

BANK OF NOVA SCOTIA

Form 424B2

October 30, 2018

The information in this Pricing Supplement is not complete and may be changed. We may not sell these notes until the Pricing Supplement is delivered in final form. We are not selling these notes, nor are we soliciting offers to buy these notes, in any State where such offer or sale is not permitted.

Subject to Completion. Dated October 30, 2018

Filed Pursuant to Rule 424(b)(2)

Registration No. 333-215597

The Bank of Nova Scotia

\$ Enhanced Participation Basket-Linked Notes Due [ ]

The notes will not bear interest. The amount that you will be paid on your notes at maturity (expected to be the 2<sup>nd</sup> business day after the valuation date) is based on the performance of a weighted basket comprised of the EURO STOXX 50<sup>®</sup> Index (36.00% weighting), TOPIX (27.00% weighting), the FTSE<sup>®</sup> 100 Index (20.00% weighting), the Swiss Market Index (9.00% weighting) and the S&P/ASX 200 Index (8.00% weighting) as measured from the trade date to and including the valuation date (expected to be approximately 36 to 39 months after the trade date). The initial basket level will be set to 100 on the trade date and the final basket level will equal the sum of the products, as calculated for each basket component, of: (i) the final index level divided by the initial index level (set on the trade date and may be higher or lower than the actual closing level of the basket component on the trade date) multiplied by (ii) the applicable initial weighted value for each basket component. If the final basket level on the valuation date is greater than the initial basket level, the return on your notes will be positive and will equal the product of the basket return multiplied by the participation rate (expected to be between 120% and 130%). If the final basket level is equal to or less than the initial basket level, you will receive the principal amount of your notes. Any payment on your notes is subject to the creditworthiness of The Bank of Nova Scotia.

To determine your payment at maturity, we will calculate the basket return, which is the percentage increase or decrease in the final basket level from the initial basket level. At maturity, for each \$1,000 principal amount of your notes:

if the final basket level is greater than the initial basket level (the basket return is positive), you will receive an amount in cash equal to the sum of (i) \$1,000 plus (ii) the product of (a) \$1,000 times (b) the basket return times (c) the participation rate (expected to be between 120% and 130%); or

if the final basket level is equal to or less than the initial basket level (the basket return is zero or negative), you will receive an amount in cash equal to \$1,000.

Declines in one basket index may offset increases in the other basket indices. Due to the unequal weighting of each basket component, the performances of the EURO STOXX 50<sup>®</sup> Index, TOPIX and the FTSE<sup>®</sup> 100 Index will have a significantly larger impact on your return on the notes than the performance of the Swiss Market Index or the S&P/ASX 200 Index. In addition, no payments on your notes will be made prior to maturity.

Investment in the notes involves certain risks. You should refer to “Additional Risks” beginning on page P-16 of this pricing supplement and “Additional Risk Factors Specific to the Notes” beginning on page PS-6 of the accompanying product prospectus supplement and “Risk Factors” beginning on page S-2 of the accompanying prospectus supplement and on page 6 of the accompanying prospectus.

The initial estimated value of your notes at the time the terms of your notes are set on the trade date is expected to be between \$945.00 and \$975.00 per \$1,000 principal amount, which will be less than the original issue price of your notes listed below. See “Additional Information Regarding Estimated Value of the Notes” on the following page and “Additional Risks” beginning on page P-16 of this document for additional information. The actual value of your notes at any time will reflect many factors and cannot be predicted with accuracy.

	Per Note Total	
Original Issue Price	100.00%	\$
Underwriting commissions	2.50%	\$
Proceeds to The Bank of Nova Scotia	97.50%	\$

NEITHER THE UNITED STATES 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 PRICING SUPPLEMENT, THE ACCOMPANYING PROSPECTUS, ACCOMPANYING PROSPECTUS SUPPLEMENT OR ACCOMPANYING PRODUCT PROSPECTUS SUPPLEMENT. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE. THE NOTES ARE NOT INSURED BY THE CANADA DEPOSIT INSURANCE CORPORATION PURSUANT TO THE CANADA DEPOSIT INSURANCE CORPORATION ACT OR THE U.S. FEDERAL DEPOSIT INSURANCE CORPORATION OR ANY OTHER GOVERNMENT AGENCY OF CANADA, THE UNITED STATES OR ANY OTHER JURISDICTION.

Scotia Capital (USA) Inc. Goldman Sachs & Co. LLC  
Dealer

Pricing Supplement dated November [ ], 2018

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The Enhanced Participation Basket-Linked Notes Due [ ] (the “notes”) offered hereunder are unsubordinated and unsecured obligations of The Bank of Nova Scotia (the “Bank”) and are subject to investment risks including the credit risk of The Bank of Nova Scotia. As used in this pricing supplement, the “Bank,” “we,” “us” or “our” refers to The Bank of Nova Scotia. The notes will not be listed on any U.S. securities exchange or automated quotation system.

The return on your notes will relate to the price return of the basket components and will not include a total return or dividend component. The notes are derivative products based on the performance of the basket. The notes do not constitute a direct investment in any of the shares, units or other securities represented by the basket components. By acquiring the notes, you will not have a direct economic or other interest in, claim or entitlement to, or any legal or beneficial ownership of any such share, unit or security and will not have any rights as a shareholder, unitholder or other security holder of any of the issuers including, without limitation, any voting rights or rights to receive dividends or other distributions.

Scotia Capital (USA) Inc. (“SCUSA”), our affiliate, will purchase the notes from us for distribution to other registered broker dealers or will offer the notes directly to investors. SCUSA or any of its affiliates or agents may use this pricing supplement in market-making transactions in notes after their initial sale. Unless we, SCUSA or another of our affiliates or agents selling such notes to you informs you otherwise in the confirmation of sale, this pricing supplement is being used in a market-making transaction. See “Supplemental Plan of Distribution (Conflicts of Interest)” in this pricing supplement and “Supplemental Plan of Distribution (Conflicts of Interest)” on page PS-32 of the accompanying product prospectus supplement.

The original issue price, commissions and proceeds to the Bank listed above relate to the notes we issue initially. We may decide to sell additional notes after the date of this pricing supplement, at original issue prices and with commissions and proceeds to the Bank that differ from the amounts set forth above. The return (whether positive or negative) on your investment in the notes will depend in part on the original issue price you pay for such notes.

#### Additional Information Regarding Estimated Value of the Notes

On the cover page of this pricing supplement, the Bank has provided the initial estimated value range for the notes. This range of estimated values was determined by reference to the Bank’s internal pricing models, which take into consideration certain factors, such as the Bank’s internal funding rate on the trade date and the Bank’s assumptions about market parameters. For more information about the initial estimated value, see “Additional Risks” on page P-16. The economic terms of the notes are based on the Bank’s internal funding rate, which is the rate the Bank would pay to borrow funds through the issuance of similar market-linked notes, the underwriting discount and the economic terms of certain related hedging arrangements. Due to these factors, the original issue price you pay to purchase the notes will be greater than the initial estimated value of the notes. The Bank’s internal funding rate is typically lower than the rate the Bank would pay when it issues conventional fixed rate debt securities as discussed further under “Additional Risks — Neither the Bank’s nor GS&Co.’s estimated value of the notes at any time is determined by reference to credit spreads or the borrowing rate the Bank would pay for its conventional fixed-rate debt securities”. The Bank’s use of its internal funding rate reduces the economic terms of the notes to you.

The value of your notes at any time will reflect many factors and cannot be predicted; however, the price (not including Goldman Sachs & Co. LLC’s (“GS&Co.’s”) customary bid and ask spreads) at which GS&Co. would initially buy or sell notes in the secondary market (if GS&Co. makes a market, which it is not obligated to do) and the value that GS&Co. will initially use for account statements and otherwise is equal to approximately GS&Co.’s estimate of the market value of your notes on the trade date, based on its pricing models and taking into account the Bank’s internal funding rate, plus an additional amount (initially equal to \$ per \$1,000 principal amount).

Prior to , the price (not including GS&Co.’s customary bid and ask spreads) at which GS&Co. would buy or sell your notes (if it makes a market, which it is not obligated to do) will equal approximately the sum of (a) the then-current estimated value of your notes (as determined by reference to GS&Co.’s pricing models) plus (b) any remaining additional amount (the additional amount will decline to zero on a straight-line basis from the time of pricing through approximately 3 months). On and after , the price (not including GS&Co.’s customary bid and ask spreads) at which GS&Co. would buy or sell your notes (if it makes a market) will equal approximately the then-current estimated value of your notes determined by reference to such pricing models. For additional information regarding the value of your notes shown in your GS&Co. account statements and the price at which GS&Co. would buy or sell your notes (if GS&Co. makes a market, which it is not obligated to do), each based on GS&Co.’s pricing

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models; see “Additional Risks—The price at which GS&Co. would buy or sell your notes (if GS&Co. makes a market, which it is not obligated to do) will be based on GS&Co.’s estimated value of your notes”.

We urge you to read the “Additional Risks” beginning on page P-16 of this pricing supplement.

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Summary

The information in this “Summary” section is qualified by the more detailed information set forth in this pricing supplement, the accompanying prospectus, accompanying prospectus supplement, and accompanying product prospectus supplement, each filed with the Securities and Exchange Commission (“SEC”). See “Additional Terms of Your Notes” in this pricing supplement.

Issuer: The Bank of Nova Scotia (the “Bank”)

CUSIP/ISIN: 064159MP8 / US064159MP85

Type of Notes: Enhanced Participation Basket-Linked Notes

**Basket Components:** The EURO STOXX 50<sup>®</sup> Index (Bloomberg Ticker: “SX5E Index”), as published by STOXX Limited (“STOXX”); TOPIX (Bloomberg Ticker: “TPX Index”), as maintained by the Tokyo Stock Exchange, Inc. (“TSE”); the FTSE100 Index (Bloomberg Ticker: “UKX Index”), as published by FTSE Russell, a company owned by the London Stock Exchange (“FTSE”); the Swiss Market Index (Bloomberg Ticker: “SMI Index”), as published by SIX Group Ltd. (“SIX Group”); and the S&P/ASX 200 Index (Bloomberg Ticker: “AS51 Index”), as published by S&P Dow Jones Indices LLC (“S&P”); see “Information Regarding the Basket and the Basket Components” on page P-24. We refer to each of STOXX, TSE, FTSE, SIX Group and S&P as a “basket component sponsor”, and together as the “basket component sponsors”.

**Minimum Investment and Denominations:** \$1,000 and integral multiples of \$1,000 in excess thereof

**Principal Amount:** \$1,000 per note; \$[ ] in the aggregate for all the offered notes; the aggregate principal amount of the offered notes may be increased if the Bank, at its sole option, decides to sell an additional amount of the offered notes on a date subsequent to the date of this pricing supplement.

**Original Issue Price:** 100% of the principal amount of each note

**Currency:** U.S. dollars

**Trade Date:** [ ]  
[ ] (to be determined on the trade date and expected to be the 5<sup>th</sup> business day after the trade date).

**Original Issue Date:** We expect that delivery of the notes will be made against payment therefor on or about the 5<sup>th</sup> business day following the date of pricing of the notes (this settlement cycle being referred to as “T+5”). Under Rule 15c6-1 of the Securities Exchange Act of 1934, as amended, trades in the secondary market generally are required to settle in two business days (T+2), unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the notes on or prior to the third business day after the trade date will be required, by virtue of the fact that each note initially will settle in 5 business days (T+5), to specify alternative settlement arrangements to prevent a failed settlement.

**Valuation Date:** [ ] (to be determined on the trade date and expected to be approximately 36 to 39 months after the trade date).

The valuation date could be delayed by the occurrence of a market disruption event. See “General Terms of the Notes — Market Disruption Events” beginning on page PS-20 in the accompanying product prospectus supplement. Further, if the valuation date is not a trading day, the valuation date will be postponed in the same manner as if a market disruption event has occurred.

**Maturity Date:** [ ] (to be determined on the trade date and expected to be the 2<sup>nd</sup> business day after the valuation date), subject to adjustment due to a market disruption event, a non-trading day or a non-business day, as described in more detail under “General Terms of the Notes—Maturity Date” on page PS-18 in the accompanying product prospectus supplement.

**Purchase at amount other than principal amount:** The amount we will pay you on the maturity date for your notes will not be adjusted based on the original issue price you pay for your notes, so if you acquire notes at a premium (or discount) to the principal amount and hold them to the maturity date, it could affect your investment in a number of ways. The return on your investment in such notes will be lower (or higher) than it would have been had you purchased the notes at the principal amount. See “Additional Risks—If you purchase your notes at a premium to the principal amount, the return on your investment will be lower than the return on notes purchased at the principal amount and the impact of certain key terms of the notes will be negatively affected” on page P-21 of this pricing supplement.

**Fees and Expenses:** As part of the distribution of the notes, SCUSA or one of our affiliates will sell notes to GS&Co. at a discount reflecting commissions of \$25.00 per \$1,000 principal amount of notes. The commissions per \$1,000 principal amount are comprised of \$2.50 of fees and \$22.50 of selling commission. See “Supplemental Plan of Distribution (Conflicts of Interest)” in this pricing supplement. The price at which you purchase the notes includes costs that the Bank or its affiliates expect to incur and profits that the Bank or its affiliates expect to realize in connection with hedging activities related to the notes, as set forth below under “Supplemental Plan of Distribution (Conflicts of Interest)”. These costs and profits will likely reduce the secondary market price, if any secondary market develops, for the notes. As a result, you may experience an immediate and substantial decline in the market value of your notes on the trade date. See “Additional Risks—Hedging activities by the Bank and GS&Co. may negatively impact investors in the notes and cause our respective interests and those of our clients and counterparties to be contrary to those of investors in the notes” in this pricing supplement.

**Payment at Maturity:** The payment at maturity will be based on the performance of the basket and will be calculated as follows:

- If the final basket level is greater than the initial basket level, then the payment at maturity will equal:
  - o principal amount + (principal amount x basket return x participation rate)
- If the final basket level is equal to or less than the initial basket level, then the payment at maturity will equal the principal amount

**Initial Basket Level:** To be set to 100 on the trade date.

**Initial Weighted Value:** The initial weighted value for each of the basket components equals the product of the initial weight of such basket component times the initial basket level. The initial weight of each basket component is shown in the table below:

Basket Component	Initial Weight in Basket
EURO STOXX 50® Index	36.00%
TOPIX	27.00%
FTSE® 100 Index	20.00%

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Swiss Market Index	9.00%
S&P/ASX 200 Index	8.00%

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Initial EURO  
STOXX 50<sup>®</sup> [ ] (to be set on the trade date).  
Index Level:

Initial TOPIX  
Level: [ ] (to be set on the trade date).

Initial FTSE<sup>®</sup>  
100 Index Level: [ ] (to be set on the trade date).

Initial Swiss  
Market Index [ ] (to be set on the trade date).  
Level:

Initial S&P/ASX  
200 Index Level: [ ] (to be set on the trade date).

Final EURO  
STOXX 50<sup>®</sup>  
Index Level: The closing level of such basket component calculated on the valuation date. In certain special circumstances, the final level will be determined by the calculation agent, in its discretion. See “General Terms of the Notes — Unavailability of the Level of the Reference Asset on a Valuation Date” on page PS-19 and “General Terms of the Notes — Market Disruption Events” beginning on page PS-20 in the accompanying product prospectus supplement.

Final TOPIX  
Level: The closing level of such basket component calculated on the valuation date. In certain special circumstances, the final level will be determined by the calculation agent, in its discretion. See “General Terms of the Notes — Unavailability of the Level of the Reference Asset on a Valuation Date” on page PS-19 and “General Terms of the Notes — Market Disruption Events” beginning on page PS-20 in the accompanying product prospectus supplement.

Final FTSE<sup>®</sup>  
100 Index  
Level: The closing level of such basket component calculated on the valuation date. In certain special circumstances, the final level will be determined by the calculation agent, in its discretion. See “General Terms of the Notes — Unavailability of the Level of the Reference Asset on a Valuation Date” on page PS-19 and “General Terms of the Notes — Market Disruption Events” beginning on page PS-20 in the accompanying product prospectus supplement.

Final Swiss  
Market Index  
level: The closing level of such basket component calculated on the valuation date. In certain special circumstances, the final level will be determined by the calculation agent, in its discretion. See “General Terms of the Notes — Unavailability of the Level of the Reference Asset on a Valuation Date” on page PS-19 and “General Terms of the Notes — Market Disruption Events” beginning on page PS-20 in the accompanying product prospectus supplement.

Final  
S&P/ASX  
200 Index  
level: The closing level of such basket component calculated on the valuation date. In certain special circumstances, the final level will be determined by the calculation agent, in its discretion. See “General Terms of the Notes — Unavailability of the Level of the Reference Asset on a Valuation Date” on page PS-19 and “General Terms of the Notes — Market Disruption Events” beginning on page PS-20 in the accompanying product prospectus supplement.

Final Basket

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- Level: The sum of the following: (1) the final EURO STOXX 50<sup>®</sup> Index level divided by the initial EURO STOXX 50<sup>®</sup> Index level, multiplied by the initial weighted value of the EURO STOXX 50<sup>®</sup> Index plus (2) the final TOPIX level divided by the initial TOPIX level, multiplied by the initial weighted value of the TOPIX plus (3) the final FTSE<sup>®</sup> 100 Index level divided by the initial FTSE<sup>®</sup> 100 Index level, multiplied by the initial weighted value of the FTSE<sup>®</sup> 100 Index plus (4) the final Swiss Market Index level divided by the initial Swiss Market Index level, multiplied by the initial weighted value of the Swiss Market Index plus (5) the final S&P/ASX 200 Index level divided by the initial S&P/ASX 200 Index level, multiplied by the initial weighted value of the S&P/ASX 200 Index.
- Basket Return: The quotient of (1) the final basket level minus the initial basket level divided by (2) the initial basket level, expressed as a percentage.

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Participation Rate: Expected to be between 120% and 130% (the actual participation rate will be determined on the trade date).

Closing Level: As used herein, the “closing level” of a basket component on any date will be determined based upon the closing level published on the Bloomberg page for such basket component, or any successor page on Bloomberg or any successor service, as applicable, on such date.

Trading Day: (i) With respect to the EURO STOXX 50<sup>®</sup> Index, a day on which the level of such basket component is calculated and published by the basket component sponsor, regardless of whether one or more of the principal securities markets for the constituent stocks comprising such basket component (“component stocks”) are closed on that day and (ii) with respect to each of the TOPIX, the FTSE100 Index, the Swiss Market Index and the S&P/ASX 200 Index, a day on which the respective principal securities markets for all of the component stocks are open for trading, such basket component sponsor is open for business and such basket component is calculated and published by such basket component sponsor; although a basket component sponsor may publish a level with respect to a basket component on a day when one or more of the principal securities markets for such component stocks are closed, that day would not be a trading day for purposes of such basket component.

Form of Notes: Book-entry

Calculation Agent: Scotia Capital Inc., an affiliate of the Bank

Status: The notes will constitute direct, unsubordinated and unsecured obligations of the Bank ranking pari passu with all other direct, unsecured and unsubordinated indebtedness of the Bank from time to time outstanding (except as otherwise prescribed by law). Holders will not have the benefit of any insurance under the provisions of the Canada Deposit Insurance Corporation Act, the U.S. Federal Deposit Insurance Act or under any other deposit insurance regime of any jurisdiction.

Tax Redemption: The Bank (or its successor) may redeem the notes, in whole but not in part, at a redemption price determined by the calculation agent in a manner reasonably calculated to preserve your and our relative economic position, if it is determined that changes in tax laws or their interpretation will result in the Bank (or its successor) becoming obligated to pay additional amounts with respect to the notes. See “Tax Redemption” below.

Listing: The notes will not be listed on any securities exchange or quotation system.

Use of Proceeds: General corporate purposes

Clearance and Settlement: Depository Trust Company

Business Day: New York and Toronto

Terms Incorporated: All of the terms appearing above the item under the caption “General Terms of the Notes” beginning on page PS-15 in the accompanying product prospectus supplement, as modified by this pricing supplement.

INVESTING IN THE NOTES INVOLVES CERTAIN RISKS. ANY PAYMENT ON THE NOTES, INCLUDING ANY REPAYMENT OF PRINCIPAL, IS SUBJECT TO THE CREDITWORTHINESS OF THE BANK. IF THE BANK WERE TO DEFAULT ON ITS PAYMENT OBLIGATIONS YOU MAY NOT RECEIVE ANY AMOUNTS OWED TO YOU UNDER THE NOTES AND YOU COULD LOSE YOUR ENTIRE INVESTMENT.

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## ADDITIONAL TERMS OF YOUR NOTES

You should read this pricing supplement together with the prospectus dated February 1, 2017, as supplemented by the prospectus supplement dated February 13, 2017 and the product prospectus supplement (Equity Linked Index Notes, Series A) dated March 2, 2017, relating to our Senior Note Program, Series A, of which these notes are a part. Capitalized terms used but not defined in this pricing supplement will have the meanings given to them in the product prospectus supplement. In the event of any conflict, this pricing supplement will control. The notes may vary from the terms described in the accompanying prospectus, accompanying prospectus supplement and accompanying product prospectus supplement in several important ways. You should read this pricing supplement carefully, including the documents incorporated by reference herein.

This pricing supplement, together with the documents listed below, contains the terms of the notes and supersedes all prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours. You should carefully consider, among other things, the matters set forth in “Additional Risk Factors Specific to the Notes” in the accompanying product prospectus supplement, as the notes involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisors before you invest in the notes. You may access these documents on the SEC website at [www.sec.gov](http://www.sec.gov) as follows (or if that address has changed, by reviewing our filings for the relevant date on the SEC website).

Product Prospectus Supplement (Equity Linked Index Notes, Series A) dated March 2, 2017:  
[http://www.sec.gov/Archives/edgar/data/9631/000110465917013557/a17-7248\\_7424b5.htm](http://www.sec.gov/Archives/edgar/data/9631/000110465917013557/a17-7248_7424b5.htm)

Prospectus Supplement dated February 13, 2017:  
[http://www.sec.gov/Archives/edgar/data/9631/000110465917008642/a17-4372\\_1424b3.htm](http://www.sec.gov/Archives/edgar/data/9631/000110465917008642/a17-4372_1424b3.htm)

Prospectus dated February 1, 2017:

<http://www.sec.gov/Archives/edgar/data/9631/000119312517027656/d338678d424b3.htm>

## INVESTOR SUITABILITY

The notes may be suitable for you if:

- You fully understand the risks inherent in an investment in the notes.
- You believe the level of the basket will appreciate over the term of the notes.

You would be willing to invest in the notes if the participation rate was set equal to the bottom of the range indicated above (the actual participation rate will be set on the trade date).

You are willing to hold the notes to maturity, a term of between approximately 36 to 39 months, and accept that there may be little or no secondary market for the notes.

You can tolerate fluctuations in the price of the notes prior to maturity that may be similar to or exceed the downside fluctuations in the level of the basket components or the price of the component stocks.

You do not seek current income from your investment and are willing to forego any dividends paid on the component stocks.

You seek an investment with exposure to companies in the Eurozone, Japan, United Kingdom, Switzerland and Australia.

You are willing to assume the credit risk of the Bank for all payments under the notes, and understand that if the Bank defaults on its obligations you may not receive any amounts due to you including any repayment of principal.

The notes may not be suitable for you if:

- You do not fully understand the risks inherent in an investment in the notes.
- You believe that the level of the basket will decline during the term of the notes.

You would be unwilling to invest in the notes if the participation rate was set equal to the bottom of the range indicated above (the actual participation rate will be set on the trade date).

You cannot tolerate fluctuations in the price of the notes prior to maturity that may be similar to or exceed the downside fluctuations in the level of the basket components or the price of the component stocks.

You seek current income from your investment or are unwilling to forego any dividends paid on the component stocks.

You are unable or unwilling to hold the notes to maturity, a term of approximately 36 to 39 months, or you seek an investment for which there will be a secondary market.

You do not seek an investment with exposure to companies in the Eurozone, Japan, United Kingdom, Switzerland and Australia.

- You are not willing to assume the credit risk of the Bank for all payments under the notes.

The investor suitability considerations identified above are not exhaustive. Whether or not the notes are a suitable investment for you will depend on your individual circumstances and you should reach an investment decision only after you and your investment, legal, tax, accounting and other advisors have carefully considered the suitability of an investment in the notes in light of your particular circumstances. You should also review “Additional Risks” beginning

on page P-16 of this pricing supplement, “Additional Risk Factors Specific to the Notes” beginning on page PS-6 of the accompanying product prospectus supplement and "Risk Factors" beginning on page S-2 of the accompanying prospectus supplement and on page 6 of the accompanying prospectus for risks related to an investment in the notes.

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## HYPOTHETICAL PAYMENTS AT MATURITY ON THE NOTES

The examples set out below are included for illustration only. They should not be taken as an indication or prediction of future investment results and are intended merely to illustrate the impact that the various hypothetical basket closing levels or hypothetical closing levels of the basket components, as applicable, on the valuation date could have on the payment at maturity assuming all other variables remain constant.

The examples below are based on a range of final basket levels and closing levels of the basket components that are entirely hypothetical; the level of the basket on any day throughout the life of your notes, including the final basket level on the valuation date, cannot be predicted. The basket components have been highly volatile in the past, meaning that the levels of the basket components have changed considerably in relatively short periods, and their performances cannot be predicted for any future period.

The information in the following examples reflects hypothetical rates of return on the offered notes assuming that they are purchased on the original issue date at the principal amount and held to the maturity date. If you sell your notes in a secondary market prior to the maturity date, your return will depend upon the market value of your notes at the time of sale, which may be affected by a number of factors that are not reflected in the examples below, such as interest rates, the volatility of the basket components and our creditworthiness. In addition, the estimated value of your notes at the time the terms of your notes were set on the trade date (as determined by reference to pricing models used by us) is less than the original issue price of your notes. For more information on the estimated value of your notes, see “Additional Risks—The Bank’s initial estimated value of the notes at the time of pricing (when the terms of your notes are set on the trade date) will be lower than the original issue price of the notes” on page P-16 of this pricing supplement. The information in the examples also reflect the key terms and assumptions in the box below.

### Key Terms and

#### Assumptions

Principal amount \$1,000

Participation rate 120%\*

Initial basket level 100

\*The bottom of the participation rate range of 120% - 130%. The actual participation rate will be determined on the trade date.

Neither a market disruption event nor a non-trading day occurs with respect to any basket component on the originally scheduled valuation date.

No change in or affecting any of the basket components or the methods by which any of the basket component sponsors calculates the EURO STOXX 50® Index, the TOPIX, the FTSE® 100 Index, the



Swiss Market Index or the S&P/ASX 200 Index, respectively.

Notes purchased on the original issue date at the principal amount and held to the maturity date.

Moreover, we have not yet set the initial level for each basket component that will serve as the baseline for determining the basket return, or the participation rate, each of which will affect the amount that we will pay on your notes at maturity. We will not do so until the trade date. As a result, the actual initial levels may differ substantially from the levels of the basket component prior to the trade date.

For these reasons, the actual performance of the basket over the life of your notes, as well as the amount payable at maturity, may bear little relation to the hypothetical examples shown below or to the historical level of each basket component shown elsewhere in this pricing supplement. For information about the historical level of each basket component see "Information Regarding the Basket and the Basket Components" below. Before investing in the offered notes, you should consult publicly available information to determine the levels of the basket components between the date of this pricing supplement and the date of your purchase of the offered notes.

Also, the hypothetical examples shown below do not take into account the effects of applicable taxes. Because of the U.S. tax treatment applicable to your notes, tax liabilities could affect the after-tax rate of return on your notes to a comparatively greater extent than the after-tax return on the basket components.

The levels in the left column of the table below represent hypothetical final basket levels and are expressed as percentages of the initial basket level. The amounts in the right column represent the hypothetical payment at maturity, based on the corresponding hypothetical final basket level (expressed as a percentage of the initial basket level), and are expressed as

percentages of the principal amount of a note (rounded to the nearest one-thousandth of a percent). Thus, a hypothetical payment at maturity of 100.000% means that the value of the cash payment that we would deliver for each \$1,000 of the outstanding principal amount of the offered notes on the maturity date would equal 100.000% of the principal amount of a note, based on the corresponding hypothetical final basket level (expressed as a percentage of the initial basket level) and the assumptions noted above.

Hypothetical Final Basket Level (as Percentage of Initial Basket Level)	Hypothetical Payment at Maturity (as Percentage of Principal Amount)
140.000%	148.000%
130.000%	136.000%
120.000%	124.000%
110.000%	112.000%
100.000%	100.000%
75.000%	100.000%
50.000%	100.000%
25.000%	100.000%
0.000%	100.000%

If, for example, the final basket level were determined to be 25.000% of the initial basket level, the payment at maturity that we would pay on your notes at maturity would be 100.000% of the principal amount of your notes, as shown in the table above. As a result, if you purchased your notes on the original issue date at the principal amount and held them to the maturity date, you would recognize no gain on your investment in the notes (and would lose a percentage of your investment if you purchased your notes at a premium to the principal amount).

The following chart shows a graphical illustration of the hypothetical payment at maturity that we would pay on your notes on the maturity date, if the final basket level were any of the hypothetical levels shown on the horizontal axis. The hypothetical payments at maturity in the chart are expressed as percentages of the principal amount of your notes and the hypothetical final basket levels are expressed as percentages of the initial basket level. The chart shows that any hypothetical final basket level equal to or less than 100.000% (the section left of the 100.000% marker on the horizontal axis) would result in a hypothetical payment at maturity of 100.000% of the principal amount of your notes (the section at the 100.000% marker on the vertical axis) and, accordingly, no gain on the principal amount to the holder of the notes.

The following examples illustrate the hypothetical payment at maturity for each note based on hypothetical final levels of the basket components, calculated based on the key terms and assumptions above. The levels in Column A represent hypothetical initial levels for each basket component, and the levels in Column B represent hypothetical final levels for each basket component. The percentages in Column C represent hypothetical final levels for each basket component in Column B expressed as percentages of the corresponding hypothetical initial levels in Column A. The amounts in Column D represent the applicable initial weighted value for each basket component, and the amounts in Column E represent the products of the percentages in Column C times the corresponding amounts in Column D. The final basket level for each example is shown beneath each example, and will equal the sum of the products shown in Column E. The basket return for each example is shown beneath the final basket level for such example, and will equal the quotient of (i) the final basket level for such example minus the initial basket level divided by (ii) the initial basket level, expressed as a percentage. The values below have been rounded for ease of analysis.

Example 1: The final basket level is greater than the initial basket level.

Basket Component	Column A Hypothetical Initial Level	Column B Hypothetical Final Level	Column C B / Column A	Column D Initial Weighted Value	Column E C × Column D
EURO STOXX 50 <sup>®</sup> Index	3,300.00	3,333.00	101.00%	36.00	36.36
TOPIX	1,700.00	1,734.00	102.00%	27.00	27.54
FTSE <sup>®</sup> 100 Index	7,000.00	7,210.00	103.00%	20.00	20.60
Swiss Market Index	8,600.00	9,288.00	108.00%	9.00	9.72
S&P/ASX 200 Index	5,900.000	7,080.000	120.00%	8.00	9.60
				Final Basket Level:	103.82
				Basket Return:	3.82%

In this example, all of the hypothetical final levels for the basket components are greater than the applicable hypothetical initial levels, which results in the hypothetical final basket level being greater than the initial basket level of 100.00. Since the hypothetical final basket level was determined to be 103.82, the hypothetical payment at maturity for each \$1,000 principal amount of your notes will equal:

$$\text{Payment at maturity} = \$1,000 + (\$1,000 \times 3.82\% \times 120\%) = \$1,045.84$$

Example 2: The final basket level is less than the initial basket level. The payment at maturity equals the \$1,000 principal amount.

Basket Component	Column A Hypothetical Initial Level	Column B Hypothetical Final Level	Column C B / Column A	Column D Initial Weighted Value	Column E C × Column D
EURO STOXX 50 <sup>®</sup> Index	3,300.00	990.00	30.00%	36.00	10.80
TOPIX	1,700.00	510.00	30.00%	27.00	8.10
FTSE <sup>®</sup> 100 Index	7,000.00	7,000.00	100.00%	20.00	20.00
Swiss Market Index	8,600.00	9,030.00	105.00%	9.00	9.45
S&P/ASX 200 Index	5,900.000	6,195.000	105.00%	8.00	8.40
				Final Basket Level:	56.75
				Basket Return:	-43.25%

In this example, the hypothetical final levels of the EURO STOXX 50<sup>®</sup> Index and TOPIX are less than their applicable hypothetical initial levels, while the hypothetical final level of FTSE<sup>®</sup> 100 Index is equal to its hypothetical initial level and the hypothetical final levels of the Swiss Market Index and S&P/ASX 200 Index are greater than their applicable hypothetical initial levels.

Because the basket is unequally weighted, increases in the lower weighted basket components will be offset by decreases in the more heavily weighted basket components. In this example, the large declines in the EURO STOXX 50<sup>®</sup> Index and TOPIX results in the hypothetical final basket level being less than the initial basket level even though

the FTSE® 100 Index remained flat and the Swiss Market Index and the S&P/ASX 200 Index increased. Since the hypothetical final basket level of 56.75 is less than the initial basket level, the hypothetical payment at maturity for each \$1,000 principal amount of your notes will equal \$1,000.

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Example 3: The final basket level is less than the initial basket level. The payment at maturity equals the \$1,000 principal amount.

Basket Component	Column A Hypothetical Initial Level	Column B Hypothetical Final Level	Column C B / Column A	Column D Initial Weighted Value	Column E C × Column D
EURO STOXX 50® Index	3,300.00	1,650.00	50.00%	36.00	18.00
TOPIX	1,700.00	1,020.00	60.00%	27.00	16.20
FTSE® 100 Index	7,000.00	4,200.00	60.00%	20.00	12.00
Swiss Market Index	8,600.00	5,590.00	65.00%	9.00	5.85
S&P/ASX 200 Index	5,900.000	3,245.000	55.00%	8.00	4.40
				Final Basket Level:	56.45
				Basket Return:	-43.55%

In this example, the hypothetical final levels for all of the basket components are less than the applicable hypothetical initial levels, which results in the hypothetical final basket level being less than the initial basket level of 100.00. Since the hypothetical final basket level of 56.45 is less than the initial basket level, the hypothetical payment at maturity for each \$1,000 principal amount of your notes will equal \$1,000.

Any payment on the notes, including any repayment of principal, is subject to the creditworthiness of the Bank. If the Bank were to default on its payment obligations, you may not receive any amounts owed to you under the notes and you could lose your entire investment.

The payments at maturity shown above are entirely hypothetical; they are based on a hypothetical participation rate, levels of the basket components that may not be achieved on the valuation date and on assumptions that may prove to be erroneous. The actual market value of your notes at maturity or at any other time, including any time you may wish to sell your notes, may bear little relation to the hypothetical payments at maturity shown above, and these amounts should not be viewed as an indication of the financial return on an investment in the offered notes. The hypothetical payments at maturity on the notes held to the maturity date in the examples above assume you purchased your notes at their principal amount and have not been adjusted to reflect the actual issue price you pay for your notes. The return on your investment (whether positive or negative) in your notes will be affected by the amount you pay for your notes. If you purchase your notes for a price other than the principal amount, the return on your investment will differ from, and may be significantly lower than, the hypothetical returns suggested by the above examples. Please read “Additional Risks—The price at which the notes may be sold prior to maturity will depend on a number of factors and may be substantially less than the amount for which they were originally purchased” beginning on page P-21 of this pricing supplement.

Payments on the notes are economically equivalent to the amounts that would be paid on a combination of other instruments. For example, payments on the notes are economically equivalent to a combination of a non-interest-bearing bond bought by the holder and one or more options entered into between the holder and us (with one or more implicit option premiums paid over time). The discussion in this paragraph does not modify or affect the terms of the notes or the U.S. federal income tax treatment of the notes, as described elsewhere in this pricing supplement.

We cannot predict the actual final basket level or what the market value of your notes will be on any particular trading day, nor can we predict the relationship between the level of each basket component and the market value of your notes at any time prior to the maturity date. The actual amount that you will receive at maturity and the rate of return on the offered notes will depend on the actual initial level of each basket component and the actual participation rate,

which we will set on the trade date, and the actual basket return determined by the calculation agent as described above. Moreover, the assumptions on which the hypothetical returns are based may turn out to be inaccurate. Consequently, the amount of cash to be paid in respect of your notes on the maturity date may be very different from the information reflected in the examples above.

## ADDITIONAL RISKS

An investment in the notes involves certain risks. In addition to the following risks included in this pricing supplement, we urge you to read “Additional Risk Factors Specific to the Notes” beginning on page PS-6 of the accompanying product prospectus supplement and “Risk Factors” beginning on page S-2 of the accompanying prospectus supplement and page 6 of the accompanying prospectus.

You should understand the risks of investing in the notes and should reach an investment decision only after careful consideration, with your advisors, of the suitability of the notes in light of your particular financial circumstances and the information set forth in this pricing supplement and the accompanying prospectus, accompanying prospectus supplement and accompanying product prospectus supplement.

The Bank’s initial estimated value of the notes at the time of pricing (when the terms of your notes are set on the trade date) will be lower than the original issue price of the notes

The Bank’s initial estimated value of the notes is only an estimate. The original issue price of the notes will exceed the Bank’s initial estimated value. The difference between the original issue price of the notes and the Bank’s initial estimated value reflects costs associated with selling and structuring the notes, as well as hedging its obligations under the notes with a third party.

Neither the Bank’s nor GS&Co.’s estimated value of the notes at any time is determined by reference to credit spreads or the borrowing rate the Bank would pay for its conventional fixed-rate debt securities

The Bank’s initial estimated value of the notes and GS&Co.’s estimated value of the notes at any time are determined by reference to the Bank’s internal funding rate. The internal funding rate used in the determination of the estimated value of the notes generally represents a discount from the credit spreads for the Bank’s conventional fixed-rate debt securities and the borrowing rate the Bank would pay for its conventional fixed-rate debt securities. This discount is based on, among other things, the Bank’s view of the funding value of the notes as well as the higher issuance, operational and ongoing liability management costs of the notes in comparison to those costs for the Bank’s conventional fixed-rate debt. If the interest rate implied by the credit spreads for the Bank’s conventional fixed-rate debt securities, or the borrowing rate the Bank would pay for its conventional fixed-rate debt securities were to be used, the Bank would expect the economic terms of the notes to be more favorable to you. Consequently, the use of an internal funding rate for the notes increases the estimated value of the notes at any time and has an adverse effect on the economic terms of the notes.

The Bank’s initial estimated value of the notes does not represent future values of the notes and may differ from others’ (including GS&Co.’s) estimates

The Bank’s initial estimated value of the notes is determined by reference to its internal pricing models when the terms of the notes are set. These pricing models consider certain factors, such as the Bank’s internal funding rate on the trade date, the expected term of the notes, market conditions and other relevant factors existing at that time, and the Bank’s assumptions about market parameters, which can include volatility, dividend rates, interest rates and other factors. Different pricing models and assumptions (including the pricing models and assumptions used by GS&Co.) could provide valuations for the notes that are different, and perhaps materially lower, from the Bank’s initial estimated value. Therefore, the price at which GS&Co. would buy or sell your notes (if GS&Co. makes a market, which it is not obligated to do) may be materially lower than the Bank’s initial estimated value. In addition, market conditions and other relevant factors in the future may change, and any assumptions may prove to be incorrect.

The price at which GS&Co. would buy or sell your notes (if GS&Co. makes a market, which it is not obligated to do) will be based on GS&Co.’s estimated value of your notes

GS&Co.’s estimated value of the notes is determined by reference to its pricing models and takes into account the Bank’s internal funding rate. The price at which GS&Co. would initially buy or sell your notes in the secondary market (if GS&Co. makes a market, which it is not obligated to do) exceeds GS&Co.’s estimated value of your notes at the time of pricing. As agreed by GS&Co. and the distribution participants, this excess (i.e., the additional amount described under “Additional Information Regarding Estimated Value of the Notes” above) will decline to zero on a straight line basis over the period from the trade date through the applicable date set forth above under “Additional Information Regarding Estimated Value of the Notes” above. Thereafter, if GS&Co. buys or sells your notes it will do so at prices that reflect the estimated value determined by reference to GS&Co.’s pricing models at that time. The price



at which GS&Co. will buy or sell your notes at any time also will reflect its then current bid and ask spread for similar sized trades of structured notes. If GS&Co. calculated its estimated value of your notes by reference to the Bank's credit spreads or the borrowing rate the Bank would pay for its conventional

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fixed-rate debt securities (as opposed to the Bank's internal funding rate), the price at which GS&Co. would buy or sell your notes (if GS&Co. makes a market, which it is not obligated to do) could be significantly lower.

GS&Co.'s pricing models consider certain variables, including principally the Bank's internal funding rate, interest rates (forecasted, current and historical rates), volatility, price-sensitivity analysis and the time to maturity of the notes. These pricing models are proprietary and rely in part on certain assumptions about future events, which may prove to be incorrect. As a result, the actual value you would receive if you sold your notes in the secondary market, if any, to others may differ, perhaps materially, from the estimated value of your notes determined by reference to GS&Co.'s models, taking into account the Bank's internal funding rate, due to, among other things, any differences in pricing models or assumptions used by others. See "The price at which the notes may be sold prior to maturity will depend on a number of factors and may be substantially less than the amount for which they were originally purchased" below.

In addition to the factors discussed above, the value and quoted price of your notes at any time will reflect many factors and cannot be predicted. If GS&Co. makes a market in the notes, the price quoted by GS&Co. would reflect any changes in market conditions and other relevant factors, including any deterioration in the Bank's creditworthiness or perceived creditworthiness. These changes may adversely affect the value of your notes, including the price you may receive for your notes in any market making transaction. To the extent that GS&Co. makes a market in the notes, the quoted price will reflect the estimated value determined by reference to GS&Co.'s pricing models at that time, plus or minus GS&Co.'s then current bid and ask spread for similar sized trades of structured notes (and subject to the declining excess amount described above).

Furthermore, if you sell your notes, you will likely be charged a commission for secondary market transactions, or the price will likely reflect a dealer discount. This commission or discount will further reduce the proceeds you would receive for your notes in a secondary market sale.

There is no assurance that GS&Co. or any other party will be willing to purchase your notes at any price and, in this regard, GS&Co. is not obligated to make a market in the notes. See "The notes lack liquidity" below.

You may not receive a positive return on your investment in the notes and may suffer a loss if you purchased your notes at a premium to the principal amount

You can lose a portion of your investment in the notes if you paid a premium to the principal amount when you purchased the notes. The cash payment on your notes on the maturity date will be based on the performance of a weighted basket comprised of the EURO STOXX 50<sup>®</sup> Index, TOPIX, the FTSE<sup>®</sup> 100 Index, the Swiss Market Index and the S&P/ASX 200 Index as measured from the initial basket level of 100 to the final basket level on the valuation date. If the final basket level for your notes is less than the initial basket level, you will realize no gain on your investment if you purchased the notes at the principal amount, and you will suffer a loss if you paid a premium to the principal amount when you purchased the notes.

Also, the market price of your notes prior to the maturity date may be significantly lower than the purchase price you pay for your notes. Consequently, if you sell your notes before the maturity date, you may receive far less than the amount of your investment in the notes.

The amount payable on your notes is not linked to the level of each basket component at any time other than on the valuation date (except in the case of tax redemptions)

The final basket level will be based on the closing levels of the basket components on the valuation date (subject to adjustment as described elsewhere in this pricing supplement). Therefore, if the closing levels of the basket components dropped precipitously on the valuation date, the payment at maturity for your notes may be significantly less than it would have been had the payment at maturity been linked to the closing levels of the basket components prior to such drop in the levels of the basket components. Although the actual levels of the basket components on the maturity date or at other times during the life of your notes may be higher than the closing levels of the basket components on the valuation date, you will not benefit from the closing levels of the basket components at any time other than on the valuation date (except in the case of tax redemptions as described further on page P-65).

The lower performance of one basket component may offset an increase in the other basket components. Declines in the level of one basket component may offset increases in the levels of the other basket components. As a result, any return on the basket, and thus on your notes, may be reduced or eliminated, which will have the effect of

reducing the amount payable in respect of your notes at maturity. In addition, because the basket components are not equally weighted, increases in the lower weighted basket components may be offset by even small decreases in the more heavily weighted basket components.

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Holding the notes is not the same as holding the component stocks

Holding the notes is not the same as holding the component stocks. For instance, neither you nor any other holder or owner of your notes will have any rights with respect to the component stocks, including voting rights, any right to receive dividends or other distributions, any rights to make a claim against the component stocks or any other rights of a holder of the component stocks. Your notes will be paid in cash and you will have no right to receive delivery of any component stocks.

The notes differ from conventional debt instruments

The notes are not conventional notes or debt instruments. The notes do not provide you with interest payments prior to maturity as a conventional fixed-rate or floating-rate debt security with the same maturity would. The return that you will receive on the notes may be less than the return you could earn on other investments. Even if your return is positive, your return may be less than the return you would earn if you bought a conventional senior interest bearing debt security of the Bank.

No interest

The notes will not bear interest and, accordingly, you will not receive any interest payments on the notes.

Your investment is subject to the credit risk of The Bank of Nova Scotia

The notes are senior unsecured debt obligations of the Bank, and are not, either directly or indirectly, an obligation of any third party. As further described in the accompanying prospectus, accompanying prospectus supplement and accompanying product prospectus supplement, the notes will rank on par with all of the other unsecured and unsubordinated debt obligations of the Bank, except such obligations as may be preferred by operation of law. Any payment to be made on the notes, including the payment at maturity, depends on the ability of the Bank to satisfy its obligations as they come due. As a result, the actual and perceived creditworthiness of the Bank may affect the market value of the notes and, in the event the Bank were to default on its obligations, you may not receive the amounts owed to you under the terms of the notes. If you sell the notes prior to maturity, you may receive substantially less than the principal amount of your notes.

There are potential conflicts of interest between you and the calculation agent

Scotia Capital, Inc., the calculation agent, is one of our affiliates. In performing its duties, the economic interests of the calculation agent are potentially adverse to your interests as an investor in the notes. The calculation agent is under no obligation to consider your interests as a holder of the notes in taking any actions that might affect the level of the basket components and the value of, and the amount payable on, the notes.

Investors should investigate the component stocks as if investing directly

Investors should conduct their own diligence of the component stocks as an investor would if it were directly investing in the component stocks. Neither we nor any of our affiliates have participated in the preparation of any publicly available information or made any "due diligence" investigation or inquiry with respect to the basket components or the component stocks. Furthermore, we cannot give any assurance that all events occurring prior to the original issue date have been properly disclosed. Subsequent disclosure of any such events or the disclosure or failure to disclose material future events concerning the component stocks could affect any payment at maturity. Investors should not conclude that the sale by the Bank of the notes is any form of investment recommendation by the Bank or any of its affiliates to invest in the component stocks.

The notes are subject to market risk

The return on the notes is directly linked to the performance of the basket, and the extent to which the basket return is positive or negative, and indirectly linked to the levels of the basket components and the prices of the component stocks. The levels of the basket can rise or fall sharply due to factors specific to the basket components and component stocks, as well as general market factors, such as general market volatility and levels, interest rates and economic and political conditions.

The participation rate applies only at maturity

You should be willing to hold your notes to maturity. If you are able to sell your notes prior to maturity in the secondary market, the price you receive will likely not reflect the full economic value of the participation rate or the notes themselves, and the return you realize may be less than the basket return multiplied by the participation rate even if such return is positive. You may receive the full benefit of the participation rate only if you hold your notes to

maturity.

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If the level of the basket changes, the market value of your notes may not change in the same manner. Your notes may trade quite differently from the performance of the basket. Changes in the level of the basket may not result in a comparable change in the market value of your notes. We discuss some of the reasons for this disparity under “—The price at which the notes may be sold prior to maturity will depend on a number of factors and may be substantially less than the amount for which they were originally purchased” below and under “Additional Risk Factors Specific to the Underlier-Linked Notes — The Market Value of Your Notes May Be Influenced by Many Unpredictable Factors” on page PS-6 of the accompanying product prospectus supplement.

There is no assurance that the investment view implicit in the notes will be successful.

It is impossible to predict with certainty whether and the extent to which the level of the basket will rise or fall. There can be no assurance that the level of the basket will rise above the initial basket level. The final basket level may be influenced by complex and interrelated political, economic, financial and other factors that affect the levels of the basket components (and the component stocks). You should be willing to accept the risks of the price performance of equity securities in general and the component stocks in particular and the risk of realizing no gain on your initial investment.

Furthermore, we cannot give you any assurance that the future performance of the level of the basket components (and the component stocks) will result in your receiving an amount greater than the principal amount of your notes. Certain periods of historical performance of the levels of the basket components (and the component stocks) would have resulted in you receiving no gain on the principal amount of your notes if you had owned notes with terms similar to these notes in the past. See “Information Regarding The Basket and Basket Components” in this pricing supplement for further information regarding the historical performance of the basket components.

Past hypothetical performance of the basket and past performance of the basket components should not be taken as an indication of the future performance of the level of the basket or the levels of the basket components.

The notes are directly linked to the performance of the basket and indirectly linked to the performance of the basket components (and component stocks), which is speculative and involves a high degree of risk. None of the Bank, the calculation agent or GS&Co., or any affiliate of the Bank, the calculation agent or GS&Co. gives any assurance as to the performance of the basket or the basket components. Investors should not conclude that the sale by the Bank of the notes is an investment recommendation by it or by any of the other entities mentioned above to invest in securities linked to the basket. Investors should consult with their own financial advisors as to whether an investment in the notes is appropriate for them. Past hypothetical performance of the basket and past performance of the basket components should not be taken as a guarantee or assurance of the future performance of the basket or basket components, and it is impossible to predict whether the basket or basket components will rise or fall during the term of the notes.

We may sell an additional aggregate principal amount of the notes at a different issue price.

We may decide to sell an additional aggregate principal amount of the notes subsequent to the date of the pricing supplement. The issue price of the notes in the subsequent sale may differ substantially (higher or lower) from the original issue price you paid as provided on the cover of this pricing supplement.

Changes affecting the basket components could have an adverse effect on the value of the notes.

The policies of each basket component sponsor concerning additions, deletions and substitutions of the component stocks and the manner in which each basket component sponsor takes account of certain changes affecting the component stocks of a particular basket component may adversely affect the closing level of the relevant basket component. The policies of each basket component sponsor with respect to the calculation of each basket component could also adversely affect the closing level of such basket component. Any of the basket component sponsors may discontinue or suspend calculation or dissemination of any of the basket components. Any such actions could have a material adverse effect on the value of the notes.

The basket components reflect price return, not total return.

The return on your notes is based on the performance of the basket, which reflects the changes in the market levels of the basket components, and the prices of their component stocks. It is not, however, linked to a “total return” index or strategy, which, in addition to reflecting those price returns, would also reflect dividends paid on the component stocks. The return on your notes will not include such a total return feature or dividend component.

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The basket return will not be adjusted for changes in exchange rates related to the U.S. dollar, which might affect a basket component whose component stocks are traded in currencies other than the U.S. dollar

Although the component stocks for the basket components are traded in currencies other than the U.S. dollar, the notes are denominated in U.S. dollars, and the calculation of the amount payable on the notes at maturity will not be adjusted for changes in the exchange rates between the U.S. dollar and any of the currencies in which such component stocks are denominated. Changes in exchange rates, however, may reflect changes in various non-U.S. economies that in turn may affect the levels of the basket components (and therefore the basket closing level) or basket return, as applicable, and therefore, the amount payable on your notes. The amount we pay in respect of the notes on the maturity date will be determined solely in accordance with the procedures described in “General Terms of the Notes” beginning on page PS-14 in the accompanying product prospectus supplement, as modified by this pricing supplement.

The Bank cannot control actions by the basket component sponsors and the basket component sponsors have no obligation to consider your interests

The Bank and its affiliates are not affiliated with the basket component sponsors and have no ability to control or predict their actions, including any errors in or discontinuation of public disclosure regarding methods or policies relating to the calculation of the basket components. The basket component sponsors are not involved in the notes offering in any way and have no obligation to consider your interest as an owner of the notes in taking any actions that might negatively affect the market value of your notes.

The notes are subject to non-U.S. securities market risk

Each of the basket components is subject to risks associated with non-U.S. securities markets, specifically the regions of the Eurozone, Japan, United Kingdom, Switzerland and Australia. An investment in notes linked directly or indirectly to the value of securities issued by non-U.S. companies involves particular risks.

Generally, non-U.S. securities markets may be more volatile than U.S. securities markets, and market developments may affect non-U.S. markets differently from U.S. securities markets. Direct or indirect government intervention to stabilize these non-U.S. markets, as well as cross shareholdings in non-U.S. companies, may affect trading prices and volumes in those markets. There is generally less publicly available information about non-U.S. companies than about those U.S. companies that are subject to the reporting requirements of the SEC, and non-U.S. companies are subject to accounting, auditing and financial reporting standards and requirements that differ from those applicable to U.S. reporting companies. Securities prices in non-U.S. countries are subject to political, economic, financial and social factors that may be unique to the particular country. These factors, which could negatively affect the non-U.S. securities markets, include the possibility of recent or future changes in the non-U.S. government’s economic and fiscal policies, the possible imposition of, or changes in, currency exchange laws or other non-U.S. laws or restrictions applicable to non-U.S. companies or investments in non-U.S. equity securities and the possibility of fluctuations in the rate of exchange between currencies. The United Kingdom has voted to leave the European Union (popularly known as “Brexit”). The effect of Brexit is uncertain, and Brexit has and may continue to contribute to volatility in the prices of securities of companies located in Europe and currency exchange rates, including the valuation of the euro and British pound in particular. Moreover, certain aspects of a particular non-U.S. economy may differ favorably or unfavorably from the U.S. economy in important respects, such as growth of gross national product, rate of inflation, capital reinvestment, resources and self-sufficiency.

The Eurozone financial crisis could negatively impact investors in the notes

A number of countries in the Eurozone are undergoing a financial crisis affecting their economies, their ability to meet their sovereign financial obligations, and their financial institutions. Countries in the Eurozone that are not currently experiencing a financial crisis may do so in the future as a result of developments in other Eurozone countries. The economic, political, legal and regulatory ramifications of this financial crisis, including any legal or regulatory changes made in response to the crisis, are impossible to predict. During the crisis, the USD/EUR exchange rate may be significantly more volatile than it has been in the past (as may the exchange rate between the euro and other currencies). In response to this crisis, governments and regulatory bodies have taken, and may in the future take, extraordinary measures to intervene in the currency markets for the euro and the economies and financial institutions of the Eurozone. Increased volatility caused by the crisis and any economic, political, legal or regulatory changes



made to address, or otherwise resulting from, the crisis and any intervention in the currency markets or Eurozone economies could have an adverse effect on the USD/EUR exchange rate or the exchange rate between the euro and other currencies. There is also a possibility that one or more Eurozone countries may cease to use the euro, which could also adversely affect the exchange rate between the euro and other currencies and potentially the convertibility of the euro in such countries. There is also the possibility that the euro may cease to exist or the USD/EUR

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exchange rate may otherwise become unavailable. If these events were to happen, the closing levels of the basket components, and the value of the notes, could be adversely affected.

If you purchase your notes at a premium to the principal amount, the return on your investment will be lower than the return on notes purchased at the principal amount and the impact of certain key terms of the notes will be negatively affected

The payment at maturity will not be adjusted based on the original issue price you pay for the notes. If you purchase notes at a price that differs from the principal amount of the notes, then the return on your investment in such notes held to the maturity date will differ from, and may be substantially less than, the return on notes purchased at the principal amount. If you purchase your notes at a premium to the principal amount and hold them to the maturity date, the return on your investment in the notes will be lower than it would have been had you purchased the notes at the principal amount or a discount to the principal amount.

The price at which the notes may be sold prior to maturity will depend on a number of factors and may be substantially less than the amount for which they were originally purchased

The price at which the notes may be sold prior to maturity will depend on a number of factors. Some of these factors include, but are not limited to: (i) actual or anticipated changes in the level of the basket (and the levels of the basket components) over the full term of the notes, (ii) correlation among the basket components, (iii) changes in interest rates generally, (iv) any actual or anticipated changes in our credit ratings or credit spreads and (v) time remaining to maturity. In particular, because the provisions of the notes relating to the payment at maturity behave like options, the value of the notes will vary in ways which are non-linear and may not be intuitive.

Depending on the actual or anticipated level of the basket (and therefore the levels of the basket components) and other relevant factors, the market value of the notes may decrease and you may receive substantially less than 100% of the issue price if you sell your notes prior to maturity even if the percentage change in the level of the basket at such time is positive.

See “Additional Risk Factors Specific to the Notes—The Market Value of Your Notes May Be Influenced by Many Unpredictable Factors” beginning on page PS-6 of the accompanying product prospectus supplement.

The notes lack liquidity

The notes will not be listed on any securities exchange or automated quotation system. Therefore, there may be little or no secondary market for the notes. SCUSA, any other affiliates of The Bank of Nova Scotia and GS&Co. may, but are not obligated to, make a market in the notes. Even if there is a secondary market, it may not provide enough liquidity to allow you to trade or sell the notes easily. Because we do not expect that other broker-dealers will participate significantly in the 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 SCUSA and GS&Co. are willing to purchase the notes from you. If at any time SCUSA and GS&Co. were not to make a market in the notes, it is likely that there would be no secondary market for the notes. Accordingly, you should be willing to hold your notes to maturity.

Hedging activities by the Bank and GS&Co. may negatively impact investors in the notes and cause our respective interests and those of our clients and counterparties to be contrary to those of investors in the notes

The Bank, GS&Co. or one or more of our or their respective affiliates has hedged or expects to hedge the obligations under the notes by purchasing futures and/or other instruments linked to the basket components. The Bank, GS&Co. or one or more of our or their respective affiliates also expects to adjust the hedge by, among other things, purchasing or selling any of the foregoing, and perhaps other instruments linked to the basket components and/or one or more of the component stocks, at any time and from time to time, and to unwind the hedge by selling any of the foregoing on or before the valuation date.

The Bank, GS&Co. or one or more of our or their respective affiliates may also enter into, adjust and unwind hedging transactions relating to other basket- or index-linked notes whose returns are linked to changes in the level or price of the basket components or the component stocks. Any of these hedging activities may adversely affect the level of the basket components — directly or indirectly by affecting the price of the component stocks — and therefore the market value of the notes and the amount you will receive on the notes. Because the dealer, or an affiliate, from which you purchase notes is to conduct hedging activities for us in connection with the notes, that dealer, or an affiliate, may profit in connection with such hedging activities and such profit, if any, will be in addition to the compensation that

the dealer receives for the sale of the notes to you. You should be aware that the potential to earn fees in connection with hedging activities may create a further incentive for the dealer to sell the notes to you in addition to the compensation they would receive for the sale of the notes. In addition, you should expect that these transactions will cause the Bank, GS&Co. or our or their respective affiliates, or our or their respective clients or counterparties, to have economic interests and incentives that do not align with, and that may be directly contrary to, those of an investor in the notes. The Bank, GS&Co. and our and their respective affiliates will have no

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respective obligation to take, refrain from taking or cease taking any action with respect to these transactions based on the potential effect on an investor in the notes, and may receive substantial returns with respect to these hedging activities while the value of the notes may decline.

The Bank, SCUSA, GS&Co. and our and their respective affiliates regularly provide services to, or otherwise have business relationships with, a broad client base, which has included and may include us and the issuers of the component stocks and the market activities by the Bank, GS&Co. or our or their respective affiliates for our own account or for our clients could negatively impact investors in the notes

We, GS&Co. and our and their respective affiliates regularly provide a wide range of financial services, including financial advisory, investment advisory and transactional services to a substantial and diversified client base. As such, we each may act as an investor, investment banker, research provider, investment manager, investment advisor, market maker, trader, prime broker or lender. In those and other capacities, we, GS&Co. and/or our or their respective affiliates purchase, sell or hold a broad array of investments, actively trade securities (including the notes or other securities that we have issued), the component stocks, derivatives, loans, credit default swaps, indices, baskets and other financial instruments and products for our own accounts or for the accounts of our customers, and will have other direct or indirect interests, in those securities and in other markets that may not be consistent with your interests and may adversely affect the level of the basket components, and/or the value of the notes. You should assume that we or they will, at present or in the future, provide such services or otherwise engage in transactions with, among others, us and the issuers of the component stocks, or transact in securities or instruments or with parties that are directly or indirectly related to these entities. These services could include making loans to or equity investments in those companies, providing financial advisory or other investment banking services, or issuing research reports. Any of these financial market activities may, individually or in the aggregate, have an adverse effect on the level of the basket components and the market for your notes, and you should expect that our interests and those of GS&Co. and/or our or their respective affiliates, clients or counterparties, will at times be adverse to those of investors in the notes.

You should expect that we, GS&Co., and our and their respective affiliates, in providing these services, engaging in such transactions, or acting for our own accounts, may take actions that have direct or indirect effects on the notes or other securities that we may issue, the component stocks or other securities or instruments similar to or linked to the foregoing, and that such actions could be adverse to the interests of investors in the notes. In addition, in connection with these activities, certain personnel within us, GS&Co. or our or their respective affiliates may have access to confidential material non-public information about these parties that would not be disclosed to investors in the notes. We, GS&Co. and our and their respective affiliates regularly offer a wide array of securities, financial instruments and other products into the marketplace, including existing or new products that are similar to the notes or other securities that we may issue, the component stocks or other securities or instruments similar to or linked to the foregoing. Investors in the notes should expect that the Bank, GS&Co. and our and their respective affiliates offer securities, financial instruments, and other products that may compete with the notes for liquidity or otherwise.

Other investors in the notes may not have the same interests as you

The interests of other investors may, in some circumstances, be adverse to your interests. Other investors may make requests or recommendations to us or GS&Co. regarding the establishment of transactions on terms that are adverse to your interests, and investors in the notes are not required to take into account the interests of any other investor in exercising remedies, voting or other rights in their capacity as noteholders. Further, other investors may enter into market transactions with respect to the notes, assets that are the same or similar to the notes, assets referenced by the notes (such as stocks or stock indices) or other similar assets or securities which may adversely impact the market for or value of your notes. For example, an investor could take a short position (directly or indirectly through derivative transactions) in respect of securities similar to your notes or in respect of the basket components.

The calculation agent can postpone the valuation date for the notes if a market disruption event with respect to any of the basket components occurs

If the calculation agent determines, in its sole discretion, that, on a day that would otherwise be the valuation date, a market disruption event with respect to a basket component has occurred or is continuing, the valuation date for the affected basket component will be postponed until the first following trading day on which no market disruption event occurs or is continuing, although the valuation date will not be postponed by more than seven scheduled trading days. Moreover, if the valuation date is postponed to the last possible day, but a market disruption event occurs or is continuing on that day, that day will nevertheless be the valuation date, and the calculation agent will determine the applicable final level that must be used to determine the payment at maturity. See “General Terms of the Notes — Unavailability of the Level of the Reference Asset on a Valuation Date” beginning on page PS-19 and “General Terms of the Notes — Market Disruption Events” beginning on page PS-20 in the accompanying product prospectus supplement.

There is no affiliation between the issuers of any component stock or any basket component sponsor and us or GS&Co.

The Bank, SCUSA, GS&Co. and their respective affiliates may currently, or from time to time in the future, engage in business with the issuers of the component stocks. Neither we nor any of our affiliates have participated in the preparation of any publicly available information or made any “due diligence” investigation or inquiry with respect to the basket components or the component stocks. Before investing in the notes you should make your own investigation into the basket components and the issuers of the component stocks. See the section below entitled “Information Regarding the Basket Components” in this pricing supplement for additional information about the basket components.

Your notes will be treated as debt instruments subject to special rules governing contingent payment debt instruments for U.S. federal income tax purposes

The notes will be treated as a contingent payment debt instruments ("CPDI") subject to taxation under the "noncontingent bond method." If you are a U.S. holder, you generally will be required to pay taxes on ordinary income from the notes over their term based on the comparable yield for the notes, even though you will not receive any payments from us until maturity. This comparable yield is determined solely to calculate the amount on which you will be taxed prior to maturity and is neither a prediction nor a guarantee of what the actual yield will be. In addition, any gain you may recognize on the taxable disposition of the notes will be taxed as OID. If you are a secondary purchaser of the notes, the tax consequences to you may be different. Please see "Material U.S. Federal Income Tax Considerations" below for a more detailed discussion. Prospective investors should consult their tax advisor with respect to the application of the CPDI provisions and any other applicable tax consequences to you of owning your notes in your particular circumstances.

Uncertain tax treatment

Significant aspects of the tax treatment of the notes are uncertain. You should consult your tax advisor about your tax situation. See "Material Canadian Income Tax Consequences" and "Material U.S. Federal Income Tax Considerations" in this pricing supplement.

## INFORMATION REGARDING THE BASKET AND THE BASKET COMPONENTS

### The Basket

The basket is comprised of five basket components with the following initial weights within the basket: the EURO STOXX 50<sup>®</sup> Index (36.00% weighting), the TOPIX (27.00% weighting), the FTSE<sup>®</sup> 100 Index (20.00% weighting), the Swiss Market Index (9.00% weighting) and the S&P/ASX 200 Index (8.00% weighting).

### HYPOTHETICAL HISTORICAL BASKET LEVELS

Because the basket is a newly created basket and its level will begin to be calculated only on the trade date, there is no actual historical information about the basket closing levels as of the date of this pricing supplement. Therefore, the hypothetical basket closing levels of the basket below are calculated based on publicly available information for each basket component as reported by Bloomberg Professional<sup>®</sup> service (“Bloomberg”), without independent verification. The hypothetical basket closing levels have fluctuated in the past and may, in the future, experience significant fluctuations. Any hypothetical historical upward or downward trend in the basket closing level during any period shown below is not an indication that the basket is more or less likely to increase or decrease at any time during the life of your notes.

The graph below illustrates the hypothetical performance of the basket from January 1, 2014 through October 29, 2018, based on the daily closing levels of the basket components. Past hypothetical performance of the basket is not indicative of the future performance of the basket.

## EURO STOXX 50® Index (“SX5E”)

The SX5E is a free-float market capitalization-weighted index of 50 European blue-chip stocks. The 50 stocks included in the SX5E trade in euros, and are allocated based on their country of incorporation, primary listing and largest trading volume, to one of the following countries: Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain, which we refer to collectively as the Eurozone. Companies allocated to a Eurozone country but not traded in Euros are not eligible for inclusion in the SX5E. The SX5E was created by and is sponsored and maintained by STOXX Limited. Publication of the SX5E began on February 26, 1998, based on an initial index value of 1,000 at December 31, 1991. The level of the SX5E is disseminated on the STOXX Limited website. STOXX Limited is under no obligation to continue to publish the SX5E and may discontinue publication of it at any time. Additional information regarding the SX5E may be obtained from the STOXX Limited website: [stox.com](http://stox.com). We are not incorporating by reference the website or any material it includes in this pricing supplement.

The top ten constituent stocks of the SX5E as of September 28, 2018, by weight, are: Total S.A. (6.21%), SAP SE (4.78%), Siemens AG (3.92%), Sanofi (3.62%), Allianz SE (3.45%), LVMH Moët Hennessy Louis Vuitton SE (3.40%), Unilever N.V. (3.03%), Bayer AG (2.98%), BASF SE (2.94%) and Banco Santander S.A. (2.92%); constituent weights may be found at [stox.com/download/indices/factsheets/SX5GT.pdf](http://stox.com/download/indices/factsheets/SX5GT.pdf) under “Factsheets and Methodologies” and are updated periodically.

As of September 28, 2018, the top ten industry sectors which comprise the SX5E represent the following weights in the index: Banks (11.6%), Chemicals (6.4%), Food & Beverage (4.5%), Health Care (10.4%), Industrial Goods & Services (11.1%), Insurance (6.6%), Oil & Gas (7.9%), Personal & Household Goods (10.1%), Technology (10.3%) and Telecommunications (4.4%); industry weightings may be found at [stox.com/download/indices/factsheets/SX5GT.pdf](http://stox.com/download/indices/factsheets/SX5GT.pdf) under “Factsheets and Methodologies” and are updated periodically. Percentages may not sum to 100% due to rounding. Sector designations are determined by the basket component 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 sponsors may reflect differences in methodology as well as actual differences in the sector composition of the indices.

As of September 28, 2018, the eight countries which comprise the SX5E represent the following weights in the index: Belgium (2.7%), Finland (1.1%), France (39.5%), Germany (30.7%), Ireland (1.0%), Italy (4.7%), Netherlands (10.3%) and Spain (10.0%); country weightings may be found at [stox.com/download/indices/factsheets/SX5GT.pdf](http://stox.com/download/indices/factsheets/SX5GT.pdf) and are updated periodically.

### SX5E Composition.

The SX5E is composed of 50 component stocks chosen by STOXX Limited from the 19 EURO STOXX Supersector indices, which represent the Eurozone portion of the STOXX Europe 600 Supersector indices. The 19 supersectors from which stocks are selected for the SX5E are Automobiles & Parts, Banks, Basic Resources, Chemicals, Construction & Materials, Financial Services, Food & Beverages, Health Care, Industrial Goods & Services, Insurance, Media, Oil & Gas, Personal & Household Goods, Real Estate, Retail, Technology, Telecommunications, Travel & Leisure and Utilities, although stocks from each of these supersectors are not necessarily included at a given time.

### Component Selection

The composition of the SX5E is reviewed by STOXX Limited annually in September. Within each of the 19 EURO STOXX Supersector indices, the respective 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 highest—ranked stock brings the coverage closer to 60% in absolute terms, then it is also added to the selection list. All remaining stocks that are current SX5E components are then added to the selection list. The stocks on the selection list are then ranked by free—float market capitalization. The 40 largest stocks on the selection list are chosen as index components. The remaining 10 stocks are then selected from the largest current stocks ranked between 41 and 60. If

the number of index components is still below 50, then the largest remaining stocks on the selection list are added until the SX5E contains 50 stocks. In exceptional cases, the STOXX Limited Management Board may make additions and deletions to the selection list.

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#### Ongoing Maintenance of Component Stocks

The component stocks of the SX5E are monitored on an ongoing monthly basis for deletion and quarterly basis for addition. Changes to the composition of the SX5E due to corporate actions (including mergers and takeovers, spin—offs, sector changes and bankruptcy) are announced immediately, implemented two trading days later and become effective on the next trading day after implementation.

The component stocks of the SX5E are subject to a “fast exit” rule. A component stock is deleted if it ranks 75 or below on the monthly selection list and it ranked 75 or below on the selection list of the previous month. The highest-ranked non-component stock will replace the existing component stock. The SX5E is also subject to a “fast entry” rule. All stocks on the latest selection lists and initial public offering (IPO) stocks are reviewed for a fast-track addition on a quarterly basis. A stock is added if it qualifies for the latest blue-chip selection list generated at the end of February, May, August or November and if it ranks within the lower buffer (between 1 and 25) on the selection list. If added, the stock replaces the smallest component stock.

A deleted stock is replaced immediately to maintain the fixed number of stocks. The replacement is based on the latest monthly selection list. In the case of a merger or takeover where a component stock is involved, the original component stock is replaced by the new component stock. In the case of a spin-off, if the original stock was a component stock, then each spin-off stock qualifies for addition if it lies within the lower buffer (between 1 and 40) on the latest selection list. The largest qualifying spin-off stock replaces the original component stock, while the next qualifying spin-off stock replaces the lowest ranked component stock and likewise for other qualifying spin-off stocks.

The free float factors and outstanding number of shares for each component stock that STOXX Limited uses to calculate the SX5E, as described below, are reviewed, calculated and implemented on a quarterly basis and are fixed until the next quarterly review. Certain extraordinary adjustments to the free float factors and/or the number of outstanding shares are implemented and made effective more quickly. The timing depends on the magnitude of the change. Each component’s weight is capped at 10% of the SX5E’s total free float market capitalization. The free float factor reduces the component stock’s number of shares to the actual amount available on the market. All holdings that are larger than five percent of the total outstanding number of shares and held on a long-term basis are excluded from the index calculation (including, but not limited to, stock owned by the company itself, stock owned by governments, stock owned by certain individuals or families, and restricted shares).

#### Index Calculation

STOXX Limited calculates the SX5E using the “Laspeyres formula,” which measures the aggregate price changes in the component stocks against a fixed base quantity weight. The discussion below describes the “price return” calculation of the SX5E. The formula for calculating the SX5E value can be expressed as follows:

$$\text{SX5E} = \frac{\text{Free Float Market Capitalization of the SX5E}}{\text{Divisor}}$$

The “free float market capitalization of the SX5E” is equal to the sum of the product of the price, the number of shares, the free float factor and the weighting cap factor for each component stock as of the time the SX5E is being calculated. The component stocks trade in Euros and thus, no currency conversion is required. Where any component stock price is unavailable on any trading day, the basket component sponsor will generally use the last reported price for such component stock.

In case the investability and tradability of the index and index based products is affected by an upcoming market or company event that is considered significant or “extreme” by the STOXX Management Board, the following actions or a combination of the following actions are taken. For all such changes a minimum notification period of two full trading days will be observed. The action scope may include but is not limited to:

- application of expert judgment for index component pricing data,
- adjustment of operational procedures,
- postponement of index adjustments,
- adjustment of selection lists,



change of weights of index constituents by adjusting the number of shares, free-float factors or weighting cap-factors, or

· adjustment of index compositions.

#### EURO STOXX 50 Divisor

The SX5E is calculated using a divisor that helps to maintain the continuity of the index's value so that corporate actions do not artificially increase or decrease the level of the SX5E.

The divisor is calculated by starting with the previous divisor in effect for the SX5E (which we call the "original divisor value") and multiplying it by a fraction, the numerator of which is the previous free float market capitalization of the SX5E, plus or minus the difference between the closing market capitalization of the SX5E and the adjusted closing market capitalization of the SX5E, and the denominator of which is the previous free float market capitalization of the SX5E. The adjusted free float market capitalization is calculated for stocks of companies that have experienced a corporate action of the type described below as of the time the new divisor value is being calculated using the free float market capitalization calculated with adjusted closing prices, the new number of shares, and the new free float factor minus the free float market capitalization calculated with that stock's original closing price, number of shares, and free float factor, in each case as used in calculating the original divisor value. Errors in divisor calculation are corrected on an intraday basis if discovered on the same day the new divisor is effective. If the error is discovered later, the error is corrected on an intraday basis if feasible and only if the error is considered significant by the STOXX Limited Management Board.

#### Divisor Adjustments

STOXX Limited adjusts the divisor for the SX5E to maintain the continuity of the SX5E values across changes due to corporate actions. Changes in weights due to corporate actions are distributed proportionally across all index components and equal an investment into the portfolio. The following is a summary of the adjustments to any component stock made for corporate actions and the effect of such adjustments on the divisor, where shareholders of the component stock will receive "B" new shares for every "A" share held (where applicable) and assuming that the version of the index to which your notes are linked is the price return version. All adjusted prices consider withholding taxes based on the new shares being distributed, using "B \* (1 - withholding tax where applicable)".

(1) Special cash dividend:

Adjusted price = closing price – dividend announced by the company \* (1- withholding tax if applicable)

Divisor: decreases

(2) Split and reverse split:

Adjusted price = closing price \* A / B

New number of shares = old number of shares \* B / A

Divisor: no change

(3) Rights offering:

Adjusted price = (closing price \* A + subscription price \* B) / (A + B)

New number of shares = old number of shares \* (A + B) / A

Divisor: increases

If the subscription price is not available or if the subscription price is equal to or greater than the closing price on the day before the effective date, then no adjustment is made.

Extremely dilutive rights issues having a share ratio larger or equal to 2000% ( $B/A \geq 20$ ) are treated as follows:

STOXX Limited will announce the deletion of the company from the index following the standard rules for index replacements if sufficient notice of two trading days before the ex-date can be given.

The company may enter the index again at the next periodic index review, but only after the new rights issue shares have been listed.

Extremely dilutive rights issues for which two trading days' notice before the ex-date cannot be given, and all highly dilutive rights issues having a share ratio larger or equal to 200% ( $B/A > 2$ ) are treated as follows:

The rights issue shares are included into the index with a theoretical price on the ex-date;

The rights issue shares must be listed on an eligible stock exchange and tradable starting on the ex-date, otherwise, only a price adjustment is made and the rights are not included;

The rights issue shares will have the same parameters as the parent company;

The rights issue shares will be removed at the close of the day they start to trade with traded price being available; and

The number of shares and weighting factors will be increased after the new rights issue shares have been listed.

(4) Stock dividend:

Adjusted price = closing price \*  $A / (A + B)$

New number of shares = old number of shares \*  $(A + B) / A$

Divisor: no change

(5) Stock dividend from treasury stock if treated as extraordinary dividend:

Adjusted close = close – close \*  $B / (A + B)$

Divisor: decreases

(6) Stock dividend of another company:

Adjusted price = (closing price \*  $A -$  price of other company \*  $B) / A$

Divisor: decreases

(7) Return of capital and share consolidation:

Adjusted price = [closing price – capital return announced by company \*  $(1 -$  withholding tax)] \*  $A / B$

New number of shares = old number of shares \*  $B / A$

Divisor: decreases

(8) Repurchase of shares / self-tender:

Adjusted price = [(price before tender \* old number of shares) – (tender price \* number of tendered shares)] / (old number of shares – number of tendered shares)

New number of shares = old number of shares – number of tendered shares

Divisor: decreases

(9) Spin-off:

Adjusted price = (closing price \*  $A -$  price of spin-off shares \*  $B) / A$

Divisor: decreases

(10) Combination stock distribution (dividend or split) and rights offering:

For this corporate action, the following additional assumptions apply:

Shareholders receive B new shares from the distribution and C new shares from the rights offering for every A share held; and

If A is not equal to one, all the following “new number of shares” formulae need to be divided by A.

If rights are applicable after stock distribution (one action applicable to another):

Adjusted price =  $[\text{closing price} * A + \text{subscription price} * C * (1 + B / A)] / [(A + B) * (1 + C / A)]$

New number of shares =  $\text{old number of shares} * [(A + B) * (1 + C / A)] / A$

Divisor: increases

If stock distribution is applicable after rights (one action applicable to another):

Adjusted price =  $(\text{closing price} * A + \text{subscription price} * C) / [(A + C) * (1 + B / A)]$

New number of shares =  $\text{old number of shares} * [(A + C) * (1 + B / A)]$

Divisor: increases

Stock distribution and rights (neither action is applicable to the other):

Adjusted price =  $(\text{closing price} * A + \text{subscription price} * C) / (A + B + C)$

New number of shares =  $\text{old number of shares} * (A + B + C) / A$

Divisor: increases

(11) Addition/deletion of a company

No price adjustments are made. The net change in market capitalization determines the divisor adjustment.

(12) Free float and shares changes

No price adjustments are made. The net change in market capitalization determines the divisor adjustment.

The SX5E is the intellectual property of STOXX Limited, Zurich, Switzerland and/or its licensors ("Licensors"), which is used under license. The notes or other financial instruments based on the SX5E are in no way sponsored, endorsed, sold or promoted by STOXX and its Licensors and neither STOXX nor its Licensors shall have any liability with respect thereto.

#### License Agreement

The Bank has entered into a non-exclusive license agreement with STOXX, which grants the Bank a license in exchange for a fee to use the Index in connection with the issuance of certain securities, including the notes.

STOXX, Deutsche Börse Group and their licensors, research partners or data providers have no relationship to the Bank, other than the licensing of the Index and the related trademarks for use in connection with the notes.

STOXX, Deutsche Börse Group and their licensors, research partners or data providers do not:

- sponsor, endorse, sell or promote the notes;
- recommend that any person invest in the notes or any other financial products;
- have any responsibility or liability for or make any decisions about the timing, amount or pricing of the notes;
- have any responsibility or liability for the administration, management or marketing of the notes; and
- consider the needs of the notes or the owners of the notes in determining, composing or calculating the Index or have any obligation to do so.

STOXX Deutsche Börse Group and their licensors, research partners or data providers give no warranty, and exclude any liability (whether in negligence or otherwise) in connection with the notes or their performance. STOXX does not assume any contractual relationship with the purchasers of the notes or any third parties.

Specifically,

The Sponsor, Deutsche Börse Group and their licensors, research partners or data providers do not make any warranty, express or implied, and disclaim any and all warranty about:

the results to be obtained by the notes, the owner of the notes or any other person in connection with the use of the

Index and the data included in the Index;

the accuracy, timeliness, and completeness of the Index or its data;

the merchantability and the fitness for a particular purpose or use of the Index or its data; and

the performance of the notes generally

STOXX, Deutsche Börse Group and their licensors, research partners or data providers give no warranty and exclude any

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the notes, even in circumstances where the Sponsor Deutsche Börse Group and their licensors, research partners or

data providers are aware that such loss or damage may occur.

The licensing agreement between the Bank and STOXX is solely for their benefit, and not for the benefit of the owners of the notes or any other third parties.

## Historical High, Low and Closing Levels of the Basket Component

The level of the basket component has fluctuated in the past and may, in the future, experience significant fluctuations. Any historical upward or downward trend in the level of the basket component during any period shown below is not an indication that the basket component is more or less likely to increase or decrease at any time during the life of your notes.

The following table sets forth the quarterly high and low closing levels for the basket component, based on the daily closing level as reported by Bloomberg without independent verification. The level of the basket component on October 29, 2018 was 3,154.93. Past performance of the basket component is not indicative of the future performance of the basket component.

Quarter Begin	Quarter End	Quarterly Closing High	Quarterly Closing Low	Quarterly Close
1/1/2012	3/31/2012	2,608.42	2,286.45	2,477.28
4/1/2012	6/30/2012	2,501.18	2,068.66	2,264.72
7/1/2012	9/30/2012	2,594.56	2,151.54	2,454.26
10/1/2012	12/31/2012	2,659.95	2,427.32	2,635.93
1/1/2013	3/31/2013	2,749.27	2,570.52	2,624.02
4/1/2013	6/30/2013	2,835.87	2,511.83	2,602.59
7/1/2013	9/30/2013	2,936.20	2,570.76	2,893.15
10/1/2013	12/31/2013	3,111.37	2,902.12	3,109.00
1/1/2014	3/31/2014	3,172.43	2,962.49	3,161.60
4/1/2014	6/30/2014	3,314.80	3,091.52	3,228.24
7/1/2014	9/30/2014	3,289.75	3,006.83	3,225.93
10/1/2014	12/31/2014	3,277.38	2,874.65	3,146.43
1/1/2015	3/31/2015	3,731.35	3,007.91	3,697.38
4/1/2015	6/30/2015	3,828.78	3,424.30	3,424.30
7/1/2015	9/30/2015	3,686.58	3,019.34	3,100.67
10/1/2015	12/31/2015	3,506.45	3,069.05	3,267.52
1/1/2016	3/31/2016	3,178.01	2,680.35	3,004.93
4/1/2016	6/30/2016	3,151.69	2,697.44	2,864.74
7/1/2016	9/30/2016	3,091.66	2,761.37	3,002.24
10/1/2016	12/31/2016	3,290.52	2,954.53	3,290.52
1/1/2017	3/31/2017	3,500.93	3,230.68	3,500.93
4/1/2017	6/30/2017	3,658.79	3,409.78	3,441.88
7/1/2017	9/30/2017	3,594.85	3,388.22	3,594.85
10/1/2017	12/31/2017	3,697.40	3,503.96	3,503.96
1/1/2018	3/31/2018	3,672.29	3,278.72	3,361.50
4/1/2018	6/30/2018	3,592.18	3,340.35	3,395.60
7/1/2018	9/30/2018	3,527.18	3,293.36	3,399.20
10/1/2018*	10/29/2018*	3,414.16	3,130.33	3,154.93

\* As of the date of this pricing supplement, available information for the fourth calendar quarter of 2018 includes data for the period from October 1, 2018 through October 29, 2018. Accordingly, the “Quarterly Closing High,” “Quarterly Closing Low” and “Quarterly Close” data indicated are for this shortened period only and do not reflect complete data for the fourth calendar quarter of 2018.

The graph below illustrates the performance of the basket component from January 1, 2008 through October 29, 2018, based on information from Bloomberg. Past performance of the basket component is not indicative of the future performance of the basket component.

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## The TOPIX Index® (“TPX”)

TPX, also known as the Tokyo Stock Price Index, is a capitalization weighted index of all the domestic common stocks listed on the First Section of the Tokyo Stock Exchange, Inc., which we refer to as the TSE. Domestic stocks admitted to the TSE are assigned either to the TSE First Section Index, the TSE Second Section Index or the TSE Mothers Index. Stocks listed in the First Section, which number approximately 1,700, are among the most actively traded stocks on the TSE. TPX is supplemented by the sub-basket components of the 33 industry sectors and was developed with a base index value of 100 as of January 4, 1968. TPX is calculated and published by TSE. Additional information about TPX is available on the following website: [jpx.co.jp/english/markets/indices/topix](http://jpx.co.jp/english/markets/indices/topix). We are not incorporating by reference the website or any material it includes in this pricing supplement.

## TPX

## Basket Component Stock Weighting by Sector as of September 28, 2018

Sector:	Percentage (%)
Air Transportation	0.56%
Banks	6.76%
Chemicals	7.53%
Construction	2.84%
Electric Appliances	13.26%
Electric Power and Gas	1.74%
Fishery, Agriculture and Forestry	0.11%
Foods	4.01%
Glass and Ceramics Products	0.97%
Information & Communication	8.06%
Insurance	2.41%
Iron and Steel	1.08%
Land Transportation	4.29%
Machinery	5.23%
Marine Transportation	0.20%
Metal Products	0.60%
Mining	0.33%
Nonferrous Metals	0.82%
Oil and Coal Products	0.88%
Other Financing Business	1.18%
Other Products	2.14%
Pharmaceutical	5.12%
Precision Instruments	1.78%
Pulp and Paper	0.29%
Real Estate	2.30%
Retail Trade	4.92%
Rubber Products	0.73%
Securities and Commodities Futures	0.92%
Services	4.73%
Textiles and Apparels	0.61%
Transportation Equipment	8.47%
Warehousing and Harbor Transportation Service	0.19%
Wholesale Trade	4.91%

\* Sector designations are determined by the basket component 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.

\*\* Information provided by TSE. Percentages may not sum to 100% due to rounding.

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### TPX Composition and Maintenance

TPX is comprised of all domestic common stocks listed on the TSE First Section, excluding certain types of securities such as subscription warrant securities and preferred equity contribution securities. Companies scheduled to be delisted or newly listed companies that are still in the waiting period are excluded from the indices. TPX has no constituent review. The number of constituents will change according to new listings and delistings. The reasons for stock additions and deletions to the TSE First Section are described further below.

### TPX Calculation

TPX is a free-float-adjusted market-capitalization-weighted index, which reflects movements in the market capitalization as measured from a base index value of 100 set on the base date of January 4, 1968.

TSE calculates TPX by multiplying the base index value of 100 by the quotient of the current free-float-adjusted market value divided by the base market value. The resulting value is not expressed in Japanese yen but presented as a number of points, rounded to the nearest one hundredth. The formula for calculating TPX value can be expressed as follows:

$$\text{Index value} = \frac{\text{Current free-float - adjusted market value}}{\text{Base market value}} \times \text{Base index value of 100}$$

Index value = Base index value of 100 x  $\frac{\text{Current free-float - adjusted market value}}{\text{Base market value}}$

The current free-float-adjusted market value is the sum of the products of the price times the number of free-float-adjusted shares for each constituent stock.

The number of free-float-adjusted shares for this calculation is the total number of listed shares multiplied by free-float weight. The total number of listed shares used for this purpose is usually the same as the number of actual listed shares. However, in some cases these numbers will differ as a consequence of the index methodology. For instance, in the case of a stock split, the number of listed shares will increase on the additional listing date after the stock split becomes effective; on the other hand, the number of listed shares for index calculation purposes will increase on the ex- rights date.

Free-float weight is the weight of listed shares deemed to be available for trading in the market, and is determined and calculated by the TSE for each constituent stock. It is calculated by subtracting the quotient of non-free-float shares divided by listed shares from one. Free-float weight is reviewed once a year in order to reflect the latest distribution of share ownership. The TSE estimates non-free-float shares using publicly available documents, and generally deems shares held by the top ten major shareholders (with certain exceptions), treasury stocks and shares held by members of the issuer's board of directors to be unavailable for trading in the market. The TSE may deem other shares to be unavailable for trading in the market. The timing of the yearly free-float-weight review is different according to the settlement terms of listed companies. In addition to the yearly review, extraordinary reviews may be conducted for events TSE expects will significantly affect the free-float weight. These include when new shares are allocated to a third party, preferred shares are converted or subscription warrants are exercised, as well as in the event of a company spin-off, merger, stock-swap, take-over bid and other events TSE judges deem will significantly affect free-float weight.

In the event of any increase or decrease in the current free-float-adjusted market value due to causes other than fluctuations in the stock market, such as public offerings or changes in the number of listed companies in the TSE First Section, adjustments are made by TSE to the base market value in order to maintain the continuity of TPX.

### Additions and Deletions to the TSE First Section (and therefore, TPX)

TSE adds or removes securities for various listing and delisting events as shown in the table below.

Additions and Deletions of Constituents

Event	Adjustment Date	Stock Price Used for Adjustment
<p>Addition A company is to be newly listed on the TSE First Section (directly listed or via another stock exchange)</p>	<p>Last business day of the month after such listing</p>	<p>Stock price at the end of trading on the business day before adjustment date</p>
<p>Addition New listing of a newly formed company resulting from a corporate consolidation, acquisition, merger or split (personnel split) that results in a TPX or Ex-TPX constituent being delisted and the new company being included in TPX.</p>	<p>New listing date. If the initial listing date falls on a holiday, it will be the following business day</p>	<p>Base price</p>
<p>Addition Assignment to the TSE First Section from the TSE Second Section, Tokyo Stock Exchange Mothers Index or JASDAQ Index.</p>	<p>Last business day of the month after such assignment (a free float weight of 0.00 is used from the assignment date to the month after the assignment date and thus the number of shares to be used for calculation will be 0.00 during such period)</p>	<p>Stock price at the end of trading on the business day before adjustment date</p>
<p>Deletion New listing of a newly formed company resulting from a corporate consolidation, acquisition, merger or split (personnel split) that results in a TPX or Ex-TPX constituent being delisted and the new company being included in TPX.</p>	<p>Listing date of the newly formed company (normally three business days following delisting date)</p>	<p>Stock price at the end of trading on the business day before delisting date. The stock price at the end of trading on the business day before the delisting date is used to calculate TPX for the period from the delisting date to the removal date</p>
<p>Deletion A constituent is to be delisted due to a reason other than as described in the preceding scenario</p>	<p>Delisting date</p>	<p>Stock price at the end of trading on the business day before adjustment date</p>
<p>Deletion A constituent's securities are designated to be delisted</p>	<p>Four business days after designation. If the designation date falls on a holiday, it will be the next business day</p>	<p>Stock price at the end of trading on the business day before adjustment date</p>
<p>Deletion Assignment to the TSE Second Section or JASDAQ from the TSE First Section</p>	<p>Date of change</p>	<p>Stock price at the end of trading on the business day before adjustment date</p>



The adjusted base market value will equal the old base market value multiplied by the quotient of the free-float-adjusted market value on the business day before the adjustment date plus or minus, as applicable, the adjustment amount divided by the free-float-adjusted market value on the business day before the adjustment date.

The adjustment amount for the foregoing calculation will be an amount equal to the product of the change (the absolute value of the increase or decrease) in the number of shares used for index calculations times the price of the shares used for adjustment.

Changes in the number of shares and the price of the shares for adjustments to the base market value will be made as described in the table below.

Change in the Number of Shares

Event	Adjustment Date	Stock Price Used for Adjustment
Change of free-float weight	Date of change	Stock price at the end of trading on the business day before adjustment date
Public offering	Additional listing date (day after payment date). If listing date falls on a holiday, it will be the next business day	Stock price at the end of trading on the business day before adjustment date
Allocation of new shares to a third party	Five business days after additional listing date (two business days after payment date)	Stock price at the end of trading on the business day before adjustment date
Issues to shareholders with payment	Ex-rights date	Payment price per share
Exercise of subscription warrants	Last business day of the month following exercise	Stock price at the end of trading on the business day before adjustment date
Conversion of preferred shares	Last business day of the month following conversion	Stock price at the end of trading on the business day before adjustment date
Cancellation of treasury stock	Last business day of the month following cancellation	Stock price at the end of trading on the business day before adjustment date
Merger or acquisitions between a non-surviving constituent and another constituent	Delisting date of the non-surviving constituent	Stock price at the end of trading on the business day before adjustment date
Merger or acquisitions other than that described above	Listing change date (effective date)	Stock price at the end of trading on the business day before adjustment date
Rights offering	Ex-rights date	Payment price per share
Offering for sale of shares held by the Japanese government (Nippon Telegraph	Date determined by TSE (generally the delivery date)	Stock price at the end of trading on the business day

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and Telephone and Japan Tobacco only)		before adjustment date
Company split (merged split)	Listing change date (the effective date)	Stock price at the end of trading on the business day before adjustment date
Other adjustments	Last business day of the month in which the information appears in "Sho- ho" (TSE Notice) or the last business day of the following month	Stock price at the end of trading on the business day before adjustment date

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No adjustments will be made to the base market value in the case of a stock split or reverse stock split. Retroactive adjustments will not be made to revise the figures of the index that have already been calculated and disseminated even if issuing companies file amendments on previously released information.

#### Market Disruption

If trading in a certain constituent is halted, the TSE regards the constituent's share price for purposes of calculating TPX to be unchanged. Where an event that is not specified in the rules of TPX occurs, or if the TSE decides that it is impossible to use its existing methods to calculate TPX, the TSE may use an alternate method of index calculation as it deems valid.

#### License Agreement

We expect to enter into a non-exclusive license agreement with the Tokyo Stock Exchange, Inc. ("TSE") providing for the license to us, in exchange for a fee, of the right to use the Tokyo Stock Price Index ("TOPIX Index"), the proprietary data therein contained ("TOPIX Index Value") and the trademarks "TOPIX", Tokyo Stock Exchange" and "Tokyo Stock Price Index/TOPIX" (collectively, the "TOPIX Marks") in connection with certain securities, including the notes. The TOPIX Index Value and the TOPIX Marks are subject to the proprietary rights owned by the Tokyo Stock Exchange, Inc. and the Tokyo Stock Exchange, Inc. owns all rights and know-how relating to the TOPIX such as calculation, publication and use of the TOPIX Index Value and relating to the TOPIX Marks. The Tokyo Stock Exchange, Inc. 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 Marks or cease the use thereof. The Tokyo Stock Exchange, Inc. makes no warranty or representation whatsoever, either as to the results stemmed from the use of the TOPIX Index Value and the TOPIX Marks or as to the figure at which the TOPIX Index Value stands on any particular day. The Tokyo Stock Exchange, Inc. gives no assurance regarding accuracy or completeness of the TOPIX Index Value and data contained therein. Further, the Tokyo Stock Exchange, Inc. shall not be liable for the miscalculation, incorrect publication, delayed or interrupted publication of the TOPIX Index Value. The notes are in no way sponsored, endorsed or promoted by the Tokyo Stock Exchange, Inc. The Tokyo Stock Exchange, Inc. shall not bear any obligation to give an explanation of the notes or any advice on investments to any purchaser of the notes or to the public. The Tokyo Stock Exchange, Inc. 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. Including but not limited to the foregoing, the Tokyo Stock Exchange, Inc. shall not be responsible for any damage resulting from the issue and sale of the notes.



## Historical High, Low and Closing Levels of the Basket Component

The level of the basket component has fluctuated in the past and may, in the future, experience significant fluctuations. Any historical upward or downward trend in the level of the basket component during any period shown below is not an indication that the basket component is more or less likely to increase or decrease at any time during the life of your notes.

The following table sets forth the quarterly high and low closing levels for the basket component, based on the daily closing level as reported by Bloomberg without independent verification. The level of the basket component on October 29, 2018 was 1,589.56. Past performance of the basket component is not indicative of the future performance of the basket component.

Quarter Begin	Quarter End	Quarterly Closing High	Quarterly Closing Low	Quarterly Close
1/1/2012	3/31/2012	872.42	725.24	854.35
4/1/2012	6/30/2012	856.05	695.51	770.08
7/1/2012	9/30/2012	778.70	706.46	737.42
10/1/2012	12/31/2012	859.80	713.95	859.80
1/1/2013	3/31/2013	1,058.10	871.88	1,034.71
4/1/2013	6/30/2013	1,276.03	991.34	1,133.84
7/1/2013	9/30/2013	1,222.72	1,106.05	1,194.10
10/1/2013	12/31/2013	1,302.29	1,147.58	1,302.29
1/1/2014	3/31/2014	1,306.23	1,139.27	1,202.89
4/1/2014	6/30/2014	1,269.04	1,132.76	1,262.56
7/1/2014	9/30/2014	1,346.43	1,228.26	1,326.29
10/1/2014	12/31/2014	1,447.58	1,177.22	1,407.51
1/1/2015	3/31/2015	1,592.25	1,357.98	1,543.11
4/1/2015	6/30/2015	1,679.89	1,528.99	1,630.40
7/1/2015	9/30/2015	1,691.29	1,375.52	1,411.16
10/1/2015	12/31/2015	1,605.94	1,442.74	1,547.30
1/1/2016	3/31/2016	1,509.67	1,196.28	1,347.20
4/1/2016	6/30/2016	1,407.50	1,204.48	1,245.82
7/1/2016	9/30/2016	1,352.67	1,209.88	1,322.78
10/1/2016	12/31/2016	1,552.36	1,301.16	1,518.61
1/1/2017	3/31/2017	1,577.40	1,506.33	1,512.60
4/1/2017	6/30/2017	1,624.07	1,459.07	1,611.90
7/1/2017	9/30/2017	1,676.17	1,590.71	1,674.75
10/1/2017	12/31/2017	1,831.93	1,673.62	1,817.56
1/1/2018	3/31/2018	1,911.07	1,664.94	1,716.30
4/1/2018	6/30/2018	1,815.25	1,703.80	1,730.89
7/1/2018	9/30/2018	1,822.44	1,676.20	1,817.25
10/1/2018*	10/29/2018*	1,824.03	1,589.56	1,589.56

\* As of the date of this pricing supplement, available information for the fourth calendar quarter of 2018 includes data for the period from October 1, 2018 through October 29, 2018. Accordingly, the “Quarterly Closing High,” “Quarterly Closing Low” and “Quarterly Close” data indicated are for this shortened period only and do not reflect complete data for the fourth calendar quarter of 2018.

The graph below illustrates the performance of the basket component from January 1, 2008 through October 29, 2018, based on information from Bloomberg. Past performance of the basket component is not indicative of the future performance of the basket component.

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## The FTSE® 100 Index (“UKX”)

The UKX is a market capitalization-weighted index of the 100 most highly capitalized U.K.-listed blue chip companies traded on the London Stock Exchange. The UKX was developed with a base level of 1,000 as of December 30, 1983. The UKX Index is calculated, published and disseminated by FTSE Russell, a company owned by the London Stock Exchange Companies (the “Exchange”) that we refer to as FTSE. Additional information on the UKX is available from the following website: [ftse.com/products/indices/uk](http://ftse.com/products/indices/uk). We are not incorporating by reference the website or any material it includes in this pricing supplement. FTSE is under no obligation to continue to publish the UKX and may discontinue publication of the UKX at any time.

FTSE divides the 100 companies included in the UKX into 19 sectors: Oil & Gas, Chemicals, Basic Resources, Construction & Materials, Industrial Goods & Services, Automobiles & Parts, Food & Beverage, Personal & Household Goods, Health Care, Retail, Media, Travel & Leisure, Telecommunications, Utilities, Banks, Insurance, Real Estate, Financial Services and Technology.

Component Stock Weighting by Sector as of September 28, 2018

Sector*	Percentage**
Oil & Gas	17.22%
Banks	12.00%
Personal & Household Goods	11.72%
Health Care	10.58%
Basic Resources	7.93%
Industrial Goods & Services	7.09%
Insurance	5.15%
Media	4.55%
Travel & Leisure	4.27%
Food & Beverages	4.02%
Telecommunications	3.20%
Retail	3.03%
Utilities	2.88%
Financial Services	2.52%
Construction & Materials	1.56%
Real Estate	0.96%
Chemicals	0.68%
Technology	0.64%

\* Sector designations are determined by the basket component 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.

\*\* Information provided by FTSE. Percentages may not sum to 100% due to rounding.

The FTSE announced that it expects to add an 11th industry, Real Estate, to the Industry Classification Benchmark after the market close on December 31, 2018.

The top ten constituent stocks of the FTSE® 100 Index as of October 15, 2018, by weight, are: HSBC Holdings plc (6.98%); Royal Dutch Shell plc Class A (6.29%); BP p.l.c. (6.02%); Royal Dutch Shell plc Class B (5.19%); British American Tobacco p.l.c. (4.12%); AstraZeneca PLC (3.88%); GlaxoSmithKline plc (3.85%); Diageo plc (3.39%); Unilever PLC (2.42%) and Rio Tinto plc (2.34%).

The above information was derived from information prepared by the basket component sponsor, however, the percentages we have listed above are approximate and may not match the information available on the basket component sponsor's website due to subsequent corporation actions or other activity relating to a particular stock.

#### UKX Composition and Selection Criteria

The UKX consists of the 100 largest U.K.-listed blue chip companies, based on full market capitalization, that pass screening tests for free-float and liquidity. The UKX is reviewed on a quarterly basis in March, June, September and December based on data from the close of business on the Tuesday before the first Friday of the review month. The FTSE Russell Europe, Middle East & Africa Regional Equity Advisory Committee, which we refer to as the Committee, meets quarterly to approve the constituents of the index. Any constituent changes are implemented after the close of business on the third Friday of the review month (i.e. effective Monday), following the expiration of the Intercontinental Exchange Futures Europe futures and options contracts.

#### Eligibility Standards

Only “premium listed” equity shares, as defined by the Financial Conduct Authority in its Listing Rules Sourcebook, are eligible for inclusion in the UKX. Eligible stocks must pass free-float and liquidity screens before being included in the index.

**Free-Float Screen** — With regard to free-float, a stock must have a minimum free float (as described below) of 25% if the issuing company is incorporated in the United Kingdom and 50% if it is a non-United Kingdom incorporated company. Companies with a free float of 5% or below are excluded from the UKX. A new company may be initially included in the index with a free float outside of the above parameters so long as it has an initial free float above 5% and it is expected to meet the minimum free float requirements within 12 months of its first day of trading.

**Liquidity Screen** — With regard to liquidity, each eligible stock is tested for liquidity annually in June by calculating its median daily trading per month. When calculating the median of daily trades per month of any security, a minimum of 5 trading days in each month must exist, otherwise the month is excluded from the test. Liquidity is tested from the first business day in May of the previous year to the last business day of April. The median trade is calculated by ranking each daily trade total and selecting the middle-ranking day. Any period of suspension is not included in the test. The liquidity test is applied on a pro-rata basis where the testing period is less than 12 months. A stock not presently included in the UKX that does not turnover at least 0.025% of its shares in issue (after application of any investability weightings) based on its median daily trade per month in at least ten of the 12 months prior to the annual index review in June will not be eligible for inclusion until the next annual review. An existing constituent failing to trade at least 0.015% of its shares in issue (after the application of any investability weightings) based on its median daily trade per month for at least eight of the 12 months prior to the annual index review will be removed from the UKX and will not be eligible for inclusion until the next annual review. New issues must have a minimum trading record of at least 20 trading days prior to the review date and that they have turned over at least 0.025% of their shares in issue (after the application of any investability weightings) based on their median daily trade each month, on a pro-rata basis since premium listing or UK Nationality allocation date if non-UK incorporated.

**Price**— With regard to price, the Committee must be satisfied that an accurate and reliable price exists for purposes of determining the market value of a company. To be eligible for inclusion in the UKX, a stock must have a full listing on the London Stock Exchange with a Sterling-denominated price on SETS (SETS is the London Stock Exchange’s trading service for, among other securities, those included in the UKX).

**Market Capitalization Ranking** — Eligible stocks that pass the free-float and liquidity screens and that have an accurate and reliable price are ranked by the Committee according to their market capitalization before the application of any adjustments based on the extent to which the shares are publicly traded. Only the quoted equity capital of a constituent company will be included in the calculation of its market capitalization. Where a company has two or more classes of equity, secondary lines will be included in the calculation of the market capitalization of the company only if those lines are significant and liquid. The Committee will add a stock to the UKX at the quarterly review if it has risen to

90th place or above on the full market capitalization rankings and will delete a stock at the quarterly review if it has fallen to 111th place or below on these rankings. Market capitalization rankings are calculated using data as of the close of business on the day before the review.

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**100 Constituent Limitation** — The UKX always contains 100 constituents. If a greater number of companies qualify to be inserted in the index than qualify to be removed, the lowest ranking constituents of the index will be removed so that the total number of stocks remains at 100 following inclusion of those that qualify to be inserted. Likewise, if a greater number of companies qualify to be removed than to be inserted at the quarterly review, securities of the highest ranking companies that are then not included in the UKX will be inserted to match the number of companies being removed, in order to maintain the total at 100.

**Minimum Voting Rights Screen** — A company is required to have greater than 5% of its voting rights (aggregated across all of its equity securities, including, where identifiable, those that are not listed or trading) in the hands of unrestricted shareholders. Current constituents of the UKX who do not meet this requirement will have until the September 2022 review to meet the requirement or they will be removed from the UKX.

#### UKX Calculation

The UKX is a market capitalization weighted index. This means that the price movement of a larger company (that is, one representing larger percentage of the index) will have a greater effect on the price of the index than will the price movement of a smaller company (that is, one representing a smaller percentage of the index).

The value of the UKX is represented by a fraction, (a) the numerator of which is the sum of the product of (i) the price of each component stock, (ii) the number of shares issued for each such component and (iii) a free float factor for each such component (described more fully below), and (b) the denominator of which is a divisor. The divisor represents the total issued share capital of the index on the base date; the divisor may be adjusted as necessary to allow for changes in issued share capital of individual securities without distorting the index.

As noted above, a free float factor is applied to each index component. By employing this approach, FTSE uses the investable market capitalization, not the total market capitalization, of each constituent to determine the value of the UKX. Investable market capitalization depends on free float. The following are excluded from free float: shares directly owned by state, regional, municipal and local governments (excluding shares held by independently managed pension schemes for governments); shares held by sovereign wealth funds where each holding is 10% or greater of the total number of shares in issue; 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; shares held within employee share plans; shares held by public companies or by non-listed subsidiaries of public companies; shares held by founders, promoters, former directors, founding venture capital and private equity firms, private companies and individuals (including employees) where the holding is 10% or greater of the total number of shares in issue; all shares where the holder is subject to a lock-in clause (for the duration of that clause, after which free float changes resulting from the expiration of a lock-in clause will be implemented at the next quarterly review subsequent to there being a minimum of 20 business days between the expiration date of such lock-in clause and the Tuesday before the first Friday of the review month; if the previously locked-in shares are sold by way of a corporate event (such as a secondary offering), any change to the free float will be applied T+2 following completion and therefore will not be subject to the minimum 20 business day rule); shares held by an investor, investment company or an investment fund that is actively participating in the management of a company or is holding shares for publicly announced strategic reasons or that has successfully placed a current member to the board of directors of a company; and shares that are subject to ongoing contractual agreements (such as swaps) where they would ordinarily be treated as restricted. In addition, while portfolio holdings such as pension funds, insurance funds or investment companies will generally not be considered as restricted from free float, where a single portfolio holding is 30% or greater it will be regarded as strategic and therefore restricted (and will remain restricted until the holding falls below 30%).

The UKX is recalculated whenever errors or distortions occur that are deemed to be significant. Users of the UKX are notified through appropriate media.

#### Index Maintenance

The UKX is reviewed quarterly for changes in free float. A constituent's free float is updated during the June review regardless of the size of the change. At the March, September and December quarterly updates, a constituent with a free float greater than 15% will have its free float updated if it moves by more than three percentage points above or below the existing free float. A constituent with a free float of 15% or below will be subject to a one percentage point threshold. Free float changes resulting from corporate events will not be subject to the percentage change

requirements, and will be implemented in line with the event. If a constituent is the target of a tender offer but the conditions for removal from the index are not met, FTSE may implement a free float change when (i) the minimum acceptance level as stipulated by the acquirer

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has been met, (ii) shareholders have validly tendered and the shares have been irrevocably accepted for payment, and (iii) all pertinent offer conditions have been reasonably met.

At each quarterly review, the Committee publishes a Reserve List containing the six highest ranking non-constituents of the UKX. The Reserve List will be used in the event that one or more constituents are deleted from the index during the period up to the next quarterly review. If a merger or takeover results in one index constituent being absorbed by another constituent, the resulting company will remain a constituent and a vacancy will be created. This vacancy will be filled by selecting the highest ranking security in the Reserve List as at the close of the UKX calculation two days prior to the deletion and related index adjustment. If an index constituent is taken over by a non-constituent company, the original constituent will be removed and replaced by the highest ranking non-constituent on the Reserve List. Any eligible company resulting from the takeover will be eligible to become the replacement company if it is ranked higher than any other company on the Reserve List. If a constituent company is split to form two or more companies, then the resulting companies will be eligible for inclusion as UKX constituents, based on their respective full market capitalizations (before the application of any investability weightings), provided that they qualify in all other respects. Any eligible company resulting from a split that, after 20 business days, has no available market price and no known trading date will be removed. If a split results in the inclusion of an ineligible non-equity security, such security will remain in the UKX for two trading days and then be removed. If a constituent is delisted or ceases to have a firm quotation, it will be removed from the list of constituents and be replaced by the highest ranking eligible company from the Reserve List. If a constituent is the target of a tender offer, it will normally be removed from the index with a minimum T+2 notice when either (a) offer acceptances reach 90%, shareholders have validly tendered and the shares have been irrevocably accepted for payment, and all pertinent offer conditions have been reasonably met and the acquirer has not explicitly stated that it does not intend to acquire the remaining shares; or (b) offer acceptances are below 90% and there is reason to believe that the remaining free float is under 5% based on information available at the time or, following completion of the offer, the acquirer has stated that the offer has been declared wholly unconditional.

#### Capitalization Adjustments

A secondary line of a company will be considered for index inclusion if its total market capitalization before the application of any adjustments based on the extent to which the shares are publicly traded, is greater than 25% of the total market capitalization of the company's principal line and the secondary line is eligible, in its own right. Should the total market capitalization of a secondary line fall below 20% of the total market capitalization of the company's principal line at an annual review, the secondary line will be deleted from the UKX unless its total market capitalization remains above the qualification level for continued inclusion as a constituent of the UKX at that review. Where a company has partly paid shares, these shares, together with the outstanding call(s), are both included in the UKX.

**Share Weighting Changes** — For the purposes of computing the UKX, to prevent a large number of insignificant weighting changes, the number of shares in issue for each constituent security is amended only when the total shares in issue held within the index system changes by more than 1% on a cumulative basis. Changes will be made quarterly after the close of business on the third Friday of March, June, September and December. The data for these changes will be taken from the close of business on the third Wednesday of the month prior to the review month.

If a corporate action is applied to a constituent which involves a change in the number of shares in issue, the change in shares will be applied simultaneously with the corporate action.

**Shares in Issue Increase** — When a company increases the number of shares it has in issue, the market capitalization of that company increases and the total market capitalization will rise accordingly. The index divisor is adjusted to maintain a constant index value.

**Weighting Amendments** — The market capitalization of a company is adjusted to take account of various corporate actions. To prevent the value of the UKX from changing due to such an event, all corporate actions which affect the market capitalization of the UKX require an offsetting divisor adjustment. By adjusting the divisor, the value of the UKX remains constant before and after the event. Below is a summary of the more frequent corporate actions and their resulting adjustment.



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Type of Corporate Action	Adjustment	Adjustment to Divisor
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Issue of new shares	Share weighting increased	Yes
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Bonus issue of same stock or stock split	Number of shares held before issue or split divided by number of shares held after issue or split	No
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Rights Issues/Entitlement Offers -These are an entitlement issued to shareholders which give them the right to buy additional shares directly from the company in proportion to existing holdings. FTSE will only adjust the index to account for a right if the subscription price of the right is at a discount to the market price of the stock. Provided FTSE has been alerted to the rights offer prior to the ex-date, a price adjustment and share increase proportionate to the terms of the offer will be implemented before the open on the ex-date. The rights become attached to the shares on the ex-date.

Where the rights issue/entitlement offer subscription price remains unconfirmed on the ex-date, FTSE will estimate the subscription price using the value being raised and the offer terms. If the rights issue is greater than ten to one, FTSE will consider this “highly dilutive” and, to facilitate replication, will include on the ex-date a separate temporary line to reflect the market value of the rights (together with a temporary line at a fixed value to reflect the subscription cash) until the end of the subscription period, at which point the temporary lines will be deleted and the new shares will be consolidated into the existing share line.

Where the shares being issued are not entitled to the next dividend, FTSE will deviate from the standard index treatment and include on the ex-date a separate temporary line to reflect the market value of the rights (together with a temporary line at a fixed value to reflect the subscription cash). If the dividend ex-date occurs prior to the end of the rights subscription period, the temporary lines will be deleted and the new shares assimilated into the ordinary line at the open on the dividend ex-date. If the dividend ex-date occurs after the expiration of the rights subscription period, the temporary rights and cash line will be deleted after the close on the last day of the rights subscription period, and replaced by a temporary dummy line equal to the ordinary line close price minus the upcoming dividend. On the open of the ex-dividend date, the dummy line is deleted and the shares are aggregated with the ordinary line.

In the event the rights issue involves a non-constituent (including non-equity) and the value of the right cannot be determined, there will be no adjustment on the ex-date. If the rights are scheduled to trade, a rights line will be added to the index at a value of zero on the ex-date and will be deleted from the index at the market price when it commences trading, with the T+5 notice. If the rights have not commenced trading within 20 business days of the ex-date, they will be removed at zero value. No cash temporary line will be included as the index will not subscribe to the rights.

Where a company announces an open offer or a rights issue with an ex-entitlement date on the same day, FTSE will apply an index adjustment either before the market-open on the ex-entitlement day or as an intra-day adjustment as soon as possible thereafter. The adjustment will be applied based on the previous day’s closing price with the new shares included in the index weighting at the open offer price.

In the case of an accelerated rights offer, where the ex-date is theoretical and typically not quoted by the exchange, shares are increased and a price adjustment is applied according to the terms of the offer before the open on the day the security resumes trading.

#### Market Disruption

If there is a system problem or situation in the market that is judged by FTSE to affect the quality of the constituent prices at any time when an index is being calculated, the index will be declared indicative (e.g. normally where a “fast market” exists in the equity market). The message “IND” will be displayed against the index value calculated by FTSE. FTSE®, “FT-SE”, “Footsie”, “FTSE4Good” and “techMARK” are trademarks owned by the Exchange and are used by FTSE under license. “All-World”, “All-Share” and “All-Small” are trademarks of FTSE.

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All copyright and database rights in the index values and constituent list vest in FTSE.

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## Historical High, Low and Closing Levels of the Basket Component

The level of the basket component has fluctuated in the past and may, in the future, experience significant fluctuations. Any historical upward or downward trend in the level of the basket component during any period shown below is not an indication that the basket component is more or less likely to increase or decrease at any time during the life of your notes.

The following table sets forth the quarterly high and low closing levels for the basket component, based on the daily closing level as reported by Bloomberg without independent verification. The level of the basket component on October 29, 2018 was 7,026.32. Past performance of the basket component is not indicative of the future performance of the basket component.

Quarter Begin	Quarter End	Quarterly Closing High	Quarterly Closing Low	Quarterly Close
1/1/2012	3/31/2012	5,965.58	5,612.26	5,768.45
4/1/2012	6/30/2012	5,874.89	5,260.19	5,571.15
7/1/2012	9/30/2012	5,915.55	5,498.32	5,742.07
10/1/2012	12/31/2012	5,961.59	5,605.59	5,897.81
1/1/2013	3/31/2013	6,529.41	6,027.37	6,411.74
4/1/2013	6/30/2013	6,840.27	6,029.10	6,215.47
7/1/2013	9/30/2013	6,681.98	6,229.87	6,462.22
10/1/2013	12/31/2013	6,777.70	6,337.91	6,749.09
1/1/2014	3/31/2014	6,865.86	6,449.27	6,598.37
4/1/2014	6/30/2014	6,878.49	6,541.61	6,743.94
7/1/2014	9/30/2014	6,877.97	6,567.36	6,622.72
10/1/2014	12/31/2014	6,750.76	6,182.72	6,566.09
1/1/2015	3/31/2015	7,037.67	6,366.51	6,773.04
4/1/2015	6/30/2015	7,103.98	6,520.98	6,520.98
7/1/2015	9/30/2015	6,796.45	5,898.87	6,061.61
10/1/2015	12/31/2015	6,444.08	5,874.06	6,242.32
1/1/2016	3/31/2016	6,203.17	5,536.97	6,174.90
4/1/2016	6/30/2016	6,504.33	5,923.53	6,504.33
7/1/2016	9/30/2016	6,941.19	6,463.59	6,899.33
10/1/2016	12/30/2016	7,142.83	6,693.26	7,142.83
1/1/2017	3/31/2017	7,429.81	7,099.15	7,322.92
4/1/2017	6/30/2017	7,547.63	7,114.36	7,312.72
7/1/2017	9/30/2017	7,542.73	7,215.47	7,372.76
10/1/2017	12/31/2017	7,687.77	7,300.49	7,687.77
1/1/2018	3/31/2018	7,778.64	6,888.69	7,056.61
4/1/2018	6/30/2018	7,877.45	7,030.46	7,636.93
7/1/2018	9/30/2018	7,776.65	7,273.54	7,510.20
10/1/2018*	10/29/2018*	7,510.28	6,939.56	7,026.32

\* As of the date of this pricing supplement, available information for the fourth calendar quarter of 2018 includes data for the period from October 1, 2018 through October 29, 2018. Accordingly, the “Quarterly Closing High,” “Quarterly Closing Low” and “Quarterly Close” data indicated are for this shortened period only and do not reflect complete data for the fourth calendar quarter of 2018.

The graph below illustrates the performance of the basket component from January 1, 2008 through October 29, 2018, based on information from Bloomberg. Past performance of the basket component is not indicative of the future performance of the basket component.

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## Swiss Market Index (“SMI”)

### The SMI:

· was first launched with a base level of 1,500 as of June 30, 1988; and  
· is sponsored, calculated, published and disseminated by SIX Group Ltd., certain of its subsidiaries, and the Management Committee of the SIX Swiss Exchange (the “Exchange”).

The SMI is a price return float-adjusted market capitalization-weighted index of the 20 largest stocks traded on the Swiss Stock Exchange. The Exchange has outsourced the calculation and determination of index constituents as described below, to a specialized third party financial service provider. All matters regarding the SMI that require a decision, including regarding processes outsourced to STOXX, are submitted to the Management Committee. The Management Committee of SIX Swiss Exchange is supported by an Index Commission (advisory board) in all index-related matters, notably in connection with changes to the SMI rules and adjustments, additions and exclusions outside of the established review and acceptance period. The Index Commission meets at least twice annually. As of September 27, 2018, the top ten constituents by weight in the SMI (and their respective weights) were: Commonwealth Bank of Australia (7.37%), BHP Billiton Ltd. (6.17%), CSL Ltd. (6.15%), Westpac Banking Corp. (5.73%), ANZ Banking Group (4.94%), National Australia Bank Ltd. (4.57%), Wesfarmers Ltd. (3.44%), Macquarie Group Ltd. (2.41%), Woolworths Ltd. (2.23%) and Telstra Corporation Ltd. (2.15%). As of September 27, 2018, the ICB industry sectors in the SMI (and their respective weights) were: Financials (32.19%), Materials (18.04%), Health Care (8.62%), Consumer Staples (7.93%), Industrials (7.62%), Real Estate (7.57%), Energy (6.00%), Consumer Discretionary (4.19%), Communication Services (3.80%), Information Technology (2.15%) and Utilities (1.89%) (may not sum to 100% due to rounding). Sector designations are determined by the basket component 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. The above index weighting information was provided by SMI according to our license agreement.

### SMI<sup>®</sup> Composition and Selection Criteria

The SMI is comprised of the 20 highest ranked stocks traded on the Exchange that have a free float of 20% or more and that are not investment companies. The equity universe is largely Swiss domestic companies, although in some cases foreign issuers with a primary listing on the Exchange that submit to certain reporting requirements or investment companies that do not hold any shares of any other eligible company and that have a primary listing on the Exchange may be included.

The ranking of each security is determined by a combination of the following criteria:

- average free-float market capitalization (compared to the capitalization of the entire SIX Exchange index family), and
- cumulative on order book turnover (compared to the total turnover of the SIX Exchange index family).

Each of these two factors is assigned a 50% weighting in ranking the stocks eligible for the SMI.

The SMI is reconstituted annually after prior notice of at least two months on the third Friday in September after the close of trading. For companies that were listed during the last 12 months, the cumulated on order book turnover generally excludes the first 5 trading days in the calculation. The reconstitution is based on data from the previous July 1 through June 30. Provisional interim selection (ranking) lists are also published following the end of the third, fourth and first financial quarters.

In order to reduce turnover, an index constituent will not be replaced unless it is ranked below 23 or, if it is ranked 21 or 22, if another share ranks 18 or higher. If a company has primary listings on several exchanges and less than 50% of that company’s total turnover is generated on the Exchange, it will not be included in the SMI unless it ranks at least 18 or better on the selection list solely on the basis of its turnover on those exchanges on which it has a primary listing (i.e., without considering its free float).

## Maintenance of the SMI

Constituent Changes. In the case of major market changes as a result of capital events such as mergers or new listings, the Management Committee of SIX Swiss Exchange can decide at the request of the Index Commission that a security should be admitted to the SMI outside the annual review period as long as it clearly fulfills the criteria for inclusion. For the same reasons, a security can also be excluded if the requirements for admission to the SMI are no longer fulfilled. As a general rule, extraordinary acceptances into the SMI take place after a three-month period on a quarterly basis after the close of trading on the third Friday of March, June, September and December (for example, a security listed on or before the 5<sup>th</sup> trading day prior to the end of November cannot be included until the following March). If a delisting has been confirmed, it will be removed from the SMI at the next upcoming ordinary quarterly adjustment date (March, June, September and December) with a notice period of at least five days. An announced insolvency is deemed to be an extraordinary event and the security will be removed from the SMI with five trading days' prior notice if the circumstances permit such notice.

Capped Weightings and Intra-Quarter Breaches. The weight of any index constituent that exceeds a weight of 18% within the index is reduced to that value at each ordinary quarterly adjustment date by applying a capping factor to the calculation of such constituent's free float market capitalization. A constituent'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 index constituents. The constituents are also capped to 18% as soon as two index constituents 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 be around 18% at the subsequent market open. In order to achieve a capped weighting while attempting to not cause market distortion, a stepwise reduction is conducted based on the ordinary quarterly index adjustment reviews to ensure that no change in the weight (as a result of capping) from one review to the next exceeds 3%. The transition period is in effect until no component has a weight larger than 18%. In the case of an intraquarter breach, the weights are limited to the last defined weights as of the prior review.

Number of Shares and Free Float. The securities included in the SMI are weighted according to their free float. This means that shares deemed to be in firm hands are subtracted from the total market capitalization of that company. The free float is calculated on the basis of outstanding shares. Issued and outstanding equity capital is, as a rule, the total amount of equity capital that has been fully subscribed and wholly or partially paid in and documented in the Commercial Register. Not counting as issued and outstanding equity capital are the approved capital and the conditional capital of a company. The free float is calculated on the basis of listed shares only. If a company offers several different categories of listed participation rights, each is treated separately for the purposes of index calculation.

Shares held deemed to be in firm hands are shareholdings that have been acquired by one person or a group of persons in companies domiciled in Switzerland and which, upon exceeding 5%, have been reported to the Exchange. Shares of persons and groups of persons who are subject to a shareholder agreement which is binding for more than 5% of the listed shares or who, according to publicly known facts, have a long-term interest in a company are also deemed to be in firm hands.

For the calculation of the number of shares in firm hands, the Exchange may also use other sources than the reports submitted to it. In particular, the Exchange may use data gained from issuer surveys that it conducts itself.

In general, shares held by custodian nominees, trustee companies, investment funds, pension funds and investment companies are deemed free-floating regardless of whether a report has been made to the Exchange. The Exchange classifies at its own discretion persons and groups of persons who, because of their area of activity or the absence of important information, cannot be clearly assigned.

The free-float rule applies only to bearer shares and registered shares. Capital issued in the form of participation certificates ("Partizipationsscheine") and bonus certificates ("Genussscheine") is taken into full account in calculating the SMI because it does not confer voting rights.





The number of securities in the SMI and the free-float factors are adjusted after the close of trading on four adjustment dates per year, the third Friday of March, June, September and December. Such changes are provisionally pre-announced at least one month before the adjustment date, although the basket component sponsor reserves the right to take account of recent changes up to five trading days before the adjustment date in the actual adjustment. In order to avoid frequent slight changes to the weighting and to maintain the stability of the SMI, any extraordinary change of the total number of outstanding securities or the free float will only result in an extraordinary adjustment if it exceeds 10% and 5% respectively, occurs from one trading to the next and is in conjunction with a corporate action. After a takeover, the Exchange may, in exceptional cases, adjust the free float of the company in question upon publication of the end results after a five-day notification period or may exclude the security from the relevant index family. When an insolvency has been announced, an extraordinary adjustment will be made and the affected security will be removed from the SMI after five trading days' notice, and a replacement will be determined based on the current selection list.

The basket component sponsor reserves the right to make an extraordinary adjustment, in exceptional cases, without observing the notification period.

#### Calculation of the Index

The basket component sponsor calculates the SMI using the "Laspeyres formula," with a weighted arithmetic mean of a defined number of securities issues. The formula for calculating the index value can be expressed as follows:

$$\text{Swiss Market Index} = \frac{\text{Free Float Market Capitalization of the SMI}^{\text{®}}}{\text{Divisor}}$$

The "free float market capitalization of the SMI" is equal to the sum of the product of the last-paid price, the number of shares, the free float factor, the capping factor and, if a foreign stock is included, the current CHF exchange rate as of the time the index value is being calculated. (As of December 12, 2015, all stocks in the SMI are denominated in Swiss Francs, known as CHF). The index value is calculated in real time and is updated whenever a trade is made in a component stock. Where any component stock price is unavailable on any trading day, the Exchange will use the last reported price for such component stock. Only prices from the Exchange's electronic order book are used in calculating the SMI.

#### Divisor Value and Adjustments

The divisor is a technical number used to calculate the SMI and is adjusted to reflect changes in market capitalization due to corporate events.

Below are common corporate events and their impact on the divisor of the SMI.

Event	Divisor Change?
Regular cash dividend	No
Repayments of capital through reduction of a share's par value	No
Special dividends, anniversary bonds and other extraordinary payments that, contrary to the company's usual dividend policy, are paid out or declared extraordinary.	Yes
Share dividends (company's own shares)	No
Share dividend (shares of another company)	Yes

The basket component sponsor reserves the right to respond to any other corporate events with divisor adjustments or, in extraordinary circumstances, to depart from the provisions set forth above.



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## Historical High, Low and Closing Levels of the Basket Component

The level of the basket component has fluctuated in the past and may, in the future, experience significant fluctuations. Any historical upward or downward trend in the level of the basket component during any period shown below is not an indication that the basket component is more or less likely to increase or decrease at any time during the life of your notes.

The following table sets forth the quarterly high and low closing levels for the basket component, based on the daily closing level as reported by Bloomberg without independent verification. The level of the basket component on October 29, 2018 was 8,759.62. Past performance of the basket component is not indicative of the future performance of the basket component.

Quarter Begin	Quarter End	Quarterly Closing High	Quarterly Closing Low	Quarterly Close
1/1/2012	3/31/2012	6,341.33	5,970.49	6,235.51
4/1/2012	6/30/2012	6,299.38	5,713.34	6,066.86
7/1/2012	9/30/2012	6,613.45	6,109.41	6,495.88
10/1/2012	12/31/2012	6,973.69	6,508.66	6,822.44
1/1/2013	3/31/2013	7,864.39	7,020.46	7,813.67
4/1/2013	6/30/2013	8,407.61	7,249.47	7,683.04
7/1/2013	9/30/2013	8,105.39	7,675.29	8,022.60
10/1/2013	12/31/2013	8,351.38	7,755.26	8,202.98
1/1/2014	3/31/2014	8,532.99	8,092.53	8,453.82
4/1/2014	6/30/2014	8,752.86	8,280.53	8,554.52
7/1/2014	9/30/2014	8,840.17	8,274.65	8,835.14
10/1/2014	12/31/2014	9,212.85	8,057.54	8,983.37
1/1/2015	3/31/2015	9,396.29	7,899.59	9,128.98
4/1/2015	6/30/2015	9,471.46	8,780.91	8,780.91
7/1/2015	9/30/2015	9,526.79	8,278.07	8,513.41
10/1/2015	12/31/2015	9,016.56	8,375.31	8,818.09
1/1/2016	3/31/2016	8,701.46	7,496.62	7,807.89
4/1/2016	6/30/2016	8,292.45	7,594.49	8,020.15
7/1/2016	9/30/2016	8,320.99	7,898.21	8,139.01
10/1/2016	12/30/2016	8,259.45	7,593.20	8,219.87
1/1/2017	3/31/2017	8,704.39	8,229.01	8,658.89
4/1/2017	6/30/2017	9,127.61	8,529.28	8,906.89
7/1/2017	9/30/2017	9,176.99	8,814.54	9,157.46
10/1/2017	12/31/2017	9,452.32	9,084.04	9,381.87
1/1/2018	3/31/2018	9,611.61	8,509.29	8,740.97
4/1/2018	6/30/2018	9,000.89	8,456.95	8,609.30
7/1/2018	9/30/2018	9,201.22	8,529.59	9,087.99
10/1/2018*	10/29/2018*	9,175.21	8,639.19	8,759.62

\* As of the date of this pricing supplement, available information for the fourth calendar quarter of 2018 includes data for the period from October 1, 2018 through October 29, 2018. Accordingly, the “Quarterly Closing High,” “Quarterly Closing Low” and “Quarterly Close” data indicated are for this shortened period only and do not reflect complete data for the fourth calendar quarter of 2018.

The graph below illustrates the performance of the basket component from January 1, 2008 through October 29, 2018, based on information from Bloomberg. Past performance of the basket component is not indicative of the future performance of the basket component.

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## S&P/ASX 200 (“AS51”)

The AS51:

was first launched in 1979 by the Australian Securities Exchange and was acquired and re-launched by its current basket component sponsor on April 3, 2000; and

is sponsored, calculated, published and disseminated by S&P Dow Jones Indices LLC (“S&P”).

The AS51 includes 200 companies and covers approximately 80% of the Australian equity market by float-adjusted market capitalization. As discussed below, the S&P/ASX 200 is not limited solely to companies having their primary operations or headquarters in Australia or to companies having their primary listing on the Australian Securities Exchange (the “ASX”). All ordinary and preferred shares (if such preferred shares are not of a fixed income nature) listed on the ASX, including secondary listings, are eligible for the AS51. Hybrid stocks such as convertible stocks, bonds, warrants, preferred stock that provides a guaranteed fixed return and listed investment companies are not eligible for inclusion. Stocks currently under consideration for merger or acquisition are not eligible for inclusion or promotion to the AS51.

As of September 28, 2018, the top 10 component stocks by weight were the following: Commonwealth Bank of Australia, BHP Billiton Ltd., Westpac Banking Corp., CSL Ltd., ANZ Banking Group, National Australia Bank Ltd., Wesfarmers Ltd., Macquarie Group Ltd., Telstra Corp Ltd., and Woolworths Group Ltd.

As of September 28, 2018 the S&P/ASX 200 Index’s top holdings were stocks of companies in the following industry sectors: Financials (32.4%), Materials (18.0%), Health Care (8.6%), Consumer Staples (7.9%), Industrials (7.6%), Real Estate (7.5%), Energy (6.0%), Consumer Discretionary (4.2%), Communication Services (3.8%), Information Technology (2.1%) and Utilities (1.9%). Sector designations are determined by the basket component 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.

As of the close of business on September 21, 2018, the S&P and MSCI, Inc. updated the Global Industry Classification Sector structure. Among other things, the update broadened the Telecommunications Services sector and renamed it the Communication Services sector. The renamed sector includes the previously existing Telecommunication Services Industry group, as well as the Media Industry group, which was moved from the Consumer Discretionary sector and renamed the Media & Entertainment Industry group. The Media & Entertainment Industry group contains three industries: Media, Entertainment and Interactive Media & Services. The Media industry continues to consist of the Advertising, Broadcasting, Cable & Satellite and Publishing sub-industries. The Entertainment industry contains the Movies & Entertainment sub-industry (which includes online entertainment streaming companies in addition to companies previously classified in such industry prior to September 21, 2018) and the Interactive Home Entertainment sub-industry (which includes companies previously classified in the Home Entertainment Software sub-industry prior to September 21, 2018 (when the Home Entertainment Software sub-industry was a sub-industry in the Information Technology sector)), as well as producers of interactive gaming products, including mobile gaming applications). The Interactive Media & Services industry and sub-industry includes companies engaged in content and information creation or distribution through proprietary platforms, where revenues are derived primarily through pay-per-click advertisements, and includes search engines, social media and networking platforms, online classifieds and online review companies. The Global Industry Classification Sector structure changes are effective for the S&P/ASX 200 Index as of the open of business on September 24, 2018 to coincide with the September 2018 quarterly rebalancing.

As of September 28, 2018, the countries of domicile included in the AS51 and their relative weights were: Australia (97.2%), New Zealand (1.2%), United States (0.7%), France (0.6%) and United Kingdom (0.3%).

The S&P/ASX 200 Index is intended to provide exposure to the largest 200 eligible securities that are listed on the ASX by float-adjusted market capitalization. Constituent companies for the S&P/ASX 200 Index are chosen based on market capitalization, public float and liquidity. All index-eligible securities that have their primary or secondary

listing on the ASX are included in the initial selection of stocks from which the 200 component stocks may be selected.

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The float-adjusted market capitalization of companies is determined based on the daily average market capitalization over the last six months. The security's price history over the last six months, the latest available shares on issue and the investable weight factor (the "IWF") are the factors relevant to the calculation of daily average market capitalization. The IWF is a variable that is primarily used to determine the available float of a security for ASX listed securities.

#### Number of Shares

When considering the AS51 eligibility of securities for inclusion or promotion into S&P/ASX indices, the number of index securities under consideration is based upon the latest available ASX quoted securities. For domestic securities (companies incorporated in Australia and traded on the ASX, companies incorporated overseas but exclusively listed on the ASX and companies incorporated overseas and traded on other markets but most of its trading activity is on the ASX), this figure is purely based upon the latest available data from the ASX.

Foreign-domiciled securities may quote the total number of securities on the ASX that is representative of their global equity capital; whereas other foreign-domiciled securities may quote securities on the ASX on a partial basis that represents their Australian equity capital. In order to overcome this inconsistency, S&P will quote the number of index securities that are represented by CHESS Depositary Interests (CDIs) for a foreign entity. When CDIs are not issued, S&P will use the total securities held on the Australian register (CHESS and, where supplied, the issuer sponsored register). This quoted number for a foreign entity is representative of the Australian equity capital, thereby allowing the AS51 to be reflective of the Australian market.

The number of CDIs or shares of a foreign entity quoted on the ASX can experience more volatility than is typically the case for ordinary shares on issue. Therefore, an average number on issue will be applied over a six-month period. Where CDI information is not supplied to the ASX by the company or the company's share register, estimates for Australian equity capital will be drawn from CHESS data and, ultimately, registry-sourced data.

#### IWF

All stocks in the index are assigned an IWF, which is an adjustment factor that accounts for the publicly available shares of a company. The IWF ranges between 0 and 1 and is calculated as 1 minus the percentage of shares held by strategic shareholders who possess 5% or more of issued shares. A company must have a minimum IWF of 0.3 to be eligible for index inclusion.

S&P Dow Jones Indices identifies the following shareholders whose holdings are considered to be control blocks and are subject to float adjustment:

1. Government and government agencies;
2. Controlling and strategic shareholders/partners;
3. Any other entities or individuals which hold more than 5%; excluding insurance companies, securities companies and investment funds;
4. Other restricted portions such as treasury stocks.

#### Liquidity Test

Only stocks that are regularly traded are eligible for inclusion. Eligible stocks are considered for index inclusion based on their stock median liquidity (median daily value traded divided by its average float-adjusted market capitalization for the last six months) relative to the market capitalization weighted average of the stock median liquidities of the 500 constituents of the All Ordinaries index, another member of the S&P/ASX index family.

#### Index Maintenance

S&P rebalances the AS51 constituents quarterly to ensure adequate market capitalization and liquidity based on the previous six months' worth of data. 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. Quarterly review changes take effect after the market closes on the third Friday of March, June, September and December. Eligible stocks are considered for index inclusion based on their float-adjusted market capitalization rank relative to the stated quota of 200 securities. For example, a stock that is currently in the S&P/ASX 300 and is ranked at 175, based on float-adjusted market capitalization, within the universe of eligible securities may be considered for inclusion into the AS51, provided that liquidity hurdles are met.

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In order to limit the level of index turnover, eligible non-constituent securities will generally only be considered for index inclusion once a current constituent stock is excluded due to a sufficiently low rank and/or liquidity, based on the float-adjusted market capitalization. Potential index inclusions and exclusions need to satisfy buffer requirements in terms of the rank of the stock relative to a given index. In order to be added to the AS51, a stock must be ranked 179th or higher, and in order to be deleted from the AS51, a stock must be ranked 221st or lower. The buffers are established to limit the level of index turnover that may take place at each quarterly rebalancing. The buffers serve as guidelines for arriving at any potential constituent changes to the AS51, however, these rules can be by-passed when circumstances warrant.

Between rebalancing dates, an index addition is generally made only if a vacancy is created by an index deletion. Index additions are made according to float-adjusted market capitalization and liquidity. An initial public offering 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. 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. Share numbers for all index constituents are updated quarterly and are rounded to the nearest thousand. The update to the number of issued shares will be considered if the change is at least 5% of the float adjusted shares or \$100 million in value.

Share updates for foreign-domiciled securities will take place annually at the March rebalancing. The update to the number of index shares will only take place when the 6-month average of CDIs or the total securities held in the Australian branch of the issuer sponsored register (where supplied) and in CHESS, as of the March rebalancing, differs from the current index shares by either 5% or a market-cap dollar amount greater than A\$100 million. Where CDI information is not supplied to the ASX by the company or the company's share register, estimates for Australian equity capital will be drawn from CHESS data and, ultimately, registry-sourced data.

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 float-adjusted shares of 5% or more due to market-wide shares issuance;
- Rights issues, bonus issues and other major corporate actions;
- Dividend Reinvestment Plan share issuances of more than A\$100 million in value; and
- Share issues resulting from index companies merging and major off-market buy-backs.

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.

IWFs are reviewed annually as part of the September quarterly review. However, any event that alters the float of a security in excess of 5% will be implemented as soon as practicable by an adjustment to the IWF.

The function of the IWF is also to manage the AS51 weight of foreign-domiciled securities that quote shares on the basis of CDIs. Due to the volatility that is displayed by CDIs, unusually large changes in the number of CDIs on issue could result. Where this is the case, the IWF may be used to limit the effect of unusually large changes in the average number of CDIs (and, thereby, limit the potential to manipulate this figure). Where the Australian Index Committee sees fit to apply the IWF in this manner, the rationale for the decision will be announced to the market. This will be reviewed annually at the March-quarter index rebalancing date.

#### Index Calculation

The AS51 is calculated using a base-weighted aggregate methodology. The value of the AS51 on any day for which an index value is published is determined by a fraction, the numerator of which is the sum for all component stocks of the products of the price of each stock in the AS51 times the number of shares of such stock included in the AS51 times that stock's IWF, and the denominator of which is the divisor, which is described more fully below.

In order to prevent the value of the AS51 from changing due to corporate actions, all corporate actions may require S&P to make an index or divisor adjustment. This helps maintain the value of the AS51 and ensures that the movement of the AS51 does not reflect the corporate actions of the individual companies that comprise the AS51.

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The table below summarizes the types of index adjustments and indicates whether the corporate action will require a divisor adjustment:

Type of Corporate Action	Index Treatment	Divisor Adjustment Required
Cash dividend	None	No
Special Cash Dividend	Price adjustment needed	Yes
Stock dividend and/or split	Shares are multiplied by and price is divided by the split factor	No
Stock dividend from class A shares into existing class B shares, both of which are included in the AS51	Adjustment for price of A; adjustment for shares in B	Yes
Stock dividend of different class, same company and is not included in the AS51	Price adjustment	Yes
Reverse Split	Adjustment for price and shares	No
Rights Offering	Adjustment for price and shares	Yes
Rights offering for a new line	Adjustment for price	Yes
New share issuance	Adjustment for shares	Yes
Reduction of capital	Share adjustment	Yes
New addition to index	Share adjustment	Yes
Deletion from index	Share adjustment	Yes
Merger (acquisition by index company for stock)	Share increase	Yes

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A company that is spun-off from an index constituent will be added to the index at a zero price on the ex-date. If the spun-off company is not eligible to be included in the AS51 index based on its float adjusted market capitalization then it will be removed from the AS51 at least after one day of trading regular way. In situations where an exchange is forced to close early due to unforeseen events, such as computer or electric power failures, weather conditions or other events, S&P will calculate the closing price of the indices based on (1) the closing prices published by the exchange, or (2) if no closing price is available, the last regular trade reported for each security before the exchange closed. If the exchange fails to open due to unforeseen circumstances, S&P treats this closure as a standard market holiday. The AS51 will use the prior day's closing prices and shifts any corporate actions to the following business day. If all exchanges fail to open or in other extreme circumstances, S&P may determine not to publish the AS51 for that day.

#### Recalculation Policy

S&P reserves the right to recalculate and republish the S&P/ASX 200 Index 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 corporate event; (3) incorrect application of corporate action or index methodology; (4) late announcement of a corporate event; or (5) incorrect calculation or data entry error. The decision to recalculate the S&P/ASX 200 Index 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 the potential recalculation is considered when making any such decision. In the event of an incorrect closing price, a missed corporate event or a 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, the index manager may, at his or her discretion, recalculate the S&P/ASX 200 Index without involving the index committee. In the event any such event is discovered beyond the two trading day period, the index committee shall decide whether the S&P/ASX 200 Index 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 S&P/ASX 200 Index following specified guidelines. In the event that the S&P/ASX 200 Index is recalculated, it shall be done within a reasonable timeframe following the detection and review of the issue.

#### Calculations and Pricing Disruptions

Prices used to calculate the S&P/ASX 200 Index are obtained from IDC and Thomson Reuters. If the relevant exchange suffers a failure or interruption, real-time calculations are halted until the exchange confirms that trading and price dissemination has resumed.

If the interruption is not resolved before the market close and the exchange publishes a list of closing prices, those prices are used to calculate the closing value of the S&P/ASX 200 Index. If no list is published, the last trade for each security before the interruption is used to calculate the closing value of the S&P/ASX 200 Index. If no trades were reported for a security, the previous close adjusted for corporate actions is used for index calculation.

In extreme circumstances, S&P may decide to delay index adjustments or not publish the S&P/ASX 200 Index.

#### 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.

In the event of an unexpected exchange closure, S&P uses the following guidelines:

- (i) If an unexpected exchange closure occurs prior to the open of trading and it is indicated that trading will not open for a given day, S&P Dow Jones Indices will treat the day as an unscheduled market holiday.

- (ii) If a market disruption occurs intraday, S&P will wait for the impacted exchange to publish a list of closing prices, which will then be used to calculate the closing index values. If no list is published, the last trade for each security before the interruption is used to calculate the index closing value. If no trades were reported for a security, the previous closing price, adjusted for corporate actions, is used for index calculation.

#### License Agreement

The S&P/ASX Index is a product of S&P or its affiliates (“SPDJI”) and Australian Securities Exchange, and has been licensed for use by the Bank for a fee. Standard & Poor’s® and S&P® are registered trademarks of Standard & Poor’s Financial Services LLC (“S&P Financial”) and Dow Jones is a registered trademark of Dow Jones Trademark Holdings LLC (“Dow Jones”). ASX is a registered trademark of Australian Securities Exchange. The trademarks have been licensed to SPDJI and have been sublicensed for use for certain purposes by the Bank. The notes are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P Financial, any of their respective affiliates (collectively, “S&P Dow Jones Indices”) or Australian Securities Exchange. Neither S&P Dow Jones Indices nor Australian Securities Exchange make any 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 S&P/ASX Index to track general market performance. S&P Dow Jones Indices and Australian Securities Exchange only relationship to The Bank of Nova Scotia with respect to the S&P/ASX Index is the licensing of the Index and certain trademarks, service marks and/or trade names of S&P Dow Jones Indices and/or its licensors. The S&P/ASX Index is determined, composed and calculated by S&P Dow Jones Indices or Australian Securities Exchange without regard to The Bank of Nova Scotia or the notes. S&P Dow Jones Indices and Australian Securities Exchange have no obligation to take the needs of The Bank of Nova Scotia or the owners of the notes into consideration in determining, composing or calculating the S&P/ASX Index. Neither S&P Dow Jones Indices nor Australian Securities Exchange are 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 notes are to be converted into cash, surrendered or redeemed, as the case may be. S&P Dow Jones Indices and Australian Securities Exchange 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 S&P/ASX Index will accurately track index performance or provide positive investment returns. S&P is not an investment advisor. Inclusion of a security within an index 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.

NEITHER S&P DOW JONES INDICES NOR THIRD PARTY LICENSOR GUARANTEES THE ADEQUACY, ACCURACY, TIMELINESS AND/OR THE COMPLETENESS OF THE S&P/ASX INDEX 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 AND AUSTRALIAN STOCK EXCHANGE SHALL NOT BE SUBJECT TO ANY DAMAGES OR LIABILITY FOR ANY ERRORS, OMISSIONS, OR DELAYS THEREIN. S&P DOW JONES INDICES AND AUSTRALIAN STOCK EXCHANGE 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 BANK, OWNERS OF THE NOTES, OR ANY OTHER PERSON OR ENTITY FROM THE USE OF THE S&P/ASX INDEX OR WITH RESPECT TO ANY DATA RELATED THERETO. WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT WHATSOEVER SHALL S&P DOW JONES INDICES OR AUSTRALIAN STOCK EXCHANGE 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 BANK, OTHER THAN THE LICENSORS OF S&P DOW JONES INDICES.

### Historical High, Low and Closing Levels of the Basket Component

The level of the basket component has fluctuated in the past and may, in the future, experience significant fluctuations. Any historical upward or downward trend in the level of the basket component during any period shown below is not an indication that the basket component is more or less likely to increase or decrease at any time during the life of your notes.

The following table sets forth the quarterly high and low closing levels for the basket component, based on the daily closing level as reported by Bloomberg without independent verification. The level of the basket component on October 29, 2018 was 5,728.155. Past performance of the basket component is not indicative of the future performance of the basket component.

Quarter Begin	Quarter End	Quarterly Closing High	Quarterly Closing Low	Quarterly Close
1/1/2012	3/31/2012	4,343.514	4,101.157	4,335.242
4/1/2012	6/30/2012	4,435.907	3,985.025	4,094.633
7/1/2012	9/30/2012	4,418.360	4,067.971	4,387.018
10/1/2012	12/31/2012	4,671.299	4,336.848	4,648.950
1/1/2013	3/30/2013	5,146.905	4,690.250	4,966.499
4/1/2013	6/30/2013	5,220.987	4,655.960	4,802.591
7/1/2013	9/30/2013	5,307.061	4,710.289	5,218.877
10/1/2013	12/31/2013	5,441.411	5,062.516	5,352.210
1/1/2014	3/31/2014	5,462.309	5,070.311	5,394.831
4/1/2014	6/30/2014	5,536.073	5,358.948	5,395.747
7/1/2014	9/30/2014	5,658.511	5,264.217	5,292.812
10/1/2014	12/31/2014	5,549.130	5,152.343	5,411.018
1/1/2015	3/31/2015	5,975.491	5,299.237	5,891.505
4/1/2015	6/30/2015	5,982.694	5,422.487	5,459.010
7/1/2015	9/30/2015	5,706.715	4,918.429	5,021.629
10/1/2015	12/31/2015	5,351.565	4,909.555	5,295.900
1/1/2016	3/31/2016	5,270.475	4,765.346	5,082.785
4/1/2016	6/30/2016	5,408.017	4,924.385	5,233.375
7/1/2016	9/30/2016	5,587.392	5,197.500	5,435.921
10/1/2016	12/31/2016	5,699.068	5,156.556	5,665.800
1/1/2017	3/31/2017	5,896.229	5,610.972	5,864.905
4/1/2017	6/30/2017	5,956.523	5,665.721	5,721.494
7/1/2017	9/30/2017	5,785.102	5,655.420	5,681.610
10/1/2017	12/31/2017	6,088.143	5,651.766	6,065.129
1/1/2018	3/31/2018	6,135.807	5,759.365	5,759.365
4/1/2018	6/30/2018	6,232.134	5,751.924	6,194.633
7/1/2018	9/30/2018	6,352.236	6,128.717	6,207.561
10/1/2018*	10/29/2018*	6,185.486	5,664.066	5,728.155

\* As of the date of this pricing supplement, available information for the fourth calendar quarter of 2018 includes data for the period from October 1, 2018 through October 29, 2018. Accordingly, the “Quarterly Closing High,” “Quarterly Closing Low” and “Quarterly Close” data indicated are for this shortened period only and do not reflect complete data for the fourth calendar quarter of 2018.



The graph below illustrates the performance of the basket component from January 1, 2008 through October 29, 2018, based on information from Bloomberg. Past performance of the basket component is not indicative of the future performance of the basket component.

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#### SUPPLEMENTAL PLAN OF DISTRIBUTION (CONFLICTS OF INTEREST)

SCUSA, our affiliate, will purchase the notes at the principal amount and, as part of the distribution of the notes, will sell the notes to GS&Co. at a discount reflecting commissions of \$25.00 per \$1,000 principal amount of notes. The commissions per \$1,000 principal amount are comprised of \$2.50 of fees and \$22.50 of selling commission. In accordance with the terms of a distributor accession letter, GS&Co. has been appointed as a distribution agent under the distribution agreement and may purchase notes from the Bank or its affiliates. At the time we issue the notes, we will enter into certain hedging arrangements (which may include call options, put options or other derivatives) with GS&Co. or one of its affiliates.

In addition, SCUSA, GS&Co. and their respective affiliates or agents may use the accompanying product prospectus supplement to which this pricing supplement relates in market-making transactions after the initial sale of the notes. While SCUSA and GS&Co. may make markets in the notes, they are under no obligation to do so and may discontinue any market-making activities at any time without notice. See the sections titled “Supplemental Plan of Distribution (Conflicts of Interest)” in the accompanying prospectus supplement and accompanying product prospectus supplement.

The price at which you purchase the notes includes costs that the Bank, GS&Co. or their respective affiliates expect to incur and profits that the Bank, GS&Co. or their respective affiliates expect to realize in connection with hedging activities related to the notes, as set forth above. These costs and profits will likely reduce the secondary market price, if any secondary market develops, for the notes. As a result, you may experience an immediate and substantial decline in the market value of your notes on the original issue date.

#### Conflicts of interest

Each of SCUSA and Scotia Capital Inc. is an affiliate of the Bank and, as such, has a “conflict of interest” in this offering within the meaning of FINRA Rule 5121. In addition, the Bank will receive the gross proceeds from the initial public offering of the notes, thus creating an additional conflict of interest within the meaning of Rule 5121. Consequently, the offering is being conducted in compliance with the provisions of Rule 5121. Neither SCUSA nor Scotia Capital Inc. is permitted to sell notes in this offering to an account over which it exercises discretionary authority without the prior specific written approval of the account holder.

SCUSA, GS&Co., and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. SCUSA, GS&Co., and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for the Bank, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, SCUSA, GS&Co., and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of the Bank. SCUSA, GS&Co., and their respective affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Additionally, because the dealer from which you purchase notes is to conduct hedging activities for us in connection with the notes, that dealer may profit in connection with such hedging activities and such profit, if any, will be in addition to the compensation that the dealer receives for the sale of the notes to you. You should be aware that the potential to earn fees in connection with hedging activities may create a further incentive for the dealer to sell the notes to you in addition to the compensation they would receive for the sale of the notes.

**Prohibition of Sales to EEA Retail Investors**

The notes are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the European Economic Area (“EEA”). For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU, as amended (“MiFID II”); (ii) a customer within the meaning of Directive 2002/92/EC, as amended, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (iii) not a qualified investor as defined in Directive 2003/71/EC, as amended. Consequently no key information document required by Regulation (EU) No 1286/2014, as amended (the “PRIIPs Regulation”), for offering or selling the notes or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

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## EVENTS OF DEFAULT AND ACCELERATION

If the notes have become immediately due and payable following an event of default (as defined in the accompanying prospectus) with respect to the notes, the calculation agent will determine the default amount as described below.

### Default Amount

The default amount for your notes on any day (except as provided in the last sentence under “Default Quotation Period” below) will be an amount, in the specified currency for the principal of your notes, equal to the cost of having a qualified financial institution, of the kind and selected as described below, expressly assume all our payment and other obligations with respect to your notes as of that day and as if no default or acceleration had occurred, or to undertake other obligations providing substantially equivalent economic value to you with respect to your notes. That cost will equal:

- the lowest amount that a qualified financial institution would charge to effect this assumption or undertaking, plus the reasonable expenses, including reasonable attorneys’ fees, incurred by the trustees of your notes in preparing any documentation necessary for this assumption or undertaking.

During the default quotation period for your notes, described below, the trustees and/or the Bank may request a qualified financial institution to provide a quotation of the amount it would charge to effect this assumption or undertaking. If either party obtains a quotation, it must notify the other party in writing of the quotation. The amount referred to in the first bullet point above will equal the lowest or, if there is only one, the only quotation obtained, and as to which notice is so given, during the default quotation period. With respect to any quotation, however, the party not obtaining the quotation may object, on reasonable and significant grounds, to the assumption or undertaking by the qualified financial institution providing the quotation and notify the other party in writing of those grounds within two business days after the last day of the default quotation period, in which case that quotation will be disregarded in determining the default amount.

### Default Quotation Period

The default quotation period is the period beginning on the day the default amount first becomes due (the “due day”) and ending on the third business day after that day, unless:

- no quotation of the kind referred to above is obtained, or
- every quotation of that kind obtained is objected to within five business days after the due day as described above.

If either of these two events occurs, the default quotation period will continue until the third business day after the first business day on which prompt notice of an objection is given as described above. If that quotation is objected to as described above within five business days after that first business day, however, the default quotation period will continue as described in the prior sentence and this sentence.

### Qualified Financial Institutions

For the purpose of determining the default amount at any time, a qualified financial institution must be a financial institution organized under the laws of any jurisdiction in the United States of America, Europe or Japan, which at that time has outstanding debt obligations with a stated maturity of one year or less from the date of issue and that is, or whose securities are, rated either:

- A-1 or higher by Standard & Poor’s Ratings Services, or any successor, or any other comparable rating then used by that rating agency, or
- P-1 or higher by Moody’s Investors Service or any successor, or any other comparable rating then used by that rating agency.

If the notes have become immediately due and payable following an event of default, you will not be entitled to any additional payments with respect to the notes. For more information, see “Description of the Debt Securities We May Offer—Events of Default” beginning on page 27 of the accompanying prospectus.

#### TAX REDEMPTION

The Bank (or its successor) may redeem the notes, in whole but not in part, at a redemption price determined by the calculation agent in a manner reasonably calculated to preserve your and our relative economic position, upon the giving of a notice as described below, if:

as a result of any change (including any announced prospective change) in or amendment to the laws (or any regulations or rulings promulgated thereunder) of Canada (or the jurisdiction of organization of the successor to the Bank) or of any political subdivision or taxing authority thereof or therein affecting taxation, or any change in official position regarding the application or interpretation of such laws, regulations or rulings (including a holding by a court of competent jurisdiction), which change or amendment is announced or becomes effective on or after the trade date (or, in the case of a successor to the Bank, after the date of succession), and which in the written opinion to the Bank (or its successor) of legal counsel of recognized standing has resulted or will result (assuming, in the case of any announced prospective change, that such announced change will become effective as of the date specified in such announcement and in the form announced) in the Bank (or its successor) becoming obligated to pay, on the next succeeding date on which a payment is due, additional amounts with respect to the notes; or

on or after the trade date (or, in the case of a successor to the Bank, after the date of succession), any action has been taken by any taxing authority of, or any decision has been rendered by a court of competent jurisdiction in, Canada (or the jurisdiction of organization of the successor to the Bank) or any political subdivision or taxing authority thereof or therein, including any of those actions specified in the paragraph immediately above, whether or not such action was taken or decision was rendered with respect to the Bank (or its successor), or any change, amendment, application or interpretation shall be officially proposed, which, in any such case, in the written opinion to the Bank (or its successor) of legal counsel of recognized standing, will result (assuming, that such change, amendment or action is applied to the notes by the taxing authority and that, in the case of any announced prospective change, that such announced change will become effective as of the date specified in such announcement and in the form announced) in the Bank (or its successor) becoming obligated to pay, on the next succeeding date on which a payment is due, additional amounts with respect to the notes;

and, in any such case, the Bank (or its successor), in its business judgment, determines that such obligation cannot be avoided by the use of reasonable measures available to it (or its successor).

In the event the Bank elects to redeem the notes pursuant to the provisions set forth in the preceding paragraph, the calculation agent shall determine the redemption price and deliver to the trustees a certificate, signed by an authorized officer, stating that the Bank is entitled to redeem such notes pursuant to their terms in whole only.

The Bank will give notice of intention to redeem such notes to holders of the notes not more than 45 nor less than 30 days prior to the date fixed for redemption specifying, among other things, the date fixed for redemption, and on or promptly after the redemption date, it will give notice of the redemption price.

Other than as described above, the notes are not redeemable prior to their maturity.

#### MATERIAL CANADIAN INCOME TAX CONSEQUENCES

See “Supplemental Discussion of Canadian Tax Consequences” beginning on page PS-24 of the accompanying product prospectus supplement.

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS

The U.S. federal income tax consequences of your investment in the notes are uncertain. There are no statutory provisions, regulations, published rulings or judicial decisions addressing the characterization for U.S. federal income tax purposes of securities with terms that are substantially the same as the notes. No ruling from the U.S. Internal Revenue Service (the “IRS”) has been sought as to the U.S. federal income tax consequences of your investment in the notes, and the following discussion is not binding on the IRS. Some of these tax consequences are summarized below, but we urge you to read the more detailed discussion under “Supplemental Discussion of U.S. Federal Income Tax Consequences” in the product prospectus supplement and to discuss the tax consequences of your particular situation with your tax advisor. This discussion is based upon the Internal Revenue Code of 1986, as amended (the “Code”), final, temporary and proposed U.S. Treasury Department (the “Treasury”) regulations, rulings and decisions, in each case, as available and in effect as of the date hereof, all of which are subject to change, possibly with retroactive effect. Tax consequences under state, local and non-U.S. laws are not addressed herein.

U.S. Tax Treatment. Your notes will be treated as contingent payment debt instruments (“CPDI”) subject to taxation under the “noncontingent bond method”. If your notes are so treated, you should generally, for each accrual period, accrue original issue discount (“OID”) equal to the product of (i) the “comparable yield” (adjusted for the length of the accrual period) and (ii) the “adjusted issue price” of the notes at the beginning of the accrual period. This amount is ratably allocated to each day in the accrual period and is includible as ordinary interest income by a U.S. holder for each day in the accrual period on which the U.S. holder holds the CPDI, whether or not the amount of any payment is fixed or determinable in the taxable year. Thus, the noncontingent bond method will result in recognition of income prior to the receipt of cash.

In general, the comparable yield of a CPDI is equal to the yield at which we would issue a fixed rate debt instrument with terms and conditions similar to those of the CPDI, including the level of subordination, term, timing of payments, and general market conditions. In general, because similar fixed rate debt instruments issued by us are traded at a price that reflects a spread above a benchmark rate, the comparable yield is the sum of the benchmark rate on the issue date and the spread.

The adjusted issue price at the beginning of each accrual period is generally equal to the issue price of the note plus the amount of OID previously includible in the gross income of the U.S. holder.

In addition to the determination of a comparable yield, the noncontingent bond method requires the construction of a projected payment schedule. The projected payment schedule includes the projected amounts for each contingent payment to be made under the CPDI that are adjusted to produce the comparable yield. We have determined that the comparable yield for the notes is equal to [ ]% per annum, compounded semi-annually, with a projected payment at maturity of \$[ ] based on an investment of \$1,000.

Based on this comparable yield, if you are an initial holder that holds a note until maturity and you calculate your taxes on a calendar year basis, we have determined that you would be required to report the following amounts as ordinary interest income from the note, not taking into account any positive or negative adjustments you may be required to take into account based on actual payments on such note:

Accrual Period	Interest Deemed to Accrue During Accrual Period (per \$1,000 Note)	Total Interest Deemed to Have Accrued From Original Issue Date (per \$1,000 Note) as of End of Accrual Period
[ ], 2018 through December 31, 2018	\$[ ]	\$[ ]
January 1, 2019 through December 31, 2019	\$[ ]	\$[ ]
January 1, 2020 through December 31, 2020	\$[ ]	\$[ ]
January 1, 2021 through [ ]	\$[ ]	\$[ ]

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A U.S. holder of the notes is required to use our projected payment schedule to determine its interest accruals and adjustments, unless such holder determines that our projected payment schedule is unreasonable, in which case such holder must disclose its own projected payment schedule in connection with its U.S. federal income tax return and the reason(s) why it is not using our projected payment schedule. Neither the comparable yield nor the projected payment schedule constitutes a representation by us regarding the actual contingent amount(s) that we will pay on a note. If the actual amounts of contingent payments are different from the amounts reflected in the projected payment schedule, a U.S. holder is required to make adjustments in its OID accruals under the noncontingent bond method described above when those amounts are paid. Accordingly, an adjustment arising from the contingent payment made at maturity that is greater than the assumed amount of such payment is referred to as a “positive adjustment”; such adjustment arising from the contingent payment at maturity that is less than the assumed amount of such payment is referred to as a “negative adjustment”. Any positive adjustment for a taxable year is treated as additional OID income of the U.S. holder. Any net negative adjustment reduces any OID on the note for the taxable year that would otherwise accrue. Any excess is then treated as a current-year ordinary loss to the U.S. holder to the extent of OID accrued in prior years. If a barrier event occurs during the observation period more than six months prior to the maturity date, then an adjustment, which may be positive or negative, will be required upon the occurrence of such barrier event. Subsequently, you should be required to accrue income based on the adjusted issue price and the known amounts to be paid at maturity. You should consult your tax advisor concerning such adjustments and subsequent accruals upon the occurrence of a barrier event during the observation period.

In general, a U.S. holder’s basis in a CPDI is increased by the projected contingent payments accrued by such holder under the projected payment schedule (as determined without regard to adjustments made to reflect differences between actual and projected payments) and reduced by the projected amount of any contingent payments previously made. Gain on the taxable disposition of a CPDI generally is treated as ordinary income. Loss, on the other hand, is treated as ordinary loss only to the extent of the U.S. holder’s prior net OID inclusions (i.e., reduced by the total net negative adjustments previously allowed to the U.S. holder as an ordinary loss) and capital loss to the extent in excess thereof. However, the deductibility of a capital loss realized on the taxable disposition of a note is subject to limitations. Under the rules governing CPDI, special rules would apply to a person who purchases notes at a price other than the adjusted issue price as determined for tax purposes.

A U.S. holder that purchases a note for an amount other than the public offering price of the note will be required to adjust its OID inclusions to account for the difference. These adjustments will affect the U.S. holder’s basis in the note. Reports to U.S. holders may not include these adjustments. U.S. holders that purchase notes at other than the public offering price should consult their tax advisor regarding these adjustments.

Prospective investors should consult their tax advisor with respect to the application of the CPDI provisions to the notes.

Based on certain factual representations received from us, our special U.S. tax counsel, Cadwalader, Wickersham & Taft LLP, is of the opinion that your notes should be treated in the manner described above.

**Alternative Characterizations.** However, because there is no authority that specifically addresses the tax treatment of the notes, it is possible that your notes could alternatively be treated pursuant to some other characterization, such that the timing and character of your income from the notes could differ materially and adversely from the treatment described above. In particular, the IRS might assert that the notes should be treated as deemed to be redeemed and reissued on any rebalancing of the reference asset or rollover of, or change to, the component stocks.

**Medicare Tax on Net Investment Income.** U.S. holders that are individuals or estates and certain trusts are subject to an additional 3.8% tax on all or a portion of their “net investment income,” or “undistributed net investment income” in the case of an estate or trust, which may include any income or gain with respect to the notes, to the extent of their net investment income or undistributed net investment income (as the case may be) that, when added to their other modified adjusted gross income, exceeds \$200,000 for an unmarried individual, \$250,000 for a married taxpayer filing a joint return (or a surviving spouse), \$125,000 for a married individual filing a separate return or the dollar amount at which the highest tax bracket begins for an estate or trust. The 3.8% Medicare tax is determined in a different manner than the regular income tax. U.S. holders should consult their tax advisors as to the consequences of the 3.8% Medicare tax with respect to their investment in the notes.



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**Specified Foreign Financial Assets.** Certain U.S. holders that own “specified foreign financial assets” in excess of an applicable threshold may be subject to reporting obligations with respect to such assets with their tax returns, especially if such assets are held outside the custody of a U.S. financial institution. You are urged to consult your tax advisor as to the application of this legislation to your ownership of the notes.

**Non-U.S. Holders.** This section applies only if you are a non-U.S. holder. For these purposes, you are a non-U.S. holder if you are the beneficial owner of the notes and are, for U.S. federal income tax purposes:

- a non-resident alien individual;
- a non-U.S. corporation; or
- an estate or trust that, in either case, is not subject to U.S. federal income tax on a net income basis on income or gain from the notes.

If you are a non-U.S. holder, subject to Section 871(m) of the Code and FATCA, discussed below, you should generally not be subject to U.S. withholding tax with respect to payments on your notes or to generally applicable information reporting and backup withholding requirements with respect to payments on your notes if you comply with certain certification and identification requirements as to your non-U.S. status including providing us (and/or the applicable withholding agent) a properly executed and fully completed applicable IRS Form W-8. Subject to Section 871(m) of the Code, as discussed below, gain from taxable disposition of the notes generally will not be subject to U.S. tax unless (i) such gain is effectively connected with a trade or business conducted by you in the U.S., (ii) you are a non-resident alien individual and are present in the U.S. for 183 days or more during the taxable year of such taxable disposition and certain other conditions are satisfied or (iii) you have certain other present or former connections with the U.S.

**Section 871 (m).** A 30% withholding tax (which may be reduced by an applicable income tax treaty) is imposed under Section 871(m) of the Code on certain “dividend equivalents” paid or deemed paid to a non-U.S. holder with respect to a “specified equity-linked instrument” that references one or more dividend-paying U.S. equity securities or indices containing U.S. equity securities. The withholding tax can apply even if the instrument does not provide for payments that reference dividends. Treasury regulations provide that the withholding tax applies to all dividend equivalents paid or deemed paid on specified equity-linked instruments that have a delta of one (“delta one specified equity-linked instruments”) issued after 2016 and to all dividend equivalents paid or deemed paid on all other specified equity-linked instruments issued after 2018. However, the IRS has issued guidance that states that the Treasury and the IRS intend to amend the effective dates of the Treasury regulations to provide that withholding on dividend equivalents paid or deemed paid will not apply to specified equity-linked instruments that are not delta-one specified equity-linked instruments and are issued before January 1, 2021.

Based on our determination that the notes are not “delta-one” with respect to the reference asset or any U.S. component stocks, our special U.S. tax counsel is of the opinion that the notes should not be delta one specified equity-linked instruments and thus should not be subject to withholding on dividend equivalents. Our determination is not binding on the IRS, and the IRS may disagree with this determination. Furthermore, the application of Section 871(m) of the Code will depend on our determinations made upon issuance of the notes. If withholding is required, we will not make payments of any additional amounts.

Nevertheless, after issuance, it is possible that your notes could be deemed to be reissued for tax purposes upon the occurrence of certain events affecting the reference asset, any U.S. component stocks or your notes, and following such occurrence your notes could be treated as delta one specified equity-linked instruments that are subject to withholding on dividend equivalents. It is also possible that withholding tax or other tax under Section 871(m) of the Code could apply to the notes under these rules if you enter, or have entered, into certain other transactions in respect of the reference asset, any U.S. component stocks or the notes. If you enter, or have entered, into other transactions in respect of the reference asset, any U.S. component stocks or the notes, you should consult your tax advisor regarding the application of Section 871(m) of the Code to your notes in the context of your other transactions.

Because of the uncertainty regarding the application of the 30% withholding tax on dividend equivalents to the notes, you are urged to consult your tax advisor regarding the potential application of Section 871(m) of the Code and the 30% withholding tax to an investment in the notes.

**U.S. Federal Estate Tax Treatment of Non-U.S. Holders.** A note may be subject to U.S. federal estate tax if an individual non-U.S. holder holds the note at the time of his or her death. The gross estate of a non-U.S. holder

domiciled outside the U.S. includes only property situated in the U.S. Individual non-U.S. holders should consult their tax advisors regarding the U.S. federal estate tax consequences of holding the notes at death.

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FATCA. The Foreign Account Tax Compliance Act (“FATCA”) was enacted on March 18, 2010, and imposes a 30% U.S. withholding tax on “withholdable payments” (i.e., certain U.S.-source payments, including interest (and original issue discount), dividends, other fixed or determinable annual or periodical gain, profits, and income, and on the gross proceeds from a disposition of property of a type which can produce U.S.-source interest or dividends) and “passthru payments” (i.e., certain payments attributable to withholdable payments) made to certain foreign financial institutions (and certain of their affiliates) unless the payee foreign financial institution agrees (or is required), among other things, to disclose the identity of any U.S. individual with an account at the institution (or the relevant affiliate) and to annually report certain information about such account. FATCA also requires withholding agents making withholdable payments to certain foreign entities that do not disclose the name, address, and taxpayer identification number of any substantial U.S. owners (or do not certify that they do not have any substantial U.S. owners) to withhold tax at a rate of 30%. Under certain circumstances, a holder may be eligible for refunds or credits of such taxes.

Pursuant to final and temporary Treasury regulations and other IRS guidance, the withholding and reporting requirements under FATCA will generally apply to certain “withholdable payments” made on or after July 1, 2014, certain gross proceeds on a sale or disposition occurring after December 31, 2018, and certain foreign passthru payments made after December 31, 2018 (or, if later, the date that final regulations defining the term “foreign passthru payment” are published). If withholding is required, we (and/or the applicable paying agent) will not be required to pay additional amounts with respect to the amounts so withheld. Foreign financial institutions and non-financial foreign entities located in jurisdictions that have an intergovernmental agreement with the U.S. governing FATCA may be subject to different rules.

Investors should consult their own advisors about the application of FATCA, in particular if they may be classified as financial institutions (or if they hold their notes through a non-U.S. entity) under the FATCA rules.

As mentioned above, alternative characterizations of the notes for U.S. federal income tax purposes are possible. Should an alternative characterization of the notes cause payments with respect to the notes to become subject to withholding tax, we (and/or the applicable withholding agent) will withhold tax at the applicable statutory rate and we will not make payments of any additional amounts.

Both U.S. and non-U.S. holders should consult their tax advisors regarding the U.S. federal income tax consequences of an investment in the notes, as well as any tax consequences arising under the laws of any state, local or non-U.S. taxing jurisdiction (including that of the Bank and the issuers of the component stocks).