Index”), then that Successor Index will be deemed to be such index for all purposes relating to the Notes, including for purposes of determining whether a Market Disruption Event exists. Upon any selection by the calculation agent of a Successor Index, the calculation agent will furnish written notice to us and the holders of the Notes.

If such Index is discontinued or if the Reference Sponsor fails to publish the Index and the calculation agent determines that no Successor Index is available at that time, then the calculation agent will determine the applicable official closing level for such Index using the same general methodology previously used by such Reference Sponsor. The calculation agent will continue to make that determination until the earlier of (i) the Final Valuation Date or (ii) a determination by the calculation agent that such Index or a Successor Index is available. In that case, the calculation agent will furnish written notice to us and the holders of the Notes.

If at any time the method of calculating an Index or a Successor Index, or the level thereof, is changed in a material respect, or if an Index or a Successor Index is in any other way modified so that, in the determination of the calculation agent, the level of that Index does not fairly represent the level of such Index or Successor Index that would have prevailed had those changes or modifications not been made, then the calculation agent will make the calculations and adjustments as may be necessary in order to determine a level comparable to the level that would have prevailed had those changes or modifications not been made. In that case, the calculation agent will furnish written notice to us and the holders of the Notes.

Notwithstanding these alternative arrangements, if the publication of an Index is discontinued or there are material changes to an Index, it may adversely affect the value of, and trading in, the Notes.

The “Reference Sponsor” for an Index will be specified in the applicable free writing prospectus or pricing supplement.

### **Market Disruption Event**

“Market Disruption Event” with respect to an Index means any Scheduled Trading Day on which any Relevant Exchange or Related Exchange fails to open for trading during its regular trading session or on which any of the following events has occurred and is continuing which the calculation agent determines is material:

- (i) any suspension of or limitation imposed on trading by any Relevant Exchange or Related Exchange or otherwise, whether by reason of movements in price exceeding limits permitted by the Relevant Exchanges or Related Exchange or otherwise, (A) relating to any stocks or other securities included in such Index then constituting 20% or more of the level of such Index; or (B) in futures or options contracts relating to such Index on any Related Exchange;
- (ii) any event (other than any event described in (iii) below) that disrupts or impairs (as determined by the calculation agent) the ability of market participants in general (A) to effect transactions in, or obtain market values for, any stocks or other securities included in such Index then constituting 20% or more of the level of such Index; or (B) to effect transactions in, or obtain market values for, futures or options contracts relating to such Index on any applicable Related Exchange; or
- (iii) the closure, on any Scheduled Trading Day, of any Relevant Exchange or any Related Exchange relating to any stocks or other securities included in such Index then constituting 20% or more of the level of such Index prior to its Scheduled Closing Time unless the earlier closing time is announced by the Relevant Exchange or Related Exchange at least one hour prior to the earlier of (A) the actual closing time for the regular trading session on such exchange; or (B) the submission deadline for orders to be entered into the Relevant Exchange or Related Exchange for execution at the close of trading on that day.

“Related Exchange” means each exchange or quotation system or any successor to such exchange or quotation system or any substitute exchange or quotation system to which trading in the futures or options contracts relating to such Index or the stocks or other securities included in such Index has temporarily relocated (provided that the

calculation agent has determined that there is comparable liquidity relative to the futures or options contracts relating to such Index or the stocks or other securities included in such Index on such temporary substitute exchange or quotation system as on the original Related Exchange) on which futures or options contracts relating to such Index or the stocks or other securities included in such Index are traded and where such trading has a material effect (as determined by the calculation agent) on the overall market for futures or options related to the stocks or other securities included in such Index or the Index.

“Relevant Exchange” means any exchange or quotation system for the stocks or other securities included in such Index, where trading has a material effect (as determined by the calculation agent) on such Index.

“Scheduled Closing Time” means the scheduled weekday closing time of the Relevant Exchange or Related Exchange, without regard to after hours or any other trading outside of the regular trading session hours.

“Scheduled Trading Day” for any Index means any day on which all of the Relevant Exchanges and Related Exchanges are scheduled to be open for trading for their respective regular trading sessions.

### **Coupon Payment Dates, Call Payment Dates and Maturity Date**

If (1) a day on which a coupon payment is scheduled to be made (a “Coupon Payment Date”), (2) a day payment is to be made if the Notes are called (a “Call Payment Date”) or (3) the maturity date stated in the applicable free writing prospectus or pricing supplement is not a Business Day, the amounts payable or the physical delivery amount will be paid or delivered on the next following Business Day and no interest will be paid in respect of such postponement. The calculation agent may postpone a date on which the coupon due is determined (a “Coupon Determination Date”), and therefore the related Coupon Payment Date; the date on which it is determined if the Notes will be called (a “Call Observation Date”), and therefore the related Call Payment Date; or the Final Valuation Date, and therefore the maturity date, in each case if a Market Disruption Event occurs or is continuing on a day that would otherwise be a Coupon Determination Date, Call Observation Date or the Final Valuation Date, as applicable. We describe the effect of Market Disruption Events under “Valuation Dates” and “Market Disruption Events” below.

### **Observation Periods**

*For Notes where the Reference Asset is a single Index:*

If any date during a period in which the Reference Asset is observed either continuously or at market close for the occurrence of a knock-out or other event (“an “Observation Period”) is not a Scheduled Trading Day, such date will be excluded from the Observation Period. If a Market Disruption Event exists on any date during an Observation Period (other than a Valuation Date), then such date will be excluded from the Observation Period, unless a Market Disruption exists or continues for five or more consecutive Scheduled Trading Days during an Observation Period, in which case such fifth consecutive day and each following day in the Observation Period until the occurrence of a Scheduled Trading Day without a Market Disruption Event will nonetheless be part of the Observation Period and the calculation agent will determine, in its discretion, the index level by means of the formula for and method of calculating the Index which applied just prior to the Market Disruption Event, using the Relevant Exchange’s traded or quoted price of each stock or other security in the Index (or if an event giving rise to a Market Disruption Event has occurred with respect to a stock or other security in the Index and is continuing on that fifth or later Scheduled Trading Day, the calculation agent’s good faith estimate of the value for that stock or other security). If a Valuation Date that is part of an originally scheduled Observation Period is postponed, then the Observation Period will be extended to include such Valuation Date as postponed.

*For Notes where the Reference Asset is a basket of Indices:*

If any date during an Observation Period is not a Scheduled Trading Day for any Index, such date will be excluded from the Observation Period for that Index. If a Market Disruption Event exists on any date during an Observation Period (other than a Valuation Date) for an Index, then such date will be excluded from the Observation Period for such Index, unless a Market Disruption exists or continues for five or more consecutive Scheduled Trading Days during an Observation Period, in which case such fifth consecutive day and each following day in the Observation Period until the occurrence of a Scheduled Trading Day without a Market Disruption Event will nonetheless be part of the Observation Period for that Index and the calculation agent will determine, in its discretion, the index level by means of the formula for and method of calculating the Index which applied just prior to the Market Disruption Event, using the Relevant Exchange’s traded or quoted price of each stock or other security in the Index (or if an event giving rise to a Market Disruption Event has occurred with respect to a stock or other security in the Index and is continuing on that fifth or later Scheduled Trading Day, the calculation agent’s good faith estimate of the value for that stock or other security). For each Index that makes up the Reference Asset, the calculation agent will determine whether a Market Disruption Event exists with respect to each Index independent from other Indices. Therefore, a Market Disruption Event may exist for certain Indices and not exist for other Indices. If a Valuation Date that is part of an originally scheduled Observation Period is postponed for an Index, then the Observation Period for such Index will be extended to include such Valuation Date as postponed. If no Market Disruption Event exists with respect to an

Index on the originally scheduled Valuation Date, any determination made during such Observation Period will be made on the originally scheduled Valuation Date with respect to such Index, irrespective of the existence of a Market Disruption Event with respect to any other Index.

### **Business Day**

A “Business Day” means any day, other than a Saturday or Sunday, that is neither a legal holiday nor a day on which banking institutions are authorized or required by law or regulation to close in the City of New York.

Any payment on the Notes that would otherwise be due on a day that is not a Business Day may instead be paid on the next day that is a Business Day, with the same effect as if paid on the original due date.

### **Payment When Offices or Settlement Systems Are Closed**

If any payment is due on the Notes on a day that would otherwise be a “business day” but is a day on which the office of a paying agent or a settlement system is closed, we will make the payment on the next business day when that paying agent or system is open. Any such payment will be deemed to have been made on the original due date, and no additional payment will be made on account of the delay.

### **Valuation Dates**

Unless otherwise specified in the applicable free writing prospectus or pricing supplement, the performance of the Notes is calculated based on the value of the Reference Asset on the Coupon Determination Dates, Call Observation Dates or one or more other dates during the term of the Notes (each such date a “Valuation Date,” and the last of such dates, or if there is only one such date, the “Final Valuation Date”).

*For Notes where the Reference Asset is a single Index:*

If a Valuation Date as set forth in the applicable free writing prospectus or pricing supplement is not a Scheduled Trading Day, then such Valuation Date will be the next succeeding day that is a Scheduled Trading Day. If a Market Disruption Event exists on a Valuation Date, then such Valuation Date will be the next Scheduled Trading Day on which there is no Market Disruption Event. If a Market Disruption Event exists or continues for five consecutive Scheduled Trading Days, then the fifth of such consecutive Scheduled Trading Days will nonetheless be the Valuation Date, and the calculation agent will determine, in its discretion, the index level by means of the formula for and method of calculating the Index which applied just prior to the Market Disruption Event, using the Relevant Exchange’s traded or quoted price of each stock or other security in the Index (or if an event giving rise to a Market Disruption Event has occurred with respect to a stock or other security in the Index and is continuing on that fifth Scheduled Trading Day, the calculation agent’s good faith estimate of the value for that stock or other security). For the avoidance of doubt, if Valuation Dates are scheduled to be within five Scheduled Trading Days of each other, a Market Disruption Event on the first such scheduled Valuation Date could cause one or more Valuation Dates to occur simultaneously. If a Coupon Determination Date, Call Observation Date or Final Valuation Date is postponed, then the related Coupon Payment Date, Call Payment Date or maturity date will also be postponed by the same number of Business Days and no interest will be paid in respect of such postponement.

*For Notes where the Reference Asset is a basket of Indices:*

If a Valuation Date as set forth in the applicable free writing prospectus or pricing supplement is not a Scheduled Trading Day for an Index, then such Valuation Date for such Index will be the next succeeding day that is a Scheduled Trading Day for such Index. For each Index that makes up the Reference Asset, the calculation agent will determine whether a Market Disruption Event exists on a Valuation Date with respect to each Index independent from other Indices. Therefore a Market Disruption Event may exist for certain Indices and not exist for other Indices. If a Market Disruption Event exists on a Valuation Date for an Index, then such Valuation Date for such Index will be the next Scheduled Trading Day for which there is no Market Disruption Event for that Index. If a Market Disruption Event exists or continues for five consecutive Scheduled Trading Days, then that fifth Scheduled Trading Day will nonetheless be the Valuation Date, and the calculation agent will determine, in its discretion, the index level with respect to such Index by means of the formula for and method of calculating such Index which applied just prior to the Market Disruption Event, using the Relevant Exchange’s traded or quoted price of each stock or other security in such Index (or if an event giving rise to a Market Disruption Event has occurred with respect to a stock or other security in such Index and is continuing on that fifth Scheduled Trading Day, the calculation agent’s good faith estimate of the value for that stock or other security). For the avoidance of doubt, if Valuation Dates are scheduled to be within five Scheduled Trading Days of each other, a Market Disruption Event on the first such scheduled Valuation Date could cause one or more Valuation Dates to occur simultaneously. If no Market Disruption Event exists with respect to an Index on the originally scheduled Valuation Date, the determination of such Index’s level will be made on the originally scheduled Valuation Date, irrespective of the existence of a Market Disruption Event with respect to any other Index. If a Coupon Determination Date, Call Observation Date or Final Valuation Date is postponed, then the related Coupon Payment

Date, Call Payment Date or maturity date will also be postponed by the same number of Business Days and no interest will be paid in respect of such postponement.