



NATIONAL BANK OF CANADA

(as Issuer)

NATIONAL BANK OF CANADA, NEW YORK BRANCH

(as Guarantor)

\$ Contingent Coupon Notes Linked to the Lowest Performing of the Invesco QQQ TrustSM, Series 1, the iShares[®] Russell 2000 ETF and the SPDR[®] S&P 500[®] ETF Trust due August 16, 2024

- The Contingent Coupon Notes (the “notes”) will provide quarterly Contingent Coupon Payments at a rate of 2.9375% per quarter (11.750% per annum) until maturity if, **and only if**, the Closing Level of **each** Reference Asset on the applicable quarterly Coupon Payment Valuation Date is greater than or equal to its Coupon Payment Threshold (75% of its Initial Level).
- The Redemption Payment at Maturity per \$1,000 in principal amount of the notes will depend on the Lowest Reference Asset Return on the Final Valuation Date and will be calculated as follows:
 - a. If the Lowest Reference Asset Return is greater than or equal to -25%: \$1,000 + final Contingent Coupon Payment.
 - b. If the Lowest Reference Asset Return is less than -25%: \$1,000 × (1 + Lowest Reference Asset Return).

In this case, you will lose some or all of the principal amount at maturity. Even with any Contingent Coupon Payments, the return on the notes could be negative.
- The notes will not be listed on any securities exchange.
- The notes will be issued in minimum denomination of \$1,000 and integral multiples of \$1,000.

Investing in the notes involves risks not associated with an investment in ordinary debt securities. See “Additional Risk Factors” beginning on page PS-7 of this pricing supplement, and “Risk Factors” beginning on page PS-3 of the product supplement and page 6 of the offering circular.

	Initial Issue Price ⁽¹⁾	Agent’s Commission ⁽¹⁾⁽²⁾	Proceeds to Issuer
Per Note	\$1,000	\$3	\$997
Total	\$	\$	\$

- (1) Because certain dealers who purchase the notes for sale to certain fee-based advisory accounts may forgo some or all of their commissions or selling concessions, the initial issue price for investors purchasing the notes in these accounts will be between \$997.00 and \$1,000.00 per note.
- (2) National Bank of Canada Financial Inc. (“NBCFI”) will receive commissions from the Issuer of up to 0.30% of the principal amount of the notes, or up to \$3.00 per \$1,000 principal amount. NBCFI will use these commissions to pay variable selling concessions or fees (including custodial or clearing fees) to other dealers. The actual commission received by NBCFI will be equal to the selling concession paid to such dealers.

The estimated value of your notes at the time the terms of your notes are set on the trade date is expected to be between \$940 and \$970 per \$1,000 principal amount, which will be less than the initial issue price. See “Additional Risk Factors” beginning on page PS-7 of this pricing supplement for additional information.

The notes will not be, and are not required to be, registered with the Securities and Exchange Commission (the “SEC”) under the United States Securities Act of 1933, as amended (the “Securities Act”). The notes will not be approved or disapproved by the SEC or any state securities commission, nor has the SEC or any state securities commission passed upon the accuracy or adequacy of this pricing supplement. Any representation to the contrary is a criminal offense.

The notes will initially be offered and sold pursuant to an exemption from registration provided by Section 3(a)(2) of the Securities Act. See “Description of the Notes” in the accompanying offering circular for a description of the manner in which the notes will be issued. The notes are subject to certain restrictions on transfer; see “Plan of Distribution and Conflicts of Interest” in the accompanying offering circular.

The notes are not bank deposits insured or guaranteed by the Federal Deposit Insurance Corporation or any other governmental agency or authority in the United States. While the notes will constitute deposits for purposes of the Bank Act (Canada), they are not insured or guaranteed by any governmental agency or authority in Canada or any other jurisdiction, or under the Canada Deposit Insurance Corporation Act (Canada). The notes are not otherwise guaranteed by any person. The notes are not Bail-inable Notes (as defined in the accompanying offering circular).

The notes will constitute legal, valid and binding direct, unconditional, unsubordinated and unsecured obligations of National Bank of Canada (the “Bank”) and will rank equally with all deposit liabilities of the Bank without any preference among themselves (save for any applicable statutory provisions) and equally with all other present and future unsecured and unsubordinated obligations of the Bank, from time to time outstanding, except for certain governmental claims.

We expect to deliver the notes in book-entry form through the facilities of The Depository Trust Company (“DTC”) on or about February 23, 2023 against payment in immediately available funds.

National Bank of Canada Financial Inc.

SUMMARY

The information in this “Summary” section is qualified by the more detailed information set forth in the product supplement and the offering circular.

Issuer:	National Bank of Canada
Guarantor:	National Bank of Canada, New York Branch
Reference Assets:	The Invesco QQQ Trust SM , Series 1 (Bloomberg ticker “QQQ UQ Equity”) (the “QQQ”), the iShares [®] Russell 2000 ETF (Bloomberg ticker “IWM UP Equity”) (the “IWM”) and the SPDR [®] S&P 500 [®] ETF Trust (Bloomberg ticker “SPY UP Equity”) (the “SPY”) (each, a “Reference Asset”)
Principal Amount:	\$1,000 per note
Aggregate Principal Amount:	\$
Pricing Date:	February 13, 2023
Trade Date:	Expected to be February 15, 2023
Original Issue Date:	Expected to be February 23, 2023
Final Valuation Date:	Expected to be August 13, 2024, subject to postponement as described under “General Terms of the Notes — Determination Date, Averaging Dates and Observation Period— Notes with One Determination Date” beginning on page PS-10 of the product supplement. For each Reference Asset, the calculation agent will determine whether a Market Disruption Event exists on a valuation date with respect to each Reference Asset independent from other Reference Assets.
Maturity Date:	Expected to be August 16, 2024, subject to postponement as described under “General Terms of the Notes — Maturity Date” on page PS-11 of the product supplement.
Contingent Coupon Payment:	<p>On each Coupon Payment Date, you will receive payment at the Contingent Coupon Rate (a “Contingent Coupon Payment”) if, and only if, the Closing Level of each Reference Asset on the applicable Coupon Payment Valuation Date is greater than or equal to its Coupon Payment Threshold.</p> <p>If the Closing Level of any Reference Asset on a Coupon Payment Valuation Date is less than its Coupon Payment Threshold, you will not receive any Contingent Coupon Payment on the related Coupon Payment Date. If the Closing Level of one or more Reference Assets is less than its Coupon Payment Threshold on each quarterly Coupon Payment Valuation Date, you will not receive any Contingent Coupon Payments over the term of the notes.</p> <p>Each quarterly Contingent Coupon Payment, if payable, will be calculated per note as follows: $\\$1,000 \times \text{Contingent Coupon Rate}$. Any Contingent Coupon Payments will be rounded to the nearest cent, with one-half cent rounded upward.</p>
Contingent Coupon Rate:	2.9375% per quarter (equivalent to 11.750% per annum)
Coupon Payment Threshold:	With respect to each Reference Asset, 75% of its Initial Level .

Coupon Payment Valuation Dates:	Expected to be the 13 th day of each May, August, November, February (or, if such day is not a Business Day, the next following Business Day), beginning on May 13, 2023 and ending on the Final Valuation Date. Each Coupon Payment Valuation Date is subject to postponement as described under “General Terms of the Notes — Determination Date, Averaging Dates and Observation Period—Notes with One Determination Date” beginning on page PS-10 of the product supplement, provided that references to “stated maturity date” will be references to “Coupon Payment Date.” For each Reference Asset, the calculation agent will determine whether a Market Disruption Event exists on a valuation date with respect to each Reference Asset independent from other Reference Assets.
Coupon Payment Dates:	The third Business Day following the related Coupon Payment Valuation Date, as postponed, provided that the final Coupon Payment Date will be the Maturity Date.
Redemption Payment at Maturity:	You will receive an amount at maturity per \$1,000 in principal amount of the notes calculated as follows: (i) If the Lowest Reference Asset Return is greater than or equal to the Coupon Barrier and the Maturity Barrier: $\$1,000 + \text{the final Contingent Coupon Payment; or}$ (ii) If the Lowest Reference Asset Return is less than the Maturity Barrier: $\$1,000 \times (1 + \text{Lowest Reference Asset Return}).$ <p><i>In this case, you will lose up to 100% of your principal amount at maturity. Even with any Contingent Coupon Payments, the return on the notes could be negative.</i></p>
Coupon Barrier:	-25%
Maturity Barrier:	-25%
Lowest Reference Asset Return:	The lowest Reference Asset Return of all Reference Asset Returns.
Reference Asset Returns:	For each Reference Asset, its Reference Asset Return will be a number expressed as a percentage calculated as follows: $(\text{Final Level} \div \text{Initial Level}) - 1$
Initial Level:	\$304.50 with respect to the QQQ, \$192.60 with respect to the IWM, and \$412.83 with respect to the SPY, each of which was its Closing Level on the Pricing Date.
Final Level:	For each Reference Asset, its Closing Level on the Final Valuation Date.
Closing Level:	The closing level or closing price, as applicable, of the Reference Asset on any scheduled trading day as determined by the calculation agent based upon the value displayed on the relevant Bloomberg Professional [®] Service (“Bloomberg”) page (with respect to the QQQ, “QQQ UQ <EQUITY>”, with respect to the IWM, “IWM UP <EQUITY>”) and with respect to the SPY, “SPY UP <EQUITY>”), or any successor page on Bloomberg or any successor service, as applicable. With respect to each Reference Asset, its Closing Level is also subject to adjustments by the calculation agent as described under “General Terms of the Notes—Anti-dilution Adjustments for Exchange Traded Funds” beginning on page PS-14 of the accompanying product supplement.
Calculation Agent:	National Bank of Canada.

Business Day: Each Monday, Tuesday, Wednesday, Thursday and Friday that is neither a legal holiday nor a day on which banking institutions are authorized or required by law, regulation or executive order to close in New York City, New York, Toronto, Ontario, or Montréal, Québec.

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Fees and Expenses: 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.

The Trade Date and the other dates set forth above are subject to change and will be set forth in the final pricing supplement.

HYPOTHETICAL REDEMPTION PAYMENT AT MATURITY

The following table and examples are provided for illustrative purposes only and are hypothetical. They do not purport to be representative of every possible scenario concerning increases or decreases in the Final Level of any Reference Asset relative to its Initial Level. We cannot predict the Closing Level of any Reference Asset on any day, including any Coupon Payment Valuation Date and the Final Valuation Date. The assumptions we have made in connection with the illustrations set forth below may not reflect actual events. You should not take this illustration or these examples as an indication or assurance of the expected performance of the Reference Assets or return on the notes. The numbers appearing in the table below and following examples have been rounded for ease of analysis.

The table below illustrates the Redemption Payment at Maturity on a \$1,000 investment in the notes for a hypothetical range of the Lowest Reference Asset Return from -100% to +100%. The following results are based solely on the assumptions outlined below. The “Hypothetical Return on the Notes” as used below is the number, expressed as a percentage, that results from comparing the Redemption Payment at Maturity per \$1,000 principal amount to \$1,000. The potential returns described here assume that the notes are held to maturity, and are calculated excluding any Contingent Coupon Payments paid prior to maturity. The following table and examples are based on the following terms:

Principal Amount:	\$1,000
Contingent Coupon Rate:	2.9375% per quarter (or 11.750% per annum)
Coupon Barrier:	-25.00%
Maturity Barrier:	-25.00%

Hypothetical Lowest Reference Asset Return	Hypothetical Redemption Payment at Maturity	Hypothetical Return on the Notes (Excluding Any Contingent Coupon Payments Paid Prior to Maturity)
100.00%	\$1,029.375 ⁽¹⁾	2.9375%
75.00%	\$1,029.375	2.9375%
50.00%	\$1,029.375	2.9375%
25.00%	\$1,029.375	2.9375%
0.00%	\$1,029.375	2.9375%
-10.00%	\$1,029.375	2.9375%
-20.00%	\$1,029.375	2.9375%
-25.00% ⁽²⁾⁽³⁾	\$1,029.375	2.9375%
-25.01%	\$749.90	-25.010%
-30.00%	\$700.00	-30.000%
-40.00%	\$600.00	-40.000%
-50.00%	\$500.00	-50.000%
-70.00%	\$300.00	-70.000%
-90.00%	\$100.00	-90.000%
-100.00%	\$0.00	-100.000%

- (1) The Redemption Payment at Maturity will not exceed the principal amount plus the final Contingent Coupon Payment.
- (2) This is the Coupon Barrier and the Maturity Barrier.
- (3) The final Contingent Coupon Payment will be payable only if the Lowest Reference Asset Return is greater than or equal to the Coupon Barrier.

The following examples indicate how the Redemption Payment at Maturity would be calculated with respect to a hypothetical \$1,000 investment in the notes.

Example 1: The Lowest Reference Asset Return Is 50.00%.

Because the Lowest Reference Asset Return is greater than the Coupon Barrier, the Redemption Payment at Maturity would be \$1,029.375 per \$1,000 principal amount, calculated as follows:

$$\begin{aligned} & \$1,000 + \text{Final Contingent Coupon Payment} \\ & = \$1,000 + (\$1,000 \times 2.9375\%) \\ & = \$1,029.375 \end{aligned}$$

Example 1 shows that the Redemption Payment at Maturity will be fixed at the principal amount plus the final Contingent Coupon Payment when the Lowest Reference Asset Return is greater than or equal to the Coupon Barrier, regardless the extent to which the level of each Reference Asset increases.

Example 2: The Lowest Reference Asset Return Is -75.00%.

Because the Lowest Reference Asset Return is less than the Maturity Barrier, the Redemption Payment at Maturity would be \$250.00 per \$1,000 principal amount, calculated as follows:

$$\begin{aligned} & \$1,000 \times (1 + \text{Lowest Reference Asset Return}) \\ & = \$1,000 \times (1 + -75.00\%) \\ & = \$250.00 \end{aligned}$$

Example 2 shows that you will lose the principal amount at maturity by an amount equal to the Lowest Reference Asset Return if the Lowest Reference Asset Return is below the Maturity Barrier.

These examples illustrate that you will not participate in any appreciation of any Reference Asset, but will be fully exposed to a decrease in the lowest performing Reference Asset if the Lowest Reference Asset Return is less than the Maturity Barrier, even if the Reference Asset Returns of other Reference Assets are greater than the Maturity Barrier.

INVESTOR SUITABILITY

The notes may be suitable for you if:

- You believe that the Closing Level of each Reference Asset will be at or above its Coupon Payment Threshold on most or all of the Coupon Payment Valuation Dates, and the Lowest Reference Asset Return will be at or above the Coupon Barrier.
- You seek an investment with quarterly Contingent Coupon Payments at a rate of 2.9375% (11.750% per annum) until maturity, if, **and only if**, the Closing Level of each Reference Asset on the applicable Coupon Payment Valuation Date is greater than or equal to its Coupon Payment Threshold.
- You are willing to accept the risk that you may not receive any Contingent Coupon Payments on most or all of the Coupon Payment Dates and may lose up to 100% of the principal amount of the notes at maturity.
- You are willing to invest in the notes based on the fact that your maximum potential return is the sum of any Contingent Coupon Payments payable on the notes.
- You are willing to forgo participation in any appreciation of any Reference Asset.
- You understand that the return on the notes will depend solely on the performance of the lowest performing Reference Asset on each Coupon Payment Valuation Date and consequently, the notes are riskier than alternative investments linked to only one of the Reference Assets or linked to a basket composed of the Reference Assets.
- You do not seek certainty of current income over the term of the notes.
- You are willing to forgo dividends or other distributions paid on the Reference Assets or the securities included in or held by the Reference Assets.
- You do not seek an investment for which there will be an active secondary market.
- You are willing to assume the credit risk of the Bank and the Guarantor for any payments under the notes.

The notes may not be suitable for you if:

- You believe that the Closing Level of at least one Reference Asset will be below its Coupon Payment Threshold on most or all of the Coupon Payment Valuation Dates, and the Lowest Reference Asset Return will be below the Coupon Barrier or that the Contingent Coupon Payments, if any, will not provide you with your desired return.
- You are unwilling to accept the risk that you may not receive any Contingent Coupon Payments on most or all of the Coupon Payment Dates and may lose up to 100% of the principal amount of the notes at maturity.
- You seek full payment of the principal amount of the notes at maturity.
- You seek an uncapped return on your investment.
- You seek exposure to the upside performance of any or each Reference Asset.
- You seek exposure to a basket composed of the Reference Assets or a similar investment in which the overall return is based on a blend of the performances of the Reference Assets, rather than solely on the lowest performing Reference Asset.
- You seek certainty of current income over the term of the notes.
- You want to receive dividends or other distributions paid on the Reference Assets or the securities included in or held by the Reference Assets.
- You seek an investment for which there will be an active secondary market.
- You are not willing to assume the credit risk of the Bank and the Guarantor 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 Risk Factors” below for risks related to the notes.

ADDITIONAL RISK FACTORS

An investment in the notes involves significant risks. In addition to the following risks included in this pricing supplement, we urge you to read “Risk Factors” beginning on page PS-3 of the product supplement and page 6 of the offering circular

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

The notes do not provide for fixed payments of interest and you may receive no Contingent Coupon Payments on most or all of the Coupon Payment Dates.

On each Coupon Payment Date, you will receive a Contingent Coupon Payment if, **and only if**, the Closing Level of each Reference Asset on the related Coupon Payment Valuation Date is greater than or equal to its Coupon Payment Threshold. If the Closing Level of any Reference Asset on any Coupon Payment Valuation Date is less than its Coupon Payment Threshold, you will not receive any Contingent Coupon Payment on the related Coupon Payment Date, and if the Closing Level of at least one Reference Asset is less than its Coupon Payment Threshold on each Coupon Payment Valuation Date over the term of the notes, you will not receive any Contingent Coupon Payments over the entire term of the notes.

You will not participate in any appreciation of any Reference Asset and your return on the notes will be limited to the Contingent Coupon Payments paid on the notes, if any.

The Redemption Payment at Maturity will not exceed the principal amount plus the final Contingent Coupon Payment and any positive return you receive on the notes will be composed solely of the sum of any Contingent Coupon Payments received prior to and at maturity. You will not participate in any appreciation of any Reference Asset. Therefore, if the appreciation of any Reference Asset exceeds the sum of the Contingent Coupon Payments paid to you, if any, the notes will underperform an investment in securities linked to that Reference Asset providing full participation in the appreciation. Accordingly, the return on the notes may be less than the return would be if you made an investment in securities directly linked to the positive performance of the Reference Assets.

The notes are subject to the full risks of the lowest performing Reference Asset and will be negatively affected if any Reference Asset performs poorly, even if the other Reference Assets perform favorably.

You are subject to the full risks of the lowest performing Reference Asset. If any Reference Asset performs poorly, you will be negatively affected, even if the other Reference Assets perform favorably. The notes are not linked to a basket composed of the Reference Assets, where the better performance of some Reference Assets could offset the poor performance of others. Instead, you are subject to the full risks of the lowest performing Reference Asset on each Coupon Payment Valuation Date. As a result, the notes are riskier than an alternative investment linked to only one of the Reference Assets or linked to a basket composed of the Reference Assets. You should not invest in the notes unless you understand and are willing to accept the full downside risks of the lowest performing Reference Asset.

The payments on the notes are not linked to the levels of the Reference Assets at any time other than the Coupon Payment Valuation Dates.

The payments on the notes will be based on the Closing Level of each Reference Asset on the Coupon Payment Valuation Dates. Therefore, for example, if the Closing Level of a Reference Asset declined substantially as of the Coupon Payment Valuation Date compared to its Coupon Payment Threshold, the relevant Contingent Coupon will not be payable. Similarly, if the Final Level of the lowest performing Reference Asset declined substantially as of the Final Valuation Date compared to its Initial Level, the Redemption Payment at Maturity may be significantly less than it would otherwise have been had the Redemption Payment at Maturity been linked to the Closing Level of such Reference Asset prior to the Final Valuation Date. Although the actual level of a Reference Asset at other times during the term of the notes may be greater than its Closing Level on a Coupon Payment Valuation Date, the payments on the notes will not benefit from the Closing Level of such Reference Asset at any time other than the applicable Coupon Payment Valuation Dates.

Payments on the notes are subject to the credit risk of the Bank and the Guarantor, and the value of the notes will be affected by a credit rating reduction of the Bank or the Guarantor.

The amounts payable on the notes are dependent upon the ability of the Bank or the Guarantor to repay its obligations on the relevant payment date. No assurance can be given as to what the financial condition of the Bank or the Guarantor will be on the relevant payment date. The value of the notes is expected to be affected, in part, by investors' general appraisal of the creditworthiness of the Bank and the Guarantor, and actual or anticipated changes in the credit ratings of the Bank and the Guarantor prior to the due date. Such perceptions are generally influenced by the ratings accorded to the outstanding notes of the Bank and the Guarantor by standard statistical rating services. A reduction (or anticipated reduction) in the rating, if any, accorded to outstanding debt securities of the Bank or the Guarantor by one of these rating agencies could result in a reduction in the trading value of the notes. As the return on the notes depends upon factors in addition to the ability of the Bank and the Guarantor to pay their respective obligations, an improvement in these credit ratings will not reduce the other investment risks related to the notes. A credit rating is not a recommendation to buy, sell, or hold any of the notes, and may be subject to suspension, change, or withdrawal at any time by the assigning rating agency.

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 initial issue price of the notes.

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

The Bank's initial estimated value of the notes does not represent future values of the notes and may differ from others' estimates.

The Bank's initial estimated value of the notes will be 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 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 NBCFI would buy or sell your notes (if NBCFI 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 Bank's estimated value of the notes at any time will not be 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 will be determined by reference to the Bank's internal funding rate. The internal funding rate to be 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 generally 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 and has an adverse effect on the economic terms of the notes.

Certain business, trading and hedging activities of us, the agent, and our other affiliates may create conflicts with your interests and could potentially adversely affect the value of the notes.

We, the agent, and our other affiliates may engage in trading and other business activities related to a Reference Asset or any of the securities included in a Reference Asset that are not for your account or on your behalf. We, the agent, and our other affiliates also may issue or underwrite other financial instruments with returns based upon a Reference Asset. These activities may present a conflict of interest between your interest in the notes and the interests that we, the agent, and our other affiliates may have in our or their proprietary accounts, in facilitating transactions, including block trades, for our or their other customers, and in accounts under our or their management. These trading and other business activities, if they influence the level of any Reference Asset or secondary trading in your notes, could be adverse to your interests as a beneficial owner of the notes.

Moreover, we and our affiliates play a variety of roles in connection with the issuance of the notes, including hedging our obligations under the notes and making the assumptions and inputs used to determine the pricing of the notes and the initial estimated value of the notes when the terms of the notes are set. We expect to hedge our obligations under the notes through the agent, one of our other affiliates, and/or another unaffiliated counterparty. Any of these hedging activities may adversely affect the level of a Reference Asset and therefore the market value of the notes and the amount you will receive, if any, on the notes. In connection with such activities, the economic interests of us, the agent, and our other affiliates may be adverse to your interests as an investor in the notes. Any of these activities may adversely affect the value of the notes. In addition, because hedging our obligations entails risk and may be influenced by market forces beyond our control, this hedging activity may result in a profit that is more or less than expected, or it may result in a loss. We, the agent, or one or more of our other affiliates will retain any profits realized in hedging our obligations under the notes even if investors do not receive a favorable investment return under the terms of the notes or in any secondary market transaction. Any profit in connection with such hedging activities will be in addition to any other compensation that we, the agent, and our other affiliates receive for the sale of the notes, which creates an additional incentive to sell the notes to you. We, the agent, and our other affiliates will have no 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.

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

The calculation agent will determine, among other things, the amount of payments on the notes. The calculation agent will exercise its judgment when performing its functions. For example, the calculation agent will determine whether a Market Disruption Event affecting a Reference Asset has occurred, and make a good faith estimate in its sole discretion of the Closing Level for an affected Reference Asset if the relevant Coupon Payment Valuation Date is postponed to the last possible day. See "General Terms of the Notes —Determination Date, Averaging Dates and Observation Period—Notes with One Determination Date" beginning on page PS-10 of the product supplement. This determination may, in turn, depend on the calculation agent's judgment as to whether the event has materially interfered with our ability or the ability of one of our affiliates to unwind our hedge positions. The calculation agent will be required to carry out its duties in good faith and use its reasonable judgment. However, because we will be the calculation agent, potential conflicts of interest could arise. Neither we nor any of our affiliates will have any obligation to consider your interests as a holder of the notes in taking any action that might affect the value of your notes.

Higher Contingent Coupon Rate or lower Barrier are generally associated with Reference Assets with greater expected volatility and therefore can indicate a greater risk of loss.

"Volatility" refers to the frequency and magnitude of changes in the level of a Reference Asset. The greater the expected volatility with respect to a Reference Asset on the Trade Date, the higher the expectation as of the Trade Date that the Reference Asset Return could be less than the Barrier on the Final Valuation Date, indicating a higher expected risk of loss on the notes. This greater expected risk will generally be reflected in a higher Contingent Coupon Rate than the yield payable on our conventional debt securities with a similar maturity, or in more favorable terms (such as a lower Coupon Payment Threshold or a higher Contingent Coupon Rate) than for similar securities linked to the performance of the Reference Assets with a lower expected volatility as of the Trade Date. You should therefore understand that a relatively higher Contingent Coupon Rate may indicate an increased risk of loss. Further, a relatively lower Barrier may not necessarily indicate that the notes have a greater likelihood of a repayment of principal at maturity. The volatility of a Reference Asset can change significantly over the term of the notes. The level of a Reference Asset for your notes could fall sharply, which could result in a significant loss of principal. You should be willing to accept the downside market risk of the Reference Assets and the potential to lose some or all of your principal at maturity.

The performance and market value of the Reference Assets may not correlate with the performance of their respective underlying indices as well as the net asset value per share of the Reference Assets.

During periods of market volatility, securities held by a Reference Asset may be unavailable in the secondary market, market participants may be unable to calculate accurately the net asset value per share of the applicable Reference Asset and the liquidity of the applicable Reference Asset may be adversely affected. This kind of market volatility may also disrupt the ability of market participants to create and redeem shares of the applicable Reference Asset. Further, market volatility may adversely affect, sometimes materially, the prices at which market participants are willing to buy and sell shares of the Reference Assets. As a result, under these circumstances, the market value of shares of the applicable Reference Asset may vary substantially from the net asset value per share of the applicable Reference Asset. For all of the foregoing reasons, the performance of the Reference Assets may not correlate with the performance of their respective underlying indices as well as the net asset value per share of the Reference Assets, which could materially and adversely affect the return on the notes.

You will have limited anti-dilution protection.

The calculation agent may adjust the Closing Levels of the Reference Assets to reflect certain corporate actions, as described in the section "General Terms of the Notes—Anti-dilution Adjustments for Exchange Traded Funds" beginning on page PS-14 of the accompanying product supplement EI-ETF-1. The calculation agent will not be required to make an adjustment for every event that may affect a Reference Asset and will have broad discretion to determine whether and to what extent an adjustment is required.

The notes will not be listed on any securities exchange or any inter-dealer quotation system, and there may be no secondary market for the notes.

The notes are most suitable for purchasing and holding to maturity. The notes will be new securities for which there is no trading market. The notes will not be listed on any securities exchange or any inter-dealer quotation system. We cannot assure you as to whether there will be a trading or secondary market for the notes or, if there were to be such a trading or secondary market, that it would be liquid.

Under ordinary market conditions, NBCFI or any of our other affiliates may (but are not obligated to) make a secondary market for the notes. However, they may cease doing so at any time. Because we do not expect other broker-dealers to participate 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 NBCFI or any of our other affiliates are willing to transact. If neither NBCFI nor any of our other affiliates makes a market for the notes, there will not be a secondary market for the notes. Accordingly, we cannot assure you as to the development or liquidity of any secondary market for the notes. If a secondary market in the notes is not developed or maintained, you may not be able to sell your notes easily or at prices that will provide you with a yield comparable to that of similar securities that have a liquid secondary market.

Significant aspects of the income tax treatment of an investment in the notes are uncertain.

The tax treatment of an investment in the notes is uncertain. We do not plan to request a ruling from the Internal Revenue Service or the Canada Revenue Agency regarding the tax treatment of an investment in the notes, and the Internal Revenue Service, the Canada Revenue Agency or a court may not agree with the tax treatment described in this pricing supplement.

The Internal Revenue Service has issued a notice indicating that it and the U.S. Treasury Department are actively considering whether, among other issues, a holder should be required to accrue interest over the term of an instrument such as the notes irrespective of any interest payments and whether all or part of the gain a holder may recognize upon sale, exchange or maturity of an instrument such as the notes could be treated as ordinary income. The outcome of this process is uncertain and could apply on a retroactive basis.

In addition, since the filing of the offering circular on June 9, 2020, the Minister of Finance (Canada) has released certain proposals to amend the Income Tax Act (Canada) on April 29, 2022 with respect to “hybrid mismatch arrangements” (the “Hybrid Mismatch Proposals”) which, if enacted, could, where certain conditions are met, have an adverse impact on the Canadian tax treatment to a holder to the extent any amount paid or payable to a holder in respect of the notes is considered to be the deduction component of a “hybrid mismatch arrangement” under which the payment arises within the meaning of proposed paragraph 18.4(3)(b) of the Income Tax Act (Canada) contained in the “Hybrid Mismatch Proposals”. Holders should note that the Hybrid Mismatch Proposals are in consultation form, are highly complex, and there remains significant uncertainty as to their interpretation and application. There can be no assurance that the Hybrid Mismatch Proposals will be enacted in their current form, or at all. Should any payments with respect to the notes become subject to Canadian withholding tax by reason of the application of the rules contained in the Hybrid Mismatch Proposals, the Bank will withhold tax at the applicable statutory rate and will not make payments of any additional amounts as described in the section entitled “Description of the Notes — Payments of Additional Amounts” in the accompanying offering circular.

Please read carefully the section entitled “Supplemental U.S. Federal Income Tax Consequences” below, and the section entitled “Taxation” in the accompanying offering circular. You should consult your tax advisor about your own tax situation.

INFORMATION REGARDING THE REFERENCE ASSETS

We have derived the following information from publicly available documents. We have not independently verified the accuracy or completeness of the following information. We are not affiliated with any issuer, adviser or sponsor of any Reference Asset or any issuer Reference Asset constituent and none of the issuers, advisers or sponsors of the Reference Assets and Reference Asset constituents will have any obligations with respect to the notes. This document relates only to the notes and does not relate to the shares of the Reference Assets or any securities included in any Reference Asset or underlying index. Neither we nor any of our affiliates participates in the preparation of the publicly available documents described below. The information reflects the policies of, and is subject to change by each of S&P Dow Jones Indices LLC (“SPDJI”) with respect to SPX, FTSE Russell (“FTSE”) with respect to the RTY and Nasdaq, Inc. (“Nasdaq”) with respect to the NDX (Nasdaq, FTSE and SPDJI together, the “index sponsors”).

The selection of a Reference Asset is not a recommendation to buy or sell the shares of that Reference Asset. Neither we nor any of our affiliates make any representation to you as to the performance of the Reference Assets. Information provided to or filed with the SEC under the Exchange Act and the Investment Company Act of 1940 relating to the Reference Assets may be obtained through the SEC’s website at <http://www.sec.gov>.

The Invesco QQQ TrustSM, Series 1 (“QQQ”)

The QQQ is an unit investment trust governed by a standard terms and conditions of trust between The Bank of New York Mellon (the “Trustee”), and Nasdaq Global Funds, the predecessor sponsor to Invesco Capital Management LLC (the “Sponsor”). The QQQ trades on The NASDAQ Stock Market under the ticker symbol “QQQ.” The investment objective of the QQQ is to provide investment results that generally correspond to the price and yield performance of the Nasdaq-100 Index[®] (the “NDX”). The NDX is a modified market capitalization-weighted index of 100 of the largest non-financial companies listed on The Nasdaq Stock Market based on market capitalization.

The Nasdaq-100 Index[®]

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

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

Calculation of the NDX

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

Underlying Stock Eligibility Criteria and Annual Ranking Review

Initial Eligibility Criteria

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

- the security’s U.S. listing must be exclusively on the Nasdaq Global Select Market or the Nasdaq Global Market;
- the security must be issued by a non-financial company;

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

Continued Eligibility Criteria

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

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

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

Annual Ranking Review

The component securities are evaluated on an annual basis (the “Ranking Review”), except under extraordinary circumstances, which may result in an interim evaluation, as follows. Issuers that meet the applicable eligibility criteria are ranked by market value. The top 75 ranked issuers will be selected for inclusion. Any other issuers that were already members of the NDX and are ranked within the top 100 are also selected for inclusion. In the event that fewer than 100 issuers pass the first two criteria, the remaining positions will first be filled, in rank order, by current index members that were in the top 100 at the previous reconstitution but are ranked in positions 101-125 in the current reconstitution. In the event that fewer than 100 issuers pass the first three criteria, the remaining positions will be filled, in rank order, by any issuers ranked in the top 100 that were not already members

of the NDX. The data used in the ranking includes end of October market data and is updated for total shares outstanding submitted in a publicly filed SEC document via EDGAR through the end of November.

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

Index Maintenance

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

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

Index Rebalancing

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

This quarterly examination will result in an index rebalancing if it is determined that: (1) the current weight of the single largest market capitalization component security is greater than 24% or (2) the "collective weight" of those component securities, the individual current weights of which are in excess of 4.5%, when added together, exceed 48%. In addition, Nasdaq may conduct a special rebalancing at any time if it is determined to be necessary to maintain the integrity of the NDX.

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

SPDR® S&P 500® ETF Trust (“SPY”)

The SPY seeks to provide investment results that, before fees and expenses, correspond generally to the performance of the S&P 500® Index. The SPY utilizes a “replication” investment approach in attempting to track the performance of the S&P 500® Index. The SPY typically invests in substantially all of the securities which comprise the S&P 500® Index in approximately the same proportions as the S&P 500® Index. Shares of the SPY are listed on the NYSE Arca under the ticker symbol “SPY.”

The S&P 500® Index

The S&P 500® Index is intended to provide an indication of the pattern of common stock price movement. The calculation of the level of the S&P 500® Index is based on the relative value of the aggregate market value of the common stocks of 500 companies as of a particular time compared to the aggregate average market value of the common stocks of 500 similar companies during the base period of the years 1941 through 1943.

S&P calculates the S&P 500® Index by reference to the prices of the constituent stocks of the S&P 500® Index without taking account of the value of dividends paid on those stocks. As a result, the return on the notes will not reflect the return you would realize if you actually owned the constituent stocks of the S&P 500® Index and received the dividends paid on those stocks.

Computation of the S&P 500® Index

While S&P currently employs the following methodology to calculate the S&P 500® Index, no assurance can be given that S&P will not modify or change this methodology in a manner that may affect the Payment at Maturity.

Historically, the market value of any component stock of the S&P 500® Index was calculated as the product of the market price per share and the number of then outstanding shares of such component stock. In March 2005, S&P began shifting the S&P 500® Index halfway from a market capitalization weighted formula to a float-adjusted formula, before moving the S&P 500® Index to full float adjustment on September 16, 2005. S&P’s criteria for selecting stocks for the S&P 500® Index did not change with the shift to float adjustment. However, the adjustment affects each company’s weight in the S&P 500® Index.

Under float adjustment, the share counts used in calculating the S&P 500® Index reflect only those shares that are available to investors, not all of a company’s outstanding shares. Float adjustment excludes shares that are closely held by control groups, other publicly traded companies or government agencies.

In September 2012, all shareholdings representing more than 5% of a stock’s outstanding shares, other than holdings by “block owners,” were removed from the float for purposes of calculating the S&P 500® Index. Generally, these “control holders” will include officers and directors, private equity, venture capital and special equity firms, other publicly traded companies that hold shares for control, strategic partners, holders of restricted shares, ESOPs, employee and family trusts, foundations associated with the company, holders of unlisted share classes of stock, government entities at all levels (other than government retirement/pension funds) and any individual person who controls a 5% or greater stake in a company as reported in regulatory filings. However, holdings by block owners, such as depository banks, pension funds, mutual funds and ETF providers, 401(k) plans of the company, government retirement/pension funds, investment funds of insurance companies, asset managers and investment funds, independent foundations and savings and investment plans, will ordinarily be considered part of the float.

Treasury stock, stock options, equity participation units, warrants, preferred stock, convertible stock, and rights are not part of the float. Shares held in a trust to allow investors in countries outside the country of domicile, such as depository shares and Canadian exchangeable shares are normally part of the float unless those shares form a control block.

For each stock, an investable weight factor (“IWF”) is calculated by dividing the available float shares by the total shares outstanding. Available float shares are defined as the total shares outstanding less shares held by control holders. This calculation is subject to a 5% minimum threshold for control blocks. For example, if a company’s officers and directors hold 3% of the company’s shares, and no other control group holds 5% of the company’s shares, S&P would assign that company an IWF of 1.00, as no control group meets the 5% threshold. However, if a company’s officers and directors hold 3% of the company’s shares and another control group holds 20% of the company’s shares, S&P would assign an IWF of 0.77, reflecting the fact that 23% of the company’s

outstanding shares are considered to be held for control. As of July 31, 2017, companies with multiple share class lines are no longer eligible for inclusion in the S&P 500[®] Index. Constituents of the S&P 500[®] Index prior to July 31, 2017 with multiple share class lines were grandfathered in and continue to be included in the S&P 500[®] Index. If a constituent company of the S&P 500[®] Index reorganizes into a multiple share class line structure, that company will remain in the S&P 500[®] Index at the discretion of the S&P Index Committee in order to minimize turnover.

The S&P 500[®] Index is calculated using a base-weighted aggregate methodology. The level of the S&P 500[®] Index reflects the total market value of all 500 component stocks relative to the base period of the years 1941 through 1943. An indexed number is used to represent the results of this calculation in order to make the level easier to use and track over time. The actual total market value of the component stocks during the base period of the years 1941 through 1943 has been set to an indexed level of 10. This is often indicated by the notation 1941-43 = 10. In practice, the daily calculation of the S&P 500[®] Index is computed by dividing the total market value of the component stocks by the “index divisor.” By itself, the index divisor is an arbitrary number. However, in the context of the calculation of the S&P 500[®] Index, it serves as a link to the original base period level of the S&P 500[®] Index. The index divisor keeps the S&P 500[®] Index comparable over time and is the manipulation point for all adjustments to the S&P 500[®] Index, which is index maintenance.

Index Maintenance

Index maintenance includes monitoring and completing the adjustments for company additions and deletions, share changes, stock splits, stock dividends, and stock price adjustments due to company restructuring or spinoffs. Some corporate actions, such as stock splits and stock dividends, require changes in the common shares outstanding and the stock prices of the companies in the S&P 500[®] Index, and do not require index divisor adjustments.

To prevent the level of the S&P 500[®] Index from changing due to corporate actions, corporate actions which affect the total market value of the S&P 500[®] Index require an index divisor adjustment. By adjusting the index divisor for the change in market value, the level of the S&P 500[®] Index remains constant and does not reflect the corporate actions of individual companies in the S&P 500[®] Index. Index divisor adjustments are made after the close of trading and after the calculation of the S&P 500[®] Index closing level.

Changes in a company’s total shares outstanding of 5% or more due to public offerings are made as soon as reasonably possible. Other changes of 5% or more (for example, due to tender offers, Dutch auctions, voluntary exchange offers, company stock repurchases, private placements, acquisitions of private companies or non-index companies that do not trade on a major exchange, redemptions, exercise of options, warrants, conversion of preferred stock, notes, debt, equity participations, at-the-market stock offerings or other recapitalizations) are made weekly, and are generally announced on Fridays for implementation after the close of trading the following Friday (one week later). If a 5% or more share change causes a company’s IWF to change by five percentage points or more, the IWF is updated at the same time as the share change. IWF changes resulting from partial tender offers are considered on a case-by-case basis.

iShares® Russell 2000 ETF (“IWM”)

The IWM seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of the Russell 2000® Index. iShares Trust is a registered investment company that consists of numerous separate investment portfolios, including the IWM. iShares Trust and BlackRock Fund Advisors have entered into an investment advisory agreement under which BlackRock Fund Advisors was appointed as the Investment Advisor for the IWM. Shares of the IWM are listed on the NYSE Arca under the ticker symbol “IWM.”

The Russell 2000® Index

The Russell 2000® Index was developed by Russell Investments (“Russell”) before FTSE International Limited (“FTSE”) and Russell combined in 2015 to create FTSE Russell, which is wholly owned by London Stock Exchange Group. Russell began dissemination of the Russell 2000® Index (Bloomberg L.P. index symbol “RTY”) on January 1, 1984. The Russell 2000® Index was set to 135 as of the close of business on December 31, 1986. FTSE Russell calculates and publishes the Russell 2000® Index. The Russell 2000® Index is designed to track the performance of the small capitalization segment of the U.S. equity market. As a subset of the Russell 3000® Index, the Russell 2000® Index consists of the smallest 2,000 companies included in the Russell 3000® Index. The Russell 3000® Index measures the performance of the largest 3,000 U.S. companies. The Russell 2000® Index is determined, comprised, and calculated by FTSE Russell without regard to the notes.

Selection of Stocks Comprising the Russell 2000® Index

All companies eligible for inclusion in the Russell 2000® Index must be classified as a U.S. company under FTSE Russell’s country-assignment methodology. If a company is incorporated, has a stated headquarters location, and trades on a standard exchange in the same country (American Depositary Receipts and American Depositary Shares are not eligible), then the company is assigned to its country of incorporation. If any of the three factors are not the same, FTSE Russell defines three Home Country Indicators (“HCIs”): country of incorporation, country of headquarters, and country of the most liquid exchange (as defined by a two-year average daily dollar trading volume) (“ADDTV”) from all exchanges within a country. Using the HCIs, FTSE Russell compares the primary location of the company’s assets with the three HCIs. If the primary location of its assets matches any of the HCIs, then the company is assigned to the primary location of its assets. If there is insufficient information to determine the country in which the company’s assets are primarily located, FTSE Russell will use the primary location of the company’s revenue for the same cross-comparison and assigns the company to the appropriate country in a similar fashion. FTSE Russell uses the average of two years of assets or revenues data to reduce potential turnover. If conclusive country details cannot be derived from assets or revenues data, FTSE Russell will assign the company to the country in which its headquarters are located unless the country is a Benefit Driven Incorporation “BDI” country. If the country in which its headquarters are located is a BDI, it will be assigned to the country of its most liquid stock exchange. BDI countries include: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bonaire, British Virgin Islands, Cayman Islands, Channel Islands, Cook Islands, Curacao, Faroe Islands, Gibraltar, Guernsey, Isle of Man, Jersey, Liberia, Marshall Islands, Panama, Saba, Sint Eustatius, Sint Maarten, and Turks and Caicos Islands. For any companies incorporated or headquartered in a U.S. territory, including countries such as Puerto Rico, Guam, and U.S. Virgin Islands, a U.S. HCI is assigned. “N-Shares” of companies controlled by entities in mainland China are not eligible for inclusion in the Russell 2000® Index.

All securities eligible for inclusion in the Russell 2000® Index must trade on a major U.S. exchange. Stocks must have a closing price at or above \$1.00 on their primary exchange on the “rank day” in May of each year (timetable is announced each spring) to be eligible for inclusion during annual reconstitution. However, in order to reduce unnecessary turnover, if an existing member’s closing price is less than \$1.00 on the last day of May, it will be considered eligible if the average of the daily closing prices (from its primary exchange) during the month of May is equal to or greater than \$1.00. FTSE Russell adds initial public offerings (IPOs) each quarter to ensure that new additions to the institutional investing opportunity set are reflected in representative indexes. A stock added during the quarterly IPO process is considered a new index addition, and therefore must have a closing price on its primary exchange at or above \$1.00 on the last day of the eligibility period in order to qualify for index inclusion. If an existing index member does not trade on the rank day, it must price at \$1.00 or above on another eligible U.S. exchange to remain eligible.

Royalty trusts, limited liability companies, closed-end investment companies (companies that are required to report Acquired Fund Fees and Expenses, as defined by the SEC, including business development companies, are not eligible), blank check companies, special-purpose acquisition companies, exchange traded funds, mutual funds and limited partnerships are ineligible for inclusion. Preferred and convertible preferred stock, redeemable shares, participating preferred stock, warrants, rights, installment receipts and trust receipts are not eligible for inclusion in the Russell 2000® Index.

Annual reconstitution is a process by which the Russell 2000® Index is completely rebuilt. On the rank day of July, all eligible securities are ranked by their total market capitalization. The largest 4,000 become the Russell 3000E Index, and the other FTSE Russell indexes are determined from that set of securities. Reconstitution of the Russell 2000® Index occurs on the last Friday in June or, when the last Friday in June is the 29th or 30th, reconstitution occurs on the prior Friday. In addition, FTSE Russell adds initial public offerings to the Russell 2000® Index on a quarterly basis based on total market capitalization ranking within the market-adjusted capitalization breaks established during the most recent reconstitution.

After membership is determined, a security's shares are adjusted to include only those shares available to the public. This is often referred to as "free float." The purpose of the adjustment is to exclude from market calculations the capitalization that is not available for purchase and is not part of the investable opportunity set.

Historical Performance of the Reference Assets

The following graphs set forth daily Closing Levels of the Reference Assets for the period from January 1, 2018 to February 13, 2023. We obtained the Closing Levels below from Bloomberg without independent verification. The historical performance of a Reference Asset should not be taken as an indication of its future performance, and no assurances can be given as to the price of any Reference Asset at any time during the term of the notes, including the Coupon Payment Valuation Dates. We cannot give you assurance that the performance of the Reference Assets will result in any positive return on your investment.

Historical Performance of the QQQ



Historical Performance of the IWM



Historical Performance of the SPY



SUPPLEMENTAL U.S. FEDERAL INCOME TAX CONSEQUENCES

The following discussion, together with the discussion of U.S. federal income taxation in the accompanying Offering Circular, is a general description of the material U.S. tax considerations relating to the notes and replaces the discussion in the accompanying product supplement under “Supplemental Discussion of U.S. Federal Income Tax Consequences.” It does not purport to be a complete analysis of all tax considerations relating to the notes. Prospective purchasers of the notes should consult their tax advisors as to the consequences under the tax laws of the country of which they are resident for tax purposes and the tax laws of Canada and the U.S. of acquiring, holding and disposing of the notes and receiving payments under the notes. This summary is based upon the law as in effect on the date of this pricing supplement and is subject to any change in law that may take effect after such date.

The following section supplements the discussion of U.S. federal income taxation in the accompanying Offering Circular with respect to U.S. holders (as defined in the Offering Circular). It applies only to those holders who are not excluded from the discussion of U.S. federal income taxation in the accompanying Offering Circular.

You should consult your tax advisor concerning the U.S. federal income tax and other tax consequences of your investment in the notes in your particular circumstances, including the application of state, local or other tax laws and the possible effects of changes in federal or other tax laws.

NO STATUTORY, JUDICIAL OR ADMINISTRATIVE AUTHORITY DIRECTLY DISCUSSES HOW THE NOTES SHOULD BE TREATED FOR U.S. FEDERAL INCOME TAX PURPOSES. AS A RESULT, THE U.S. FEDERAL INCOME TAX CONSEQUENCES OF AN INVESTMENT IN THE NOTES ARE UNCERTAIN. BECAUSE OF THE UNCERTAINTY, YOU SHOULD CONSULT YOUR TAX ADVISOR IN DETERMINING THE U.S. FEDERAL INCOME TAX AND OTHER TAX CONSEQUENCES OF YOUR INVESTMENT IN THE NOTES, INCLUDING THE APPLICATION OF STATE, LOCAL OR OTHER TAX LAWS AND THE POSSIBLE EFFECTS OF CHANGES IN FEDERAL OR OTHER TAX LAWS.

We will not attempt to ascertain whether any components of any Reference Asset would be treated as a “passive foreign investment company” within the meaning of Section 1297 of the Code or a “U.S. real property holding corporation” within the meaning of Section 897 of the Code. If any components of one or more Reference Assets were so treated, certain adverse U.S. federal income tax consequences could possibly apply. You should refer to any available information filed with the SEC by the components of the Reference Assets and consult your tax advisor regarding the possible consequences to you in this regard.

Although there is no statutory, judicial, or administrative authority directly addressing the characterization of a notes, we intend to treat a note with terms described in this pricing supplement for all tax purposes as a pre-paid cash-settled income-bearing derivative contract in respect of the Reference Portfolio for U.S. federal income tax purposes, and the terms of the notes require a holder and us (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the notes for all tax purposes in accordance with such characterization. Although the U.S. federal income tax treatment of the Contingent Coupon Payments is uncertain, we intend to take the position, and the following discussion assumes, that such Contingent Coupon Payments (including any Contingent Coupon Payments on or with respect to the maturity date) constitute taxable ordinary income to a United States holder at the time received or accrued in accordance with the holder’s regular method of accounting.

If the notes are treated as described above, it would be reasonable for a U.S. holder to take the position that it will recognize capital gain or loss upon the sale or maturity of the notes in an amount equal to the difference between the amount a U.S. holder receives at such time (other than amounts properly attributable to any interest payments, which would be treated, as described above, as ordinary income) and the U.S. holder’s tax basis in the notes. In general, a U.S. holder’s tax basis in the notes will be equal to the price the holder paid for the notes. Capital gain recognized by an individual U.S. holder is generally taxed at preferential rates where the property is held for more than one year and is generally taxed at ordinary income rates where the property is held for one year or less. The deductibility of capital losses is subject to limitations. The holding period for notes of a U.S. holder who acquires the notes upon issuance will generally begin on the date after the issue date of the notes. If the notes are held by the same U.S. holder until maturity, that holder’s holding period will generally include the maturity date.

Alternative Treatments

Alternative tax treatments of the notes are also possible and the Internal Revenue Service might assert that a treatment other than that described above is more appropriate. For example, it would be possible to treat the notes,

and the Internal Revenue Service might assert that the notes should be treated, as a single debt instrument. Such a debt instrument would be subject to the special tax rules governing contingent payment debt instruments. If the notes are so treated, a U.S. holder would generally be required to accrue interest currently over the term of the notes irrespective of the interest payments on the notes. In addition, any gain a U.S. holder might recognize upon the sale or maturity of the notes would be ordinary income and any loss recognized by a holder at such time would be ordinary loss to the extent of interest that same holder included in income in the current or previous taxable years in respect of the notes, and thereafter, would be capital loss.

Because of the absence of authority regarding the appropriate tax characterization of the notes, it is also possible that the Internal Revenue Service could seek to characterize the notes in a manner that results in other tax consequences that are different from those described above. For example, the Internal Revenue Service could possibly assert that any gain or loss that a holder may recognize upon the sale or maturity of the notes should be treated as ordinary gain or loss.

The Internal Revenue Service has released a notice that may affect the taxation of holders of the notes. According to the notice, the Internal Revenue Service and the Treasury Department are actively considering whether the holder of an instrument such as the notes should be required to accrue ordinary income on a current basis irrespective of any interest payments, and they sought taxpayer comments on the subject. It is not possible to determine what guidance they will ultimately issue, if any. It is possible, however, that under such guidance, holders of the notes will ultimately be required to accrue income currently irrespective of any interest payments and this could be applied on a retroactive basis. The Internal Revenue Service and the Treasury Department are also considering other relevant issues, including whether additional gain or loss from such instruments should be treated as ordinary or capital and whether the special “constructive ownership rules” of Section 1260 of the Code might be applied to such instruments. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations. We intend to treat the notes for U.S. federal income tax purposes in accordance with the treatment described in this pricing supplement unless and until such time as the Treasury Department and Internal Revenue Service determine that some other treatment is more appropriate.

Non-U.S. Holders

The following discussion applies to non-U.S. holders of the notes. A non-U.S. holder is a beneficial owner of a note that, for U.S. federal income tax purposes, is a non-resident alien individual, a foreign corporation, or a foreign estate or trust.

Except as discussed below, a non-U.S. holder will generally not be subject to U.S. federal income or withholding tax for amounts paid in respect of the notes, provided that (i) the holder complies with any applicable certification requirements, (ii) the payment is not effectively connected with the conduct by the holder of a U.S. trade or business, and (iii) if the holder is a non-resident alien individual, such holder is not present in the U.S. for 183 days or more during the taxable year of the sale or maturity of the notes. In the case of (ii) above, the holder generally would be subject to U.S. federal income tax with respect to any income or gain in the same manner as if the holder were a U.S. holder and, in the case of a holder that is a corporation, the holder may also be subject to a branch profits tax equal to 30% (or such lower rate provided by an applicable U.S. income tax treaty) of a portion of its earnings and profits for the taxable year that are effectively connected with its conduct of a trade or business in the U.S., subject to certain adjustments. Payments made to a non-U.S. holder may be subject to information reporting and to backup withholding unless the holder complies with applicable certification and identification requirements as to its foreign status.

A “dividend equivalent” payment is treated as a dividend from sources within the United States and such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-U.S. holder. Under U.S. Treasury Regulations, payments (including deemed payments) with respect to equity-linked instruments (“ELIs”) that are “specified ELIs” may be treated as dividend equivalents if such specified ELIs reference an interest in an “underlying security,” which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. However, Internal Revenue Service guidance provides that withholding on dividend equivalent payments will not apply to specified ELIs that are not delta-one instruments and that are issued before January 1, 2023. Based on our determination that the notes are not “delta-one” instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the notes. However, it is possible that the notes could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the Reference Assets or the notes, and following such occurrence the notes could be treated as subject to withholding on dividend

equivalent payments. Non-U.S. holders that enter, or have entered, into other transactions in respect of any Reference Asset or the notes should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the notes and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable paying agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

As discussed above, alternative characterizations of the notes for U.S. federal income tax purposes are possible. Should an alternative characterization, by reason of change or clarification of the law, by regulation or otherwise, cause payments as to the notes to become subject to withholding tax, we will withhold tax at the applicable statutory rate. The IRS has also indicated that it is considering whether income in respect of instruments such as the notes should be subject to withholding tax. We will not be required to pay any additional amounts in respect of such withholding. Prospective investors should consult their own tax advisors in this regard.

Backup Withholding and Information Reporting

Please see the discussion under “United States Federal Income Taxation—Backup Withholding and Information Reporting” in the accompanying Offering Circular for a description of the applicability of the backup withholding and information reporting rules to payments made on your notes.

Foreign Account Tax Compliance Act

Sections 1471 through 1474 of the Code ("FATCA") impose a new reporting regime and a 30% withholding tax with respect to certain payments to any non-U.S. financial institution (a "foreign financial institution," or "FFI" (as defined by FATCA)) that does not become a "Participating FFI" by entering into an agreement with the IRS to, among other things, provide the IRS with certain information in respect of its account holders and investors or is not otherwise exempt from or in deemed compliance with FATCA. This withholding regime will apply to "foreign passthru payments" (a term not yet defined) no earlier than two years after the date on which final U.S. Treasury regulations defining the term foreign passthru payment are filed with the Federal Register. In the case of "foreign passthru payments," this withholding would potentially apply to payments in respect of any notes that are not "grandfathered obligations." A grandfathered obligation includes any obligation that is executed on or before the date that is six months after the date on which final U.S. Treasury regulations defining the term foreign passthru payment are filed with the Federal Register and such obligation is not materially modified after such date.

If an amount in respect of FATCA withholding were to be deducted or withheld from payments made in respect of the notes, neither we nor any paying agent nor any other person would be required to pay additional amounts as a result of the deduction or withholding. As a result, investors may receive a lesser payment than expected.

SUPPLEMENTAL PLAN OF DISTRIBUTION (CONFLICTS OF INTEREST)

NBCFI will purchase the notes from the Bank for distribution to other affiliated or unaffiliated dealers. The notes sold by NBCFI to the investors will initially be offered at the price set forth on the cover page of this pricing supplement. NBCFI will purchase each of the notes from the Bank at a purchase price equal to the initial issue price net of a commission of up to 0.30% of the principal amount of such notes. Any notes sold by NBCFI to securities dealers may be sold at an agreed discount to the initial issue price. The initial issue price for notes purchased by certain fee-based advisory accounts will be between 99.70% and 100.00% of the principal amount of the notes. Any sale of a note to a fee-based advisory account at an initial issue price below 100.00% of the principal amount will reduce the agent's commission specified on the cover page of this pricing supplement with respect to such note. The initial issue price paid by any fee-based advisory account will be reduced by the amount of any fees assessed by the dealers involved in the sale of the notes to such advisory account but not by more than 0.30% of the principal amount of the notes.

We expect to deliver the notes against payment therefor in New York, New York on a date that is more than two Business Days following the Trade Date. Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two Business Days, unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the notes on any date prior to two Business Days before delivery will be required to specify alternative settlement arrangements to prevent a failed settlement.

The Bank owns, directly or indirectly, all of the outstanding equity securities of NBCFI. In accordance with FINRA Rule 5121, NBCFI may not make sales in this offering to any of its discretionary accounts without the prior written approval of the customer.

The Bank may use this pricing supplement in the initial sale of the notes. In addition, NBCFI or another of the Bank's affiliates may use this pricing supplement in market-making transactions in any notes after their initial sale. Unless NBCFI or we inform you otherwise in the confirmation of sale, this pricing supplement is being used by NBCFI in a market-making transaction.

While NBCFI may make markets in the notes, it is under no obligation to do so and may discontinue any market-making activities at any time without notice. See the section titled "Supplemental Plan of Distribution" in the accompanying product 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. 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.

TABLE OF CONTENTS

Pricing Supplement

Summary Information	PS-1
Hypothetical Redemption Payment at Maturity	PS-4
Investor Suitability	PS-6
Additional Risk Factors	PS-7
Information Regarding the Reference Assets	PS-12
Supplemental U.S. Federal Income Tax Consequences	PS-22
Supplemental Plan of Distribution (Conflicts of Interest)	PS-25

Product Supplement EI-ETF-1 dated June 9, 2020

Summary	PS-1
Risk Factors	PS-3
General Terms of the Notes	PS-10
Hypothetical Returns on Your Notes	PS-16
Use of Proceeds	PS-17
Historical Reference Asset Information	PS-18
Supplemental Discussion of Canadian Tax Consequences	PS-19
Supplemental Discussion of U.S. Federal Income Tax Consequences	PS-20
Supplemental Plan of Distribution	PS-24

Offering Circular dated June 9, 2020

Documents Incorporated by Reference	1
Overview of the Program	2
Risk Factors	6
National Bank of Canada	25
National Bank of Canada, New York Branch	26
Use of Proceeds	30
Description of the Notes	32
The Guarantee	68
Book-Entry Clearance Systems	69
Taxation	72
ERISA and Certain Other U.S. Considerations	82
Plan of Distribution and Conflicts of Interest	84
Limitations on Enforcement of U.S. Laws Against the Bank, Its Management and Others	89
Independent Auditor and Presentation of Financial Results	89
Legal Matters	89

We have not authorized anyone to provide any information or to make any representations other than those contained or incorporated by reference in this pricing supplement, the accompanying product supplement, or the accompanying offering circular. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. These documents are an offer to sell only the notes offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in each such document is current only as of its respective date.

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NATIONAL BANK OF CANADA

Contingent Coupon Notes Linked to the
Lowest Performing of the Invesco QQQ
TrustSM, Series 1, the iShares[®] Russell 2000
ETF and the SPDR[®] S&P 500[®] ETF Trust due
August 16, 2024

National Bank of Canada Financial Inc.



NATIONAL BANK OF CANADA

Notes Linked to One or More Equity Indices or Exchange Traded Funds

National Bank of Canada may offer and sell notes (the “notes”) from time to time of any maturity. The offering circular dated June 9, 2020 (the “offering circular”) and this product supplement describe terms that will apply generally to the notes, including any notes you purchase. A separate pricing supplement will describe the terms that apply specifically to your notes, including any changes to the terms specified below. If the terms described in the relevant pricing supplement are inconsistent with those described in this document or in the accompanying offering circular, the terms described in the relevant pricing supplement will control.

The notes are senior unsecured debt securities, and are linked to the performance of one or more equity indices or exchange traded funds (each, a “Reference Asset”) specified in the relevant pricing supplement. If your notes are linked to more than one equity index (an “index”) or exchange traded fund (an “ETF”), we may refer to the Reference Asset as a “basket” and each applicable component as a “Basket Component.” The payment at maturity on your notes will be based on the performance of the Reference Asset during the term of your notes. Any payments on the notes are subject to our credit risk.

The notes are designed for investors who are seeking exposure to the Reference Asset and who anticipate that the value of the Reference Asset will increase (or, in the case of notes inversely linked to the performance of a Reference Asset (“bearish notes”), decrease) from its Initial Level to the Final Level. Unless otherwise set forth in the applicable pricing supplement, investors must be willing to forego interest payments on the notes and be willing to accept a return that may be negative, in which case you will receive at maturity less, and possibly significantly less, than your principal amount.

Unless otherwise set forth in the applicable pricing supplement, the notes will not be listed on any securities exchange.

Your investment in the notes involves certain risks, including, among other things, our credit risk. See “Risk Factors” on page PS-3 of this product supplement and page 6 of the offering circular to read about investment risks relating to the notes.

The notes will initially be offered and sold in reliance on an exemption from registration under the United States Securities Act of 1933, as amended (the “Securities Act”), provided by Section 3(a)(2) thereof. The notes will not be, and are not required to be, registered with the Securities and Exchange Commission (the “SEC”) under the Securities Act. The notes will not be approved or disapproved by the SEC or any state securities commission, nor has the SEC or any state securities commission passed upon the accuracy or adequacy of this product supplement or the accompanying offering circular. Any representation to the contrary is a criminal offense.

National Bank of Canada, New York Branch (the “Guarantor”) has agreed to unconditionally and irrevocably guarantee payments under the notes (the “Guarantee”), which constitutes the direct, unsecured and unsubordinated obligations of the Guarantor.

We may use this product supplement in the initial sale of a note. In addition, National Bank of Canada Financial Inc. or one of our other affiliates may use this product supplement in a market-making transaction in a note after its initial sale. *Unless we or our agent informs the purchaser otherwise in the confirmation of sale, this product supplement is being used in a market-making transaction.*

TABLE OF CONTENTS

	Page
SUMMARY	1
RISK FACTORS.....	3
GENERAL TERMS OF THE NOTES	10
HYPOTHETICAL RETURNS ON YOUR NOTES.....	16
USE OF PROCEEDS	17
HISTORICAL REFERENCE ASSET INFORMATION	18
SUPPLEMENTAL DISCUSSION OF CANADIAN TAX CONSEQUENCES.....	19
SUPPLEMENTAL DISCUSSION OF U.S. FEDERAL INCOME TAX CONSEQUENCES	20
SUPPLEMENTAL PLAN OF DISTRIBUTION.....	24

SUMMARY

The information in this “Summary” section is qualified by the more detailed information set forth in this product supplement and the offering circular, as well as the relevant pricing supplement. In this product supplement, references to the “offering circular” mean the offering circular, dated June 9, 2020, of National Bank of Canada. References to the “relevant pricing supplement” mean the pricing supplement that describes the specific terms of your notes.

Issuer:	National Bank of Canada (the “Bank”).
Dealers:	National Bank of Canada Financial Inc., and any additional Dealers that may be identified in the applicable pricing supplement.
Reference Asset:	As specified in the relevant pricing supplement.
Underlying Stocks:	In the case of a Reference Asset that is an index, the underlying stocks are the stocks included in the Reference Asset. In the case of a Reference Asset that is an ETF, the underlying stocks are the stocks held by the Reference Asset.
Denominations:	Unless otherwise specified in the relevant pricing supplement, the notes will be issued in denominations of \$1,000 and integral multiples in excess of \$1,000. The applicable pricing supplement may also specify an additional minimum purchase amount of the notes.
Interest Payable:	None, unless otherwise specified in the relevant pricing supplement.
Payment at Maturity:	The payment at maturity will be based on the performance of the Reference Asset, and will be calculated as set forth in the relevant pricing supplement.
Percentage Change:	The Percentage Change, expressed as a percentage, is calculated as follows:

$$\frac{\text{Final Level} - \text{Initial Level}}{\text{Initial Level}}$$

Initial Level

However, if the return on your notes is inversely related to the performance of the Reference Asset (“bearish notes”), the Percentage Change will be calculated as follows:

$$\frac{\text{Initial Level} - \text{Final Level}}{\text{Initial Level}}$$

Initial Level

Maximum Settlement Amount:	As specified in the relevant pricing supplement, if applicable.
Upside Participation Rate:	As specified in the relevant pricing supplement, if applicable.
Digital Percentage:	A percentage that will be specified in the relevant pricing supplement, if applicable.
Cap Level:	As specified in the relevant pricing supplement, if applicable.
Buffer Level:	A specified value of the Reference Asset that is less than (or, in the case of bearish notes, greater than) the Initial Level. The Buffer Level will be a percentage of the Initial Level and set forth in the relevant pricing supplement, if applicable.
Buffer Amount:	A specified percentage that will be set forth in the relevant pricing supplement, if applicable. For example, if the Buffer Level is 90% of the Initial Level, the Buffer Amount will be 10%.
Buffer Rate:	A specified quotient of the Initial Level divided by the Buffer Level, if applicable.
Initial Level:	As specified in the relevant pricing supplement.

Final Level:	The closing level or closing price, as applicable, of the Reference Asset on the valuation date (if there is one valuation date applicable to the notes) or the arithmetic average of the closing levels or closing prices, as applicable, of the Reference Asset on each of the averaging dates (if there are averaging dates applicable to the notes), or any other dates specified in the relevant pricing supplement.
Original Issue Date:	As specified in the relevant pricing supplement.
Valuation Date:	The valuation date will be specified in the relevant pricing supplement, subject to extension as described below for market disruption events.
Averaging Dates:	The averaging dates, if any, will be specified in the relevant pricing supplement, subject to extension as described below for market disruption events.
Stated Maturity Date:	As specified in the relevant pricing supplement.
CUSIP:	As specified in the relevant pricing supplement.
TLAC Disqualification Event Redemption:	Unless otherwise specified in the applicable pricing supplement, not applicable to the notes.
Canadian Bail-in Powers Acknowledgement:	Unless otherwise specified in the applicable pricing supplement, the notes are not subject to bail-in conversion under the Canadian bail-in regime.
Clearance and Settlement:	DTC global (including through its indirect participants Euroclear and Clearstream, Luxembourg, as described under “Book-Entry Clearance Systems” in the accompanying offering circular).
Listing:	The notes will not be listed on any securities exchange or quotation system.
Calculation Agent:	National Bank of Canada.

RISK FACTORS

Prior to investing in any of the notes, you should carefully review the risk factors set forth below and in the relevant pricing supplement. In addition, you should review the sections entitled "Risk Factors" in the offering circular.

General Risks Relating to the Notes

Your investment may result in a loss; there may be no guaranteed return of principal. To the extent set forth in the applicable pricing supplement, there may not be a fixed principal repayment amount on the notes at maturity. The return on the notes will be based on the performance of a Reference Asset and therefore, you may lose all or a significant portion of your investment if the value of the Reference Asset decreases after the applicable pricing date. You should read the applicable pricing supplement to determine the extent to which your investment in the notes may result in the loss of your principal amount due to changes in the value of the Reference Asset.

You may not receive interest payments on the notes. If so specified in the applicable pricing supplement, your notes may not pay interest. If your notes are interest bearing, they may pay interest only at a rate that will be less than the rate that we would pay on a conventional debt security of comparable maturity. As a result, your investment in the notes may not reflect the full opportunity cost to you when you consider factors, such as inflation, that affect the time value of money.

The payments on the notes may be limited to a maximum return. If so specified in the applicable pricing supplement, the notes that we issue may have a fixed maximum return. In such a case, your return on the notes may be less than the return that you could have realized if you invested directly in the securities represented by the applicable Reference Asset.

In addition, unless otherwise set forth in the applicable pricing supplement, the payments on the notes will not reflect the value of dividends paid, or distributions made, on the securities represented by the Reference Asset or any other rights associated with those securities. Thus, any return on the notes will not reflect the return you would realize if you actually owned those securities.

Your notes may be called prior to maturity. If so specified in the applicable pricing supplement, your notes may be called at our option, or may be automatically called upon the occurrence of certain specified events. If the notes are called, the period over which you hold the notes, and receive any applicable interest payments, may be limited. If the notes are called, you may not be able to reinvest the proceeds in an investment with a comparable return.

Payments on the notes are subject to our credit risk, and actual or perceived changes in our creditworthiness are expected to affect the value of the notes. The notes are our senior unsecured debt securities, and the Guarantee is an unsecured and unsubordinated obligation of the Guarantor. As a result, your receipt of all payments on the notes will be dependent upon our ability to repay our obligations on the applicable payment date, regardless of how the applicable Reference Asset performs. No assurance can be given as to what our financial condition will be at any time after the pricing date of your notes. If we become unable to meet our financial obligations as they become due, you may not receive the amounts payable under the terms of the notes.

In addition, our credit ratings, and those of the Guarantor, are an assessment by ratings agencies of our ability to pay our respective obligations. Consequently, our perceived creditworthiness and actual or anticipated decreases in our credit ratings or increases in the spread between the yield on our securities and the yield on U.S. Treasury securities (the "credit spread") prior to the maturity date may adversely affect the market value of the notes. However, because your return on notes depends upon factors in addition to our ability to pay our obligations, such as the value of the Reference Asset, an improvement in our credit ratings will not reduce the other investment risks related to the notes.

The inclusion in the original issue price of each Dealer's commission and the estimated cost of hedging our obligations under the notes is likely to adversely affect the value of the notes prior to maturity.

While the payment at maturity, if any, will be based on the principal amount of your notes, the original issue price of the notes is expected to include each Dealer's commission and the estimated cost of hedging our obligations under the notes. Such estimated cost includes the expected cost of providing such hedge, as well as the profit expected to realize in consideration for assuming the risks inherent in providing such hedge. As a result, assuming no change in market conditions or any other relevant factors, the price, if any, at which a Dealer may be

willing to purchase notes from you in secondary market transactions, if at all, will likely be lower than the original issue price. In addition, any such prices may differ from values determined by pricing models used by a Dealer, as a result of such compensation or other transaction costs.

We cannot assure you that there will be a trading market for your notes. If a secondary market exists, we cannot predict how the notes will trade, or whether that market will be liquid or illiquid. The development of a trading market for the notes will depend on various factors, including our financial performance and changes in the value of the Reference Asset. The number of potential buyers of your notes in any secondary market may be limited. There is no assurance that any party will be willing to purchase your notes at any price in any secondary market.

We anticipate that one or more of the Dealers will act as a market-maker for the notes that it offers, but none of them is required to do so and may cease to do so at any time. Any price at which a Dealer may bid for, offer, purchase, or sell any of the notes may be higher or lower than the applicable public offering price, and that price may differ from the values determined by pricing models that it may use, whether as a result of dealer discounts, mark-ups, or other transaction costs. These bids, offers, or transactions may affect the prices, if any, at which those notes might otherwise trade in the market. In addition, if at any time any Dealer were to cease acting as a market-maker for any issue of the notes, it is likely that there would be significantly less liquidity in that secondary market. In such a case, the price at which those notes could be sold likely would be lower than if an active market existed.

Unless otherwise stated in the pricing supplement, we will not list the notes on any securities exchange.

If your notes are linked to a basket, changes in the values of one or more of the Basket Components may be offset by changes in the values of one or more of the other Basket Components. The Reference Asset of your notes may be a basket. In such a case, changes in the values of one or more of the Basket Components may not correlate with changes in the values of one or more of the other Basket Components. The values of one or more Basket Components may increase, while the values of one or more of the other Basket Components may decrease or not increase as much. Therefore, in calculating the value of the Reference Asset at any time, increases in the value of one Basket Component may be moderated or wholly offset by decreases or lesser increases in the values of one or more of the other Basket Components. If the weightings of the applicable Basket Components are not equal, adverse changes in the values of the Basket Components which are more heavily weighted could have a greater impact upon your notes.

If you attempt to sell notes prior to maturity, their market value, if any, will be affected by various factors that interrelate in complex ways, and their market value may be less than the principal amount. Unless otherwise set forth in the applicable pricing supplement, if you wish to liquidate your investment in notes prior to maturity, your only option would be to sell them. At that time, there may be an illiquid market for your notes or no market at all. Even if you were able to sell your notes, there are many factors outside of our control that may affect their market value, some of which, but not all, are stated below. The impact of any one factor may be offset or magnified by the effect of another factor. The following paragraphs describe a specific factor's expected impact on the market value of the notes, assuming all other conditions remain constant.

- **Value of the Reference Asset.** We anticipate that the market value of the notes prior to maturity generally will depend to a significant extent on the value of the Reference Asset. In general, it is expected that the market value of the notes will decrease as the value of the Reference Asset decreases, and increase as the value of the Reference Asset increases. (The reverse would be the case as to bearish notes.) However, as the value of the Reference Asset increases or decreases, the market value of the notes is not expected to increase or decrease at the same rate. If you sell your notes when the value of the Reference Asset is less than, or not sufficiently above its value on the applicable pricing date, then you may receive less than the principal amount of your notes.
- **Volatility of the Reference Asset.** Volatility is the term used to describe the size and frequency of market fluctuations. Increases or decreases in the volatility of the Reference Asset may have an adverse impact on the market value of the notes. Even if the value of the Reference Asset increases after the applicable pricing date, if you are able to sell your notes before their maturity date, you may receive substantially less than the amount that would be payable at maturity based on that value because of the anticipation that the value of the Reference Asset will continue to fluctuate prior to the maturity date of the notes.

- **Economic and Other Conditions Generally.** The general economic conditions of the capital markets in the United States, as well as geopolitical conditions and other financial, political, regulatory, and judicial events and related uncertainties that affect stock markets generally, may affect the value of the Reference Asset and the market value of the notes. If the Reference Asset includes one or more Indices or ETFs that have returns that are calculated based upon securities prices in one or more non-U.S. markets (a “non-U.S. Reference Asset”), the value of your notes may also be affected by similar events in the markets of the relevant foreign countries.
- **Interest Rates.** We expect that changes in interest rates will affect the market value of the notes. In general, if U.S. interest rates increase, we expect that the market value of the notes will decrease, and conversely, if U.S. interest rates decrease, we expect that the market value of the notes will increase. In general, we expect that the longer the amount of time that remains until maturity, the more significant the impact of these changes will be on the value of the notes. In the case of non-U.S. Reference Assets, the level of interest rates in the relevant foreign countries may also affect their economies and in turn the value of the non-U.S. Reference Asset, and, thus, the market value of the notes may be adversely affected.
- **Dividend Yields.** In general, if cumulative dividend yields on the securities represented by the Reference Asset increase, we anticipate that the market value of the notes will decrease; conversely, if those dividend yields decrease, we anticipate that the market value of your notes will increase.
- **Exchange Rate Movements and Volatility.** If the Reference Asset of your notes includes any non-U.S. Reference Assets, changes in, and the volatility of, the exchange rates between the U.S. dollar and the relevant non-U.S. currency or currencies could have a negative impact on the value of your notes, and the payments on the notes may depend in part on the relevant exchange rates. In addition, the correlation between the relevant exchange rate and any applicable non-U.S. Reference Asset reflects the extent to which a percentage change in that exchange rate corresponds to a percentage change in the applicable non-U.S. Reference Asset, and changes in these correlations may have a negative impact on the value of your notes.
- **Our Financial Condition and Creditworthiness.** Our perceived creditworthiness, including any increases in our credit spreads and those of the Guarantor and any actual or anticipated decreases in our respective credit ratings, may adversely affect the market value of the notes. In general, we expect the longer the amount of time that remains until maturity, the more significant the impact will be on the value of the notes. However, a decrease in these credit spreads or an improvement in our respective credit ratings will not necessarily increase the market value of the notes.
- **Time to Maturity.** There may be a disparity between the market value of the notes prior to maturity and their value at maturity. This disparity is often called a time “value,” “premium,” or “discount,” and reflects expectations concerning the value of the Reference Asset prior to the maturity date. As the time to maturity decreases, this disparity may decrease, such that the value of the notes will approach the expected amount to be paid at maturity.

Trading and hedging activities by us and our affiliates may affect your return on the notes and their market value. We and our affiliates, including the Dealers, may buy or sell the securities represented by the Reference Asset, or futures or options contracts on the Reference Asset or those securities. We may execute such purchases or sales for our own accounts, for business reasons, or in connection with hedging our obligations under notes. These transactions could affect the value of these securities and, in turn, the value of a Reference Asset in a manner that could be adverse to your investment in notes. On or before the applicable pricing date, any purchases or sales by us, our affiliates or others on our behalf may increase the value of a Reference Asset or the securities represented by the Reference Asset. Consequently, the values of that Reference Asset or the securities represented by that Reference Asset may decrease subsequent to the pricing date of an issue of the notes, adversely affecting the market value of the notes.

We, or one or more of our affiliates, including the Dealers, may also engage in hedging activities that could increase the value of the Reference Asset on the applicable pricing date. In addition, these activities may decrease the market value of your notes prior to maturity, and may affect the amounts to be paid on the notes. We or one or more of our affiliates, including the Dealers, may purchase or otherwise acquire a long or short position in notes and may hold or resell notes. For example, the Dealers may enter into these transactions in connection with any market making activities in which they engage. We cannot assure you that these activities will not adversely affect the value of the Reference Asset, the market value of your notes prior to maturity or the amounts payable on the notes.

Our trading, hedging and other business activities may create conflicts of interest with you. We or one or more of our affiliates, including the Dealers, may engage in trading activities related to the Reference Asset and to securities represented by the Reference Asset that are not for your account or on your behalf. We or one or more of our affiliates, including the Dealers, also may issue or underwrite other financial instruments with returns based upon the applicable Reference Asset. These trading and other business activities may present a conflict of interest between your interest in notes and the interests we and our affiliates, including the Dealers, may have in our proprietary accounts, in facilitating transactions, including block trades, for our or their other customers, and in accounts under our or their management. These trading and other business activities, if they influence the value of the Reference Asset or secondary trading in your notes, could be adverse to your interests as a beneficial owner of the notes.

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

There may be potential conflicts of interest involving the calculation agent. We have the right to change the calculation agent. We are the calculation agent for notes and, as such, will make a variety of determinations relating to the notes, including the amounts that will be paid on the notes. Under some circumstances, these duties could result in a conflict of interest between our status as the issuer, and our responsibilities as calculation agent. These conflicts could occur, for instance, in connection with the calculation agent's determination as to whether a market disruption event (as defined below) has occurred, or in connection with judgments that we would be required to make if the publication of an index is discontinued. The calculation agent will be required to carry out its duties in good faith and use its reasonable judgment. However, because we are the calculation agent, potential conflicts of interest could arise.

Significant aspects of the tax treatment of the notes are uncertain. The tax treatment of the notes is uncertain. We do not plan to request a ruling from the Internal Revenue Service (the "IRS") or from any Canadian authorities regarding the tax treatment of the notes, and the IRS or a court may not agree with the tax treatment described in this product supplement.

If any Reference Asset is an ETF, while the matter is not entirely clear, unless otherwise specified in the applicable pricing supplement, there exists a substantial risk that an investment in a note is, in whole or in part, a "constructive ownership transaction" to which Section 1260 of the Code applies. If Section 1260 of the Code applies, all or a portion of any long-term capital gain recognized by a United States Holder in respect of a note will be recharacterized as ordinary income and certain interest charges may apply. See the section entitled "Supplemental Discussion of U.S. Federal Income Tax Consequences – Supplemental U.S. Tax Considerations – Potential Application of Section 1260 of the Code."

The IRS has issued a notice indicating that it and the Treasury Department are actively considering whether, among other issues, a holder should be required to accrue interest over the term of an instrument such as the notes even though that holder will not receive any payments with respect to the notes until maturity and whether all or part of the gain a holder may recognize upon sale or maturity of an instrument such as the notes could be treated as ordinary income. The outcome of this process is uncertain and could apply on a retroactive basis.

Please read carefully the sections entitled "Supplemental Discussion of U.S. Federal Income Tax Consequences" in this product supplement and the section entitled "United States Federal Income Taxation" in the accompanying offering circular. You should consult your tax advisor about your own tax situation.

Risks Relating to the Reference Assets

You must rely on your own evaluation of the merits of an investment linked to the applicable Reference Asset. In the ordinary course of their businesses, we, the Dealers and our respective affiliates may have

expressed views on expected movements in a Reference Asset or the securities represented by the Reference Asset, and may do so in the future. These views or reports may be communicated to our clients and clients of our respective affiliates. However, these views are subject to change from time to time. Moreover, other professionals who deal in markets relating to a Reference Asset may at any time have significantly different views from those that we, the Dealers, or our respective affiliates may have. For these reasons, you are encouraged to derive information concerning a Reference Asset or the securities represented thereby from multiple sources, and you should not rely on the views expressed by us, the Dealers or our respective affiliates.

As a note holder, you will have no shareholder rights, and you will not be entitled to receive any of the securities represented by the Reference Asset, or dividends or other distributions by the issuers of these securities. The notes are our debt securities. They are not equity instruments, shares of stock, or securities of any other issuer. Investing in notes will not make you a holder of any of the securities represented by the Reference Asset. You will not have any voting rights, any rights to receive dividends or other distributions, or any other rights with respect to those securities. As a result, the return on your notes may not reflect the return you would realize if you actually owned those securities and received the dividends paid or other distributions made in connection with them. Additionally, the levels of certain indices reflect only the prices of the securities included in that index and do not take into consideration the value of dividends paid on those securities. Your notes will be paid in cash and you have no right to receive delivery of any of these securities.

If the Reference Asset to which your notes are linked represents equity securities traded on foreign exchanges, your return may be affected by factors affecting international securities markets. The value of securities traded outside of the U.S. may be adversely affected by a variety of factors relating to the relevant securities markets. Factors which could affect those markets, and therefore the return on your notes, include:

- **Market Volatility.** The relevant foreign securities markets may be more volatile than U.S. or other securities markets and may be affected by market developments in different ways than U.S. or other securities markets.
- **Political, Economic, and Other Factors.** The prices and performance of securities of companies in foreign countries may be affected by political, economic, financial, and social factors in those regions. Direct or indirect government intervention to stabilize a particular securities market and cross-shareholdings in companies in the relevant foreign markets may affect prices and the volume of trading in those markets. In addition, recent or future changes in government, economic, and fiscal policies in the relevant jurisdictions, the possible imposition of, or changes in, currency exchange laws, or other laws or restrictions, and possible fluctuations in the rate of exchange between currencies, are factors that could negatively affect the relevant securities markets. The relevant foreign economies may differ favorably or unfavorably from the U.S. economy in economic factors such as growth of gross national product, rate of inflation, capital reinvestment, resources, and self-sufficiency.

In particular, many emerging nations are undergoing rapid change, involving the restructuring of economic, political, financial and legal systems. Regulatory and tax environments may be subject to change without review or appeal, and many emerging markets suffer from underdevelopment of capital markets and tax systems. In addition, in some of these nations, issuers of the relevant securities face the threat of expropriation of their assets, and/or nationalization of their businesses. The economic and financial data about some of these countries may be unreliable.

- **Publicly Available Information.** There is generally less publicly available information about foreign companies than about U.S. companies that are subject to the reporting requirements of the SEC. In addition, accounting, auditing, and financial reporting standards and requirements in foreign countries differ from those applicable to U.S. reporting companies.

Changes that affect the Reference Asset may adversely affect the return on the notes. The policies of the sponsor or the investment advisor of a Reference Asset, concerning the calculation of such Reference Asset, additions, deletions or substitutions of the components of such Reference Asset and the manner in which changes affecting those components, such as stock dividends, reorganizations or mergers, may be reflected in such Reference Asset and, therefore, could adversely affect the value of such Reference Asset, the amount payable on the notes, and the market value of the notes prior to maturity. The amount payable on the notes and their market value could also be adversely affected if the sponsor or the investment advisor of a Reference Asset changes these policies, for

example, by changing the manner in which it calculates a Reference Asset, or if it discontinues or suspends the calculation or publication of such Reference Asset.

Unless otherwise set forth in the applicable pricing supplement, we and the Dealers do not control any company represented by any Reference Asset and are not responsible for any disclosure made by any other company that we, the Dealers, or our respective affiliates may have. Unless otherwise set forth in the applicable pricing supplement, we, the Dealers, and our respective affiliates are not affiliated with any companies represented by a Reference Asset. We and the Dealers currently, or in the future, may engage in business with companies represented by a Reference Asset, and affiliates may from time to time own securities of companies represented by a Reference Asset. However, neither we nor any of our affiliates, including the Dealers, have the ability to control the actions of any of these companies or have undertaken any independent review of, or made any due diligence inquiry with respect to, any of these companies, unless (and only to the extent that) our securities or the securities of our affiliates (or those of the Dealers) are represented by that Reference Asset. In addition, unless otherwise set forth in the applicable pricing supplement, none of us, the Dealers or our respective affiliates are responsible for the calculation of any index included in the applicable Reference Asset, or any index underlying an ETF (an “Underlying Index”) included in that Reference Asset. You should make your own investigation into the Reference Asset.

Unless otherwise set forth in the applicable pricing supplement, none of the sponsors of an index or Underlying Index, their affiliates, or any companies represented by the Reference Asset will be involved in any offering of the notes or will have any obligation of any sort with respect to the notes. As a result, none of those companies will have any obligation to take your interests as holders of the notes into consideration for any reason, including taking any corporate actions that might affect the value of the securities represented by the Reference Asset or the value of the notes.

Our business activities relating to the companies represented by a Reference Asset may create conflicts of interest with you. We and our affiliates, including the Dealers, at the time of any offering of the notes or in the future, may engage in business with the companies represented by a Reference Asset, including making loans to, equity investments in, or providing investment banking, asset management, or other services to those companies, their affiliates, and their competitors.

In connection with these activities, we or our affiliates may receive information about those companies that we will not divulge to you or other third parties. We, the Dealers and our respective affiliates may have published, and in the future may publish, research reports on one or more of these companies. This research is modified from time to time without notice and may express opinions or provide recommendations that are inconsistent with purchasing or holding your notes. Any of these activities may affect the value of the Reference Asset and, consequently, the market value of your notes. We, the Dealers and our respective affiliates, do not make any representation to any purchasers of the notes regarding any matters whatsoever relating to the issuers of the securities represented by a Reference Asset. Any prospective purchaser of the notes should undertake an independent investigation of the companies represented by a Reference Asset to a level that, in its judgment, is appropriate to make an informed decision regarding an investment in the notes. The composition of the Reference Asset does not reflect any investment recommendations from us, the Dealers or our respective affiliates.

Additional Risks Relating to ETFs

There are liquidity and management risks associated with an ETF. Although shares of any ETF to which your notes are linked will be listed for trading on a securities exchange and a number of similar products have been traded on various exchanges for varying periods of time, there is no assurance that an active trading market will continue for the shares of that ETF or that there will be liquidity in the trading market.

ETFs are subject to management risk, which is the risk that the investment adviser’s investment strategy, the implementation of which is subject to a number of constraints, may not produce the intended results.

We cannot control actions by an ETF’s investment advisers which may adjust the ETF in a way that could adversely affect the value of the notes and the payments on the notes, and the investment adviser has no obligation to consider your interests. The policies of the investment adviser concerning the calculation of an ETF’s net asset value, additions, deletions, or substitutions of securities or other investments held by the ETF and the manner in which changes affecting the applicable Underlying Index are reflected in the ETF could affect the market price per share of the ETF and, therefore, the market value of the notes and the payments on the notes. The market value of the notes and the payments on the notes could also be affected if the investment adviser changes

these policies, for example, by changing the manner in which it calculates the ETF's net asset value, or if the investment adviser discontinues or suspends calculation or publication of the ETF's net asset value, in which case it may become difficult to determine the value of the applicable notes. If events such as these occur or if the closing price per share of the ETF is not available, the calculation agent may determine the closing price per share of the ETF on the applicable day; as a result, the calculation agent would determine the payments on the notes in a manner it considers appropriate, in its sole discretion.

The performance of an ETF and the performance of its Underlying Index may vary. The performance of an ETF and that of its Underlying Index may vary due to transaction costs, certain corporate actions, and timing variances. In addition, because the shares of an ETF are traded on a securities exchange and are subject to market supply and investor demand, the market value of one share of an ETF may differ from its net asset value per share; shares of an ETF may trade at, above, or below their net asset value per share.

For the foregoing reasons, the performance of an ETF may not match the performance of its Underlying Index over the same period. Because of this variance, the return on the notes, to the extent dependent on the return of an ETF, may not be the same as an investment directly in the securities or other investments included in the applicable Underlying Index or the same as a debt security with a payment at maturity linked to the performance of the Underlying Index.

Notes linked to an ETF that holds non-U.S. traded securities are subject to foreign currency exchange rate risk. The share price of an ETF that holds securities traded outside of the U.S. will fluctuate based upon its net asset value, which will in turn depend in part upon changes in the value of the currencies in which the securities held by the ETF are traded. Accordingly, investors in the notes will be exposed to currency exchange rate risk with respect to each of the currencies in which the securities held by the ETF are traded. An investor's net exposure will depend on the extent to which these currencies strengthen or weaken against the U.S. dollar. If, the dollar strengthens against these currencies, the net asset value of the ETF will be adversely affected and the price of the ETF may decrease.

Time zone differences between the cities where the Underlying Index and an ETF trade may create discrepancies in trading levels. As a result of the time zone difference between the cities where some of the securities comprising the Underlying Index trade and where the shares of the applicable ETF trade, there may be discrepancies between the values of the Underlying Index and the trading prices of the notes.

Other Risk Factors Relating to the Notes and the Applicable Reference Asset

The applicable pricing supplement will set forth additional risk factors as to the notes and the applicable Reference Asset that you should review prior to purchasing notes.

GENERAL TERMS OF THE NOTES

Please note that in this section entitled “General Terms of the Notes,” references to “holders” mean those who own notes registered in their own names, on the books that we or the trustee maintain for this purpose, and not those who own beneficial interests in notes registered in street name or in notes issued in book-entry form through The Depository Trust Company (“DTC”) or another depository. Owners of beneficial interests in the notes should read the section entitled “Book-Entry Clearance Systems” in the offering circular.

In addition to the terms described in the “Summary” section above and in the relevant pricing supplement, the following general terms in this section will apply to the notes.

Specified Currency

Unless otherwise specified in the relevant pricing supplement, any payments on the notes will be made in U.S. dollars (“\$”).

Form and Denomination

The notes will be issued only in global form through DTC. Unless otherwise specified in the relevant pricing supplement, the notes will be issued in minimum denominations of \$1,000 and integral multiples of \$1,000. The applicable pricing supplement may also specify an additional minimum purchase amount of the notes.

No Listing

Unless otherwise set forth in the applicable pricing supplement, your notes will not be listed or displayed on any securities exchange or included in any interdealer market quotation system.

Payment at Maturity

At maturity, subject to our credit risk as issuer of the notes, you will receive a cash payment that is based on the performance of the Reference Asset. The payment at maturity will be calculated as set forth in the relevant pricing supplement.

Determining the Level of the Reference Asset

Initial Level. The relevant pricing supplement will set forth the Initial Level of the Reference Asset. Unless otherwise specified in the relevant pricing supplement, the Initial Level will be its closing level or closing price, as applicable, on the trade date.

Final Level. Unless otherwise specified in the relevant pricing supplement, (a) the value of the Reference Asset on any valuation date will be its closing level or closing price, as applicable, on that date or (b) the average of the closing levels or closing prices, as applicable, of the Reference Asset on multiple averaging dates.

Determination Date, Averaging Dates and Observation Period

Notes with One Determination Date. The valuation date for your notes will be the date specified in the relevant pricing supplement, unless the calculation agent determines that a market disruption event occurs or is continuing on that day or that day is not a trading day. In that event, the valuation date will be the first following trading day on which the calculation agent determines that a market disruption event does not occur and is not continuing. If the originally scheduled stated maturity date for your notes is five or less scheduled business days following the originally scheduled valuation date, however, the valuation date will not be postponed to a date later than the originally scheduled stated maturity date or, if the originally scheduled stated maturity date is not a business day, later than the first business day after the originally scheduled stated maturity date. However, if the originally scheduled stated maturity date for your notes is six or more scheduled business days following the originally scheduled valuation date for your notes, the valuation date will not be postponed by more than five scheduled trading days. If a market disruption event occurs or is continuing on the day that is the last possible valuation date or that last possible day is not a trading day, that day will nevertheless be the valuation date, and the calculation agent will nevertheless determine the closing level or closing price, as applicable, of the Reference Asset or the applicable exchange rate (if the Reference Asset is adjusted to reflect its U.S. dollar value) based on its assessment, made in its sole discretion, of the value of the Reference Asset on that day.

Notes with Averaging Dates. If the calculation agent determines that a market disruption event occurs or is continuing on an averaging date, or if that day is not a trading day, then that averaging date and any other remaining

averaging dates will be postponed to the first following trading day(s) on which the calculation agent determines that a market disruption event does not occur and is not continuing. If the originally scheduled maturity date for your notes is five or less scheduled business days following the originally scheduled final averaging date, however, the final averaging date will not be postponed to a date later than the originally scheduled stated maturity date or, if the originally scheduled stated maturity date is not a business day, later than the first business day after the originally scheduled stated maturity date. However, if the originally scheduled stated maturity date for your notes is six or more scheduled business days following the originally scheduled final averaging date for your notes, the final averaging date will not be postponed by more than five scheduled trading days. If a market disruption event occurs or is continuing on the day that is the last possible final averaging date or that last possible day is not a trading day, that day will nevertheless be the final averaging date, and the calculation agent will nevertheless determine the closing level or closing price, as applicable, of the Reference Asset based on its assessment, made in its sole discretion, of the value of the Reference Asset on that day. In such cases, more than one averaging date may occur simultaneously on such last possible day.

Notes with Observation Period. If any date during a period in which the value of the Reference Asset is observed either continuously or at market close for the occurrence of a knock-out or other event (an “Observation Period”) is not a trading day, such date will be excluded from the Observation Period. If a market disruption event exists on any date during an Observation Period (other than a valuation date), then such date will be excluded from the Observation Period, unless a market disruption event exists or continues for five or more consecutive scheduled trading days during an Observation Period, in which case such fifth consecutive day and each following day in the Observation Period until the occurrence of a trading day without a market disruption event will nonetheless be part of the Observation Period and the calculation agent will nevertheless determine the closing level or closing price, as applicable, of the Reference Asset based on its assessment, made in its sole discretion, of the value of the Reference Asset on that day for each such date. If a valuation date that is part of an originally scheduled Observation Period is postponed, then the Observation Period will be extended to include such valuation date as postponed.

For each security that makes up the Reference Asset, the calculation agent will determine whether a market disruption event exists on a valuation date with respect to each security independent from other securities. Therefore, a market disruption event may exist for certain securities and not exist for other securities.

Maturity Date

The maturity date for your notes will be the date specified in the relevant pricing supplement, unless that date is not a business day, in which case the stated maturity date will be postponed to the next following business day.

The maturity date will also be postponed if the originally scheduled stated maturity date for your notes as specified in the relevant pricing supplement is five or less scheduled business days following the originally scheduled valuation date or final averaging date (as applicable) for your notes and that date is postponed as described under “—Determination Date, Averaging Dates and Observation Period” above. In such a case, the stated maturity date will be postponed by the same number of business days as the originally scheduled valuation date or final averaging date (as applicable). If, however, the originally scheduled stated maturity date for your notes is six or more scheduled business days following the original valuation date or final averaging date (as applicable) for your notes, any such postponement will not postpone the stated maturity date.

Unavailability of the Level of the Reference Asset

If, with respect to a Reference Asset that is an index, a Reference Asset Sponsor discontinues publication of the Reference Asset or, with respect to a Reference Asset that is an ETF, the Reference Asset is delisted from the exchange on which the Reference Asset has its primary listing, and that Reference Asset Sponsor, if applicable, or anyone else publishes a substitute Reference Asset that the calculation agent determines is comparable to the applicable Reference Asset or if the calculation agent designates a substitute Reference Asset, then the calculation agent will determine the amount payable on the maturity date by reference to the substitute Reference Asset. We refer to any substitute Reference Asset approved by the calculation agent as a successor Reference Asset.

If the calculation agent determines that, with respect to a Reference Asset that is an index, the publication of the index is discontinued, or with respect to a Reference Asset that is an ETF, the Reference Asset is delisted from the exchange on which the Reference Asset has its primary listing, and there is no successor Reference Asset, the calculation agent will determine the amount payable on the stated maturity date by a computation methodology that the calculation agent determines will as closely as reasonably possible replicate the applicable Reference Asset.

If the calculation agent determines that a Reference Asset or any constituent index (as defined below) of a Reference Asset or the method of calculating a Reference Asset is changed at any time in any respect—including any split or reverse split of the applicable Reference Asset as described under “—Anti-dilution Adjustments for Exchange Traded Funds” below, any addition, deletion or substitution, and any reweighting or rebalancing of the constituent indices, if applicable, or the applicable underlying stocks, and whether the change is made by the applicable Reference Asset Sponsor under its existing policies or following a modification of those policies, is due to the publication of a successor Reference Asset, is due to events affecting one or more of the applicable underlying stocks or their issuers, or is due to any other reason—and is not otherwise reflected in the value of the applicable Reference Asset by the applicable Reference Asset Sponsor pursuant to the applicable methodology described in the relevant pricing supplement, then the calculation agent will be permitted (but not required) to make such adjustments in the applicable Reference Asset or the method of its calculation as it believes are appropriate to ensure that the Final Level used to determine the amount payable on the stated maturity date is equitable. Accordingly, if the method of calculating an index is modified so that the value of that index is a fraction of what it would have been if it had not been modified (e.g., due to a split in the index), then the calculation agent will adjust the index in order to arrive at a value of that Reference Asset as if it had not been modified (e.g., as if such split had not occurred).

All determinations and adjustments to be made by the calculation agent with respect to an index may be made by the calculation agent in its sole discretion. The calculation agent is not obligated to make any such adjustments.

If the calculation agent substitutes or otherwise affects or modifies a Basket Component, then the calculation agent will make those calculations and adjustments as, in judgment of the calculation agent, may be necessary in order to arrive at a basket comparable to the original basket (including without limitation changing the percentage weights of the Basket Components), as if those changes or modifications had not been made, and will calculate the cash settlement amount with reference to that basket or the successor basket (as described below), as adjusted.

In this event, the calculation agent will provide written notice to the trustee of these calculations and adjustments, and the trustee will furnish written notice thereof, to the extent the trustee is required to under the senior debt indenture, to each noteholder, or in the case of global notes, the depositary, as holder of the global notes.

In the event of the adjustment described above, the newly composed basket is referred to in this section as the “successor basket” and will be used as a substitute for the original basket for all purposes.

Notwithstanding these alternative arrangements, any changes to an applicable index may adversely affect the market value of the notes.

Market Disruption Events

Indices. With respect to any given trading day, any of the following will be a market disruption event with respect to a Reference Asset that is an index:

- a suspension, absence or material limitation of trading in underlying stocks constituting 20% or more, by weight, of the applicable Reference Asset or any constituent index of that Reference Asset on their respective primary markets, in each case for more than two consecutive hours of trading or during the one-half hour before the close of trading in that market, as determined by the calculation agent in its sole discretion;
- a suspension, absence or material limitation of trading in option or futures contracts, if available, relating to the applicable Reference Asset or any constituent index of that Reference Asset or to underlying stocks constituting 20% or more, by weight, of the applicable Reference Asset or any constituent index of that Reference Asset in the respective primary markets for those contracts, in each case for more than two consecutive hours of trading or during the one-half hour before the close of trading in that market, as determined by the calculation agent in its sole discretion; or
- underlying stocks constituting 20% or more, by weight, of the applicable Reference Asset or any constituent index of that Reference Asset, or option or futures contracts, if available, relating to the applicable Reference Asset or any constituent index of such Reference Asset, or to underlying stocks constituting 20% or more, by weight, of the applicable Reference Asset or any constituent index of that

Reference Asset do not trade on what were the respective primary markets for those underlying stocks or contracts, as determined by the calculation agent in its sole discretion,

and, in the case of any of these events, the calculation agent determines in its sole discretion that the event could materially interfere with the ability of National Bank of Canada or any of its affiliates or a similarly situated party to unwind all or a material portion of a hedge that could be effected with respect to the notes.

The following events will not be market disruption events with respect to a Reference Asset that is an index:

- a limitation on the hours or numbers of days of trading, but only if the limitation results from an announced change in the regular business hours of the relevant market, and
- a decision to permanently discontinue trading in the option or futures contracts relating to the applicable Reference Asset or any constituent index of that Reference Asset or to any underlying stock.

For this purpose, an “absence of trading” in the primary securities market on which an underlying stock, or on which option or futures contracts, if available, relating to any Reference Asset or any constituent index of that Reference Asset or to any underlying stock are traded will not include any time when that market is itself closed for trading under ordinary circumstances. In contrast, a suspension or limitation of trading in an underlying stock or in option or futures contracts, if available, relating to any Reference Asset or any constituent index of that Reference Asset or to any underlying stock in the primary market for that stock or those contracts, by reason of:

- a price change exceeding limits set by that market;
- an imbalance of orders relating to that underlying stock or those contracts; or
- a disparity in bid and ask quotes relating to that underlying stock or those contracts,

will constitute a suspension or material limitation of trading in that Reference Asset or those contracts in that market.

For purposes of this subsection, a “constituent index” of a Reference Asset with respect to the MSCI EAFE Index or MSCI Emerging Markets Index refers to the component country indices that comprise the MSCI EAFE Index or MSCI Emerging Markets Index. For any other Reference Asset, the relevant pricing supplement will specify the constituent indices of the Reference Asset, if any, that comprise or underlie the applicable Reference Asset or Basket Components to which your note may be linked.

The following will also be a market disruption event with respect to Reference Assets that are denominated in currencies other than U.S. dollars or the underlying stocks of which trade in currencies other than U.S. dollars if those Reference Assets are adjusted to reflect their U.S. dollar value:

- with respect to the exchange rate applicable to that Reference Asset or underlying stocks, a market disruption event will occur when the exchange rate is not available as specified in the relevant pricing supplement *if* the calculation agent determines in its sole discretion that the event could materially interfere with the ability of National Bank of Canada or any of its affiliates or a similarly situated party to unwind all or a material portion of a hedge that could be effected with respect to the notes.

Exchange Traded Funds. The following events will be market disruption events with respect to a Reference Asset that is an ETF:

- a suspension, absence or material limitation of trading in the Reference Asset on its primary market for more than two consecutive hours of trading or during the one half-hour before the close of trading in that market, as determined by the calculation agent in its sole discretion;
- a suspension, absence or material limitation of trading in option or futures contracts relating to the Reference Asset in the primary market for those contracts for more than two consecutive hours of trading or during the one-half hour before the close of trading in that market, as determined by the calculation agent in its sole discretion; or
- the Reference Asset does not trade on what was the primary market for the Reference Asset, as determined by the calculation agent in its sole discretion,

and, in the case of any of these events, the calculation agent determines in its sole discretion that the event could materially interfere with the ability of National Bank of Canada or any of its affiliates or a similarly situated party to unwind all or a material portion of a hedge that could be effected with respect to the notes.

The following events will not be market disruption events with respect to a Reference Asset that is an ETF:

- a limitation on the hours or numbers of days of trading, but only if the limitation results from an announced change in the regular business hours of the relevant market, and
- a decision to permanently discontinue trading in option or futures contracts relating to the Reference Asset.

For this purpose, an “absence of trading” in the primary securities market on which shares of the Reference Asset are traded, or on which option or futures contracts, if available, relating to the Reference Asset are traded, will not include any time when that market is itself closed for trading under ordinary circumstances. In contrast, a suspension or limitation of trading in shares of the Reference Asset or in option or futures contracts, if available, relating to the Reference Asset in the primary market for that Reference Asset or those contracts, by reason of:

- a price change exceeding limits set by that market,
- an imbalance of orders relating to the shares of the Reference Asset or those contracts, or
- a disparity in bid and ask quotes relating to the shares of the Reference Asset or those contracts,

will constitute a suspension or material limitation of trading in shares of the Reference Asset or those contracts in that market.

* * *

A market disruption event with respect to one or more Basket Components will not, by itself, constitute a market disruption event for the remaining unaffected Basket Component or Basket Components.

As is the case throughout this product supplement, references to a Reference Asset in this description of market disruption events includes the applicable Reference Asset or Basket Components and any successor Reference Asset as it may be modified, replaced or adjusted from time to time.

Anti-dilution Adjustments for Exchange Traded Funds

For notes linked to ETFs, the calculation agent will have discretion to adjust the closing price of the Reference Asset, or any Basket Component, as applicable, if certain events occur. Exchange traded funds are registered investment companies that are eligible for trading on the exchanges on which they are listed. Generally, ETFs (other than commodities-based ETFs) are subject to regulation under the Investment Company Act of 1940 and are restricted in their activities and have dividend requirements. In the event that any event other than a delisting or withdrawal from the relevant exchange occurs with respect to an ETF that is a Reference Asset, the calculation agent shall determine whether and to what extent an adjustment should be made to the price of the Reference Asset or any other term. The calculation agent shall have no obligation to make an adjustment for any such event.

Default Amount on Acceleration

Unless otherwise specified in the relevant pricing supplement, in case an event of default with respect to the notes shall have occurred and be continuing, the amount declared due and payable on the notes upon any acceleration of the notes will be determined by the calculation agent and will be an amount in cash equal to the amount payable on the maturity date as described in the relevant pricing supplement, calculated as if the date of acceleration were the valuation date.

If the maturity of the notes is accelerated because of an event of default, we will, or will cause the calculation agent to, provide written notice to the trustee at its New York office, on which notice the trustee may conclusively rely, and to the depository, of the cash amount due with respect to the notes as promptly as possible and in no event later than two business days after the date of acceleration.

Manner of Payment and Delivery

Any payment on the notes at maturity will be made to accounts designated by you and approved by us, or at the office of the trustee in New York City. The cash settlement amount will only be made when the notes are

surrendered to the trustee at that office. We also may make any payment or delivery in accordance with the applicable procedures of the depository.

Modified Business Day

As described in the accompanying offering circular, any payment on your note that would otherwise be due on a day that is not a business day may instead be paid on the next day that is a business day, with the same effect as if paid on the original due date. For your note, however, the term business day may have a different meaning than it does for other structured notes as described in the offering circular. We discuss this term under “—Special Calculation Provisions” below.

Role of Calculation Agent

The calculation agent will make all determinations regarding the value of the Reference Asset, business days, trading days, market disruption events, any anti-dilution or similar adjustments for the ETFs, the default amount, and the amount payable on your notes. Absent manifest error, all determinations of the calculation agent will be final and binding on you and us, without any liability on the part of the calculation agent. You will not be entitled to any compensation from us for any loss suffered as a result of any of the above determinations or confirmations by the calculation agent.

We expect to serve as the calculation agent for the notes, unless otherwise indicated in the applicable pricing supplement. We may change the calculation agent for your notes at any time without notice, and the calculation agent may resign as calculation agent.

Special Calculation Provisions

Business Day

Unless otherwise specified in the relevant pricing supplement, a “business day” means each Monday, Tuesday, Wednesday, Thursday and Friday that is neither a legal holiday nor a day on which banking institutions are authorized or required by law, regulation or executive order to close in New York City, New York, Toronto, Ontario, or Montréal, Québec

Trading Day

Indices. Unless otherwise set forth in the relevant pricing supplement, a “trading day” with respect to any Reference Asset, other than the MSCI EAFE Index, MSCI Emerging Markets Index or the EURO STOXX 50[®] Index, means a day on which (i) the respective principal securities markets for all of the underlying stocks that comprise that Reference Asset are open for trading, (ii) the Reference Asset Sponsor for that Reference Asset is open for business and (iii) that Reference Asset is calculated and published by the applicable Reference Asset Sponsor. Although a Reference Asset Sponsor may publish a level with respect to the applicable Reference Asset on a day when one or more of the principal securities markets for the underlying stocks for the applicable Reference Asset are closed, that day would not be a trading day for purposes of the applicable Reference Asset.

Unless otherwise set forth in the relevant pricing supplement, a “trading day” with respect to the MSCI EAFE Index, MSCI Emerging Markets Index or the EURO STOXX 50[®] Index means a day on which the relevant index is calculated and published by its Reference Asset Sponsor. Therefore, in the case of the MSCI EAFE Index or the MSCI Emerging Markets Index, a day would be a trading day regardless of whether one or more of the principal securities markets for the underlying stocks for that index are closed on that day, if the Reference Asset Sponsor publishes that level on that day. Similarly, in the case of the EURO STOXX 50[®] Index, a day would be a trading day regardless of whether one or more of the principal securities markets for the underlying stocks for the EURO STOXX 50[®] Index are closed on that day, if the Reference Asset Sponsor publishes the EURO STOXX 50[®] Index level on that day.

Exchange Traded Funds. Unless otherwise set forth in the relevant pricing supplement, a “trading day” with respect to an ETF means a day on which (i) the exchange on which such Reference Asset has its primary listing is open for trading and (ii) the price of one share of the Reference Asset is quoted by the exchange on which that Reference Asset has its primary listing.

HYPOTHETICAL RETURNS ON YOUR NOTES

The relevant pricing supplement may include a table or chart showing hypothetical amounts that could be delivered for your notes at maturity, based on a range of hypothetical values of the Reference Asset and on various key assumptions shown in the relevant pricing supplement.

Any table or chart showing hypothetical amounts will be provided for purposes of illustration only. It should not be viewed as an indication or prediction of future investment results. Rather, it is intended merely to illustrate the impact that various hypothetical levels of the Reference Asset on the valuation date or averaging dates (as applicable), as calculated in the manner described in the relevant pricing supplement and assuming all other variables remained constant. The hypothetical amounts listed in the relevant pricing supplement will be entirely hypothetical. They will be based on values of the Reference Asset that may not be achieved on the relevant dates and on assumptions that may prove to be erroneous.

As calculated in the relevant pricing supplement, the hypothetical amounts payable on your notes at maturity may bear little or no relationship to the actual market value of your notes on that date or at any other time, including any time you might wish to sell your notes. In addition, you should not view the hypothetical amounts as an indication of the possible financial return on an investment in your notes, since the financial return will be affected by various factors, including taxes, that the hypothetical information does not take into account. Moreover, whatever the financial return on your notes might be, it may bear little relation to—and may be much less than—the financial return that you might achieve were you to invest directly in the Reference Asset.

We cannot predict the values of the Reference Asset or, therefore, the cash settlement amount. Moreover, the assumptions we make in connection with any hypothetical information in the relevant pricing supplement may not reflect actual events. Consequently, that information may give little or no indication of the amount that will be paid in respect of your notes at maturity, nor should it be viewed as an indication of the financial return on your notes or of how that return might compare to the financial return on an investment directly in the Reference Asset.

USE OF PROCEEDS

Unless otherwise specified in the applicable pricing supplement, we intend to use the net proceeds we receive from the sale of the notes for general corporate purposes. In addition, we expect that we or our affiliates may use a portion of the net proceeds to hedge our obligations under the notes. We or our affiliates may close out our or their hedge on or before the stated maturity date.

HISTORICAL REFERENCE ASSET INFORMATION

We may provide historical performance of the Reference Asset or applicable Basket Components in the relevant pricing supplement. You should not take any of those historical values as an indication of the future performance. We cannot give you any assurance that the value of the Reference Asset or Basket Components will not decrease (or, in the case of notes inversely linked to the performance of a Reference Asset, increase), thus causing you to receive an amount that is less than the principal amount of your notes at maturity.

SUPPLEMENTAL DISCUSSION OF CANADIAN TAX CONSEQUENCES

An investor should carefully read the description of material Canadian federal income tax considerations relevant to a Non-resident Holder owning debt securities under “Taxation—Canada” in the accompanying offering circular.

If you are not a Non-resident Holder (as that term is defined in “Taxation—Canada” in the accompanying offering circular) or if you acquire the notes in the secondary market, you should consult your tax advisors as to the consequences of acquiring, holding and disposing of the notes and receiving the payments that are, or may become, due under the notes.

SUPPLEMENTAL DISCUSSION OF U.S. FEDERAL INCOME TAX CONSEQUENCES

The following is a general description of certain U.S. tax considerations relating to the notes. It does not purport to be a complete analysis of all tax considerations relating to the notes. Prospective purchasers of the notes should consult their tax advisors as to the consequences under the tax laws of the country of which they are resident for tax purposes and the tax laws of Canada and the U.S. of acquiring, holding and disposing of the notes and receiving payments under the notes. This summary is based upon the law as in effect on the date of this product supplement and is subject to any change in law that may take effect after such date.

Supplemental U.S. Tax Considerations

The following disclosure has been prepared without regard to any particular note that you may purchase in the future and, therefore, is provided solely as a matter of general information. You should not rely upon the following disclosure, or the disclosure under “Taxation—United States Federal Income Taxation” in the offering circular, with regard to an investment in any particular note because this disclosure does not take into account the terms of any particular note or the tax consequences of investing in or holding any particular note unless the pricing supplement applicable to your notes expressly indicates that you may rely on the following disclosure. Any note that you purchase may have terms that would result in a tax treatment that is significantly different from the treatment described below. For example, the discussion below assumes that an investor in the notes will be subject to a significant risk that it will lose a significant amount of its investment in the notes. If an investor in the notes is not subject to a significant risk that it will lose a significant amount of its investment in the notes, the tax treatment of that note may differ substantially from that described in the discussion below. There may be other features or terms of your notes that will cause this tax section to be inapplicable to your notes.

Consequently, any tax disclosure relevant to any note you may purchase will be set forth only in the pricing supplement relating to your note, and, unless the pricing supplement indicates otherwise, you should not rely on the tax disclosure below or in the offering circular in deciding whether to invest in any note. Moreover, in all cases, you should consult with your own tax advisor concerning the consequences of investing in and holding any particular note you propose to purchase.

The following section supplements the discussion of U.S. federal income taxation in the accompanying offering circular. It applies only to those initial holders who are not excluded from the discussion of U.S. federal income taxation in the accompanying offering circular.

NO STATUTORY, JUDICIAL OR ADMINISTRATIVE AUTHORITY DIRECTLY DISCUSSES HOW THE NOTES SHOULD BE TREATED FOR U.S. FEDERAL INCOME TAX PURPOSES. AS A RESULT, THE U.S. FEDERAL INCOME TAX CONSEQUENCES OF AN INVESTMENT IN THE NOTES ARE UNCERTAIN. BECAUSE OF THE UNCERTAINTY, YOU SHOULD CONSULT YOUR TAX ADVISOR IN DETERMINING THE U.S. FEDERAL INCOME TAX AND OTHER TAX CONSEQUENCES OF YOUR INVESTMENT IN THE NOTES, INCLUDING THE APPLICATION OF STATE, LOCAL OR OTHER TAX LAWS AND THE POSSIBLE EFFECTS OF CHANGES IN FEDERAL OR OTHER TAX LAWS.

We will not attempt to ascertain whether the Reference Assets or any components of any of the Reference Assets would be treated as a “passive foreign investment company” within the meaning of Section 1297 of the Code or a “U.S. real property holding corporation” within the meaning of Section 897 of the Code. If the Reference Assets or any components of one or more of such Reference Assets were so treated, certain adverse U.S. federal income tax consequences could possibly apply. You should refer to any available information filed with the SEC and other authorities by the Reference Assets and the components of any of the Reference Assets and consult your tax advisor regarding the possible consequences to you in this regard.

Although there is no statutory, judicial, or administrative authority directly addressing the characterization of the notes, we intend to treat a note with terms described in this product supplement as a pre-paid cash-settled derivative contract in respect of the Reference Asset or basket for U.S. federal income tax purposes, and the terms of the notes require a holder and us (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the notes for all tax purposes in accordance with such characterization. If the notes are so treated, subject to the discussion below concerning the potential application of the “constructive ownership” rules under Section 1260 of the Code, a U.S. holder should generally recognize capital gain or loss upon the sale or maturity of the notes in an amount equal to the difference between the amount a holder receives at such time and the holder’s tax basis in the notes. In general, a U.S. holder’s tax basis in the notes will be equal to the price the holder paid for the notes. Capital gain recognized by an individual U.S. holder is generally taxed at preferential rates where the

property is held for more than one year and is generally taxed at ordinary income rates where the property is held for one year or less. The deductibility of capital losses is subject to limitations. The holding period for notes of a U.S. holder who acquires the notes upon issuance will generally begin on the date after the original issue date (i.e., the settlement date) of the notes. If the notes are held by the same U.S. holder until maturity, that holder's holding period will generally include the stated maturity date. It is possible that the IRS could assert that a U.S. holder's holding period in respect of the notes should end on the date on which the amount the holder is entitled to receive upon the maturity of the notes is determined, even though the holder will not receive any amounts from us in respect of the notes prior to the maturity of the notes. In such case, if that date is not in excess of one year from the issue date, a U.S. holder may be treated as having a holding period in respect of the notes that is one year or less even if the holder receives cash upon maturity of the notes at a time that is more than one year after the beginning of its holding period.

Potential Application of Section 1260 of the Internal Revenue Code. If one or more of the Reference Assets is or includes the type of financial asset described under Section 1260 of the Code (including, among others, any equity interest in pass-thru entities such as ETFs, regulated investment companies, real estate investment trusts, partnerships, and passive foreign investment companies, each a "Section 1260 Financial Asset"), while the matter is not entirely clear, unless otherwise specified in the relevant pricing supplement, there exists a substantial risk that an investment in a note is, in whole or in part, a "constructive ownership transaction" to which Section 1260 of the Code applies. If Section 1260 of the Code applies, all or a portion of any long-term capital gain recognized by a U.S. holder in respect of a note will be recharacterized as ordinary income (the "excess gain"). In addition, an interest charge will also apply to any deemed underpayment of tax in respect of any excess gain to the extent such gain would have resulted in gross income inclusion for the U.S. holder in taxable years prior to the taxable year of the sale or maturity (assuming such income accrued at a constant rate equal to the applicable federal rate as of the date of sale or maturity).

If an investment in a note is treated as a constructive ownership transaction, it is not clear to what extent any long-term capital gain of a U.S. holder in respect of the note will be recharacterized as ordinary income. It is possible, for example, that the amount of the excess gain (if any) that would be recharacterized as ordinary income in respect of the note will equal the excess of (i) any long-term capital gain recognized by the U.S. holder in respect of the note and attributable to Section 1260 Financial Assets, over (ii) the "net underlying long-term capital gain" (as defined in Section 1260 of the Code) such U.S. holder would have had if such U.S. holder had acquired an amount of the corresponding Section 1260 Financial Assets at fair market value on the original issue date for an amount equal to the portion of the issue price of the note attributable to the corresponding Section 1260 Financial Assets and sold such amount of Section 1260 Financial Assets upon the date of sale, exchange, or settlement of the note at fair market value (and appropriately taking into account any leveraged upside exposure). Alternatively, the IRS may contend that the excess gain should not be limited to amounts attributable to a Section 1260 Financial Asset, but should instead apply to the all of the Reference Asset(s). To the extent any gain is treated as long-term capital gain after application of the recharacterization rules of Section 1260 of the Code, such gain would be subject to U.S. federal income tax at the rates that would have been applicable to the net underlying long-term capital gain. However, unless otherwise established by clear and convincing evidence, the net underlying long-term capital gain is treated as zero. U.S. holders should consult their tax advisors regarding the potential application of Section 1260 of the Code to an investment in the note.

Alternative Treatments. Alternative tax treatments of the notes are also possible and the IRS might assert that a treatment other than that described above is more appropriate. For example, it is possible to treat the notes, and the IRS might assert that the notes should be treated, as a single debt instrument. If the notes have a term that exceeds one year, such a debt instrument would be subject to the special tax rules governing contingent payment debt instruments. If the notes are so treated, a holder would generally be required to accrue interest currently over the term of the notes even though that holder will not receive any payments from us prior to maturity. In addition, any gain a holder might recognize upon the sale or maturity of the notes would generally be ordinary income and any loss recognized by a holder at such time would be ordinary loss to the extent of interest that same holder included in income in the current or previous taxable years in respect of the notes, and thereafter, would be capital loss. If the notes are treated as a single debt instrument that has a term of no more than one year, the notes would be treated as a single contingent short-term debt instrument, which would also result in tax consequences that are different from those described above.

If the Reference Asset is, or a basket includes, an index that periodically rebalances, it is possible that the notes could be treated as a series of derivative contracts, each of which matures on the next rebalancing date. If the

notes were properly characterized in such a manner, a holder would be treated as disposing of the notes on each rebalancing date in return for new derivative contracts that mature on the next rebalancing date, and a holder would accordingly likely recognize capital gain or loss on each rebalancing date equal to the difference between the holder's basis in the notes (which would be adjusted to take into account any prior recognition of gain or loss) and the fair market value of the notes on such date.

Because of the absence of authority regarding the appropriate tax characterization of the notes, it is also possible that the IRS could seek to characterize the notes in a manner that results in tax consequences that are different from those described above. For example, the IRS could possibly assert that any gain or loss that a holder may recognize upon the sale or maturity of the notes should be treated as ordinary gain or loss.

The IRS has released a notice that may affect the taxation of holders of the notes. According to the notice, the IRS and the U.S. Treasury Department are actively considering whether the holder of an instrument similar to the notes should be required to accrue ordinary income on a current basis. It is not possible to determine what guidance they will ultimately issue, if any. It is possible, however, that under such guidance, holders of the notes will ultimately be required to accrue income currently and this could be applied on a retroactive basis. The IRS and the U.S. Treasury Department are also considering other relevant issues, including whether additional gain or loss from such instruments should be treated as ordinary or capital and whether the special "constructive ownership rules" of Section 1260 of the Code, which generally operate to recharacterize certain long-term capital gains as ordinary income and impose an interest charge, might be applied to such instruments. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations. Unless stated otherwise in the relevant pricing supplement, we intend to treat the notes for U.S. federal income tax purposes in accordance with the treatment described in this product supplement unless and until such time as the U.S. Treasury Department and IRS determine that some other treatment is more appropriate.

Backup Withholding and Information Reporting. Payments made with respect to the notes and proceeds from the sale or maturity of the notes may be subject to a backup withholding tax unless, in general, the holder complies with certain procedures or is an exempt recipient. Any amounts so withheld generally will be refunded by the IRS or allowed as a credit against the holder's U.S. federal income tax liability, provided the holder makes a timely filing of an appropriate tax return or refund claim to the IRS.

Reports will be made to the IRS and to holders that are not exempted from the reporting requirements.

Non-U.S. Holders. The following discussion applies to non-U.S. holders of the notes. A non-U.S. holder is a beneficial owner of a note that, for U.S. federal income tax purposes, is a non-resident alien individual, a foreign corporation, or a foreign estate or trust.

Except as discussed below, a non-U.S. holder will generally not be subject to U.S. federal income or withholding tax for amounts paid in respect of the notes, provided that (i) the holder complies with any applicable certification requirements, (ii) the payment is not effectively connected with the conduct by the holder of a U.S. trade or business, and (iii) if the holder is a non-resident alien individual, such holder is not present in the U.S. for 183 days or more during the taxable year of the sale or maturity of the notes. In the case of (ii) above, the holder generally would be subject to U.S. federal income tax with respect to any income or gain in the same manner as if the holder were a U.S. holder and, in the case of a holder that is a corporation, the holder may also be subject to a branch profits tax equal to 30% (or such lower rate provided by an applicable U.S. income tax treaty) of a portion of its earnings and profits for the taxable year that are effectively connected with its conduct of a trade or business in the U.S., subject to certain adjustments. Payments made to a non-U.S. holder may be subject to information reporting and to backup withholding unless the holder complies with applicable certification and identification requirements as to its foreign status.

A "dividend equivalent" payment is treated as a dividend from sources within the United States and such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-U.S. holder. Under U.S. Treasury Regulations, payments (including deemed payments) with respect to equity-linked instruments ("ELIs") that are "specified ELIs" may be treated as dividend equivalents if such specified ELIs reference an interest in an "underlying security," which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. However, IRS guidance provides that withholding on dividend equivalent payments will not apply to specified ELIs that are not delta-one instruments and that are issued before January 1, 2023. We do not expect to issue notes that are delta-one instruments. In that case, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if

any, under notes issued before January 1, 2023. However, it is possible that the notes could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the Reference Asset or the notes, and following such occurrence the notes could be treated as subject to withholding on dividend equivalent payments. Non-U.S. holders that enter, or have entered, into other transactions in respect of the Reference Asset or the notes should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the notes and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable paying agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

As discussed above, alternative characterizations of the notes for U.S. federal income tax purposes are possible. Should an alternative characterization, by reason of change or clarification of the law, by regulation or otherwise, cause payments as to the notes to become subject to withholding tax, we will withhold tax at the applicable statutory rate. The IRS has also indicated that it is considering whether income in respect of instruments such as the notes should be subject to withholding tax. We will not be required to pay any additional amounts in respect of such withholding. Prospective investors should consult their own tax advisors in this regard.

SUPPLEMENTAL PLAN OF DISTRIBUTION

With respect to each note to be issued, unless otherwise set forth in the applicable pricing supplement, National Bank of Canada will agree to sell to the applicable Dealer, and the applicable Dealer will agree to purchase from National Bank of Canada, the principal amount of the note specified, at the price specified, in the relevant pricing supplement. The applicable Dealer intends to resell each note it purchases at the original issue price specified in the relevant pricing supplement.

In the future, National Bank of Canada Financial Inc. or one of our other affiliates may repurchase and resell the notes in market-making transactions, with resales being made at prices related to prevailing market prices at the time of resale or at negotiated prices. For more information about the plan of distribution, the distribution agreement and possible market-making activities, see “Plan of Distribution and Conflicts of Interest” in the accompanying offering circular.



NATIONAL BANK OF CANADA

(as Issuer)

NATIONAL BANK OF CANADA, NEW YORK BRANCH

(as Guarantor)

Up to U.S.\$3,500,000,000 Structured Notes

National Bank of Canada, a Canadian chartered bank (“we,” “us” or the “Bank”), may from time to time offer up to U.S.\$3,500,000,000 in aggregate principal amount of notes (the “Notes”) in one or more series under the U.S.\$3,500,000,000 Structured Note Program (the “Program”). National Bank of Canada, New York Branch (the “Guarantor”) has agreed to unconditionally and irrevocably guarantee payments of interest and principal under the Notes (the “Guarantee”), which constitutes the direct, unsecured and unsubordinated obligations of the Guarantor. The Bank is licensed by the Superintendent under the New York Banking Law to maintain a branch office in New York State.

The aggregate principal amount of Notes outstanding under the Program at any time will not exceed U.S. \$3,500,000,000 (or its equivalent in other currencies).

This Offering Circular is being used in connection with the offering of the Notes.

The terms of each series of Notes (each, a “Series”) will be set out in a pricing supplement (each, a “Pricing Supplement”) to this Offering Circular. Such terms will include: (i) the aggregate principal amount of the offering, and the price at which the Notes will be offered; (ii) the amount payable on the Notes at their maturity date (the “Redemption Amount”); (iii) the interest or coupon (if any) payable on the Notes; and (iv) the maturity date of the Notes. The Notes may also be offered using one or more “Product Supplements,” which set forth their general terms. We refer herein to a Pricing Supplement or a Product Supplement as a “Supplement.” In relation to any Series of Notes, this Offering Circular shall also be read and construed together with the applicable Supplement.

An investment in the Notes involves certain risks. See “Risk Factors” commencing on page 6 for a discussion of certain risk factors to be considered in connection with an investment in the Notes. Payments on the Notes are subject to the credit risk of the Bank and the Guarantor.

National Bank of Canada Financial Inc. (“NBCFI”), which is an affiliate of the Bank, may be an Agent for an offering of the Notes. See “Plan of Distribution and Conflicts of Interest” for further information.

The Notes and the related Guarantee under the Program will not, and are not required to, be registered with the Securities and Exchange Commission (the “SEC”) under the U.S. Securities Act of 1933, as amended (the “Securities Act”). The Notes will not be approved or disapproved by the SEC or any state securities commission, nor has the SEC or any state securities commission passed upon the accuracy or adequacy of this Offering Circular. Any representation to the contrary is a criminal offense.

The Notes under the Program will be offered and sold pursuant to an exemption from registration under the Securities Act provided by Section 3(a)(2) thereof. See “Description of the Notes” for a description of the manner in which Notes will be issued. The Notes are subject to certain restrictions on transfer; see “Notice to Investors” and “Plan of Distribution and Conflicts of Interest.”

The Notes under the Program will constitute legal, valid and binding direct, unconditional, unsubordinated and unsecured obligations of the Bank and will rank equally with all deposit liabilities of the Bank without any preference among themselves (save for any applicable statutory provisions) and equally with all other present and future unsecured and unsubordinated obligations of the Bank, from time to time outstanding except for certain governmental claims. Notes that are Bail-inable Notes (as defined herein) are subject to the Canadian bank resolution powers as discussed under “Description of the Notes—Canadian Bank Resolution Powers” in this Offering Circular. The Guarantee will constitute the direct, general, unconditional, unsecured and unsubordinated obligation of the Guarantor and will rank equally with all other present and future direct, general, unconditional, unsecured and unsubordinated obligations of the Guarantor, except those mandatorily preferred by law.

The Notes under the Program are not bank deposits insured or guaranteed by the U.S. Federal Deposit Insurance Corporation, or any other governmental agency or authority in the United States. While the Notes will constitute deposits for purposes of the Bank Act (Canada) (the “Bank Act”), they are not insured or guaranteed by any governmental agency or authority in Canada or any other jurisdiction, or under the Canada Deposit Insurance Corporation Act (Canada) (the “CDIC Act”). The Notes and the Guarantee are not otherwise guaranteed by any person.

Notes that are Bail-inable Notes are subject to conversion in whole or in part – by means of a transaction or series of transactions and in one or more steps – into common shares of the Bank or any of its affiliates under subsection 39.2(2.3) of the CDIC Act and to variation or extinguishment in consequence, and subject to the application of the laws of Canada or of a province thereof in respect of the operation of the CDIC Act.

Agents

National Bank of Canada Financial Inc.

As well as any other Agents the Bank may appoint from time to time, as specified in the applicable Supplement.

The date of this Offering Circular is June 9, 2020.

NOTICE TO INVESTORS

The Notes have not been, and are not required to be, registered with the SEC under the Securities Act. The Notes will be offered pursuant to the exemption from registration provided by Section 3(a)(2) of the Securities Act and will be represented by one or more global notes (the “Global Notes”).

The Notes have not been and will not be approved or disapproved by the SEC or any other securities commission or other regulatory authority in the United States, nor have the foregoing authorities approved this Offering Circular or confirmed the accuracy or determined the adequacy of the information contained in this Offering Circular. Any representation to the contrary is unlawful.

This Offering Circular is being provided on a confidential basis in connection with the consideration of the purchase of the Notes being offered hereby from time to time. Its use for any other purpose in the United States is not authorized. It may not be copied or reproduced in whole or in part nor may it be distributed or any of its contents disclosed to anyone other than the prospective investors to whom it is originally submitted.

“Offering Circular” means this document along with all documents incorporated by reference herein.

Any recipient of (i) this Offering Circular and/or any information incorporated by reference herein (ii) any financial statements and/or any information incorporated by reference therein, or (iii) any other information provided in connection with the Notes, should not consider the receipt of such materials as an invitation to purchase or a recommendation by us, the Guarantor, any Agent or the Trustee (each as defined herein) to subscribe for or purchase any Note. You should determine for yourself the relevance of the information contained or incorporated by reference in this Offering Circular, should make your own independent investigation of the condition (financial or otherwise) and affairs, and your own appraisal of the creditworthiness, of the Bank and the Guarantor and should consult your own legal and financial advisers prior to subscribing for or purchasing any of the Notes. Your purchase of Notes should be based upon such investigation as you deem necessary. You cannot rely, and are not entitled to rely, on any Agent or the Trustee in connection with their investigation of the accuracy of any information or their decision whether to subscribe for, purchase or invest in the Notes. No Agent nor the Trustee undertakes any obligation to advise you of any information coming to the attention of any of the Agents or the Trustee, as the case may be.

The distribution of this Offering Circular and the offering, sale and delivery of the Notes in certain jurisdictions may be restricted by law. In particular, no action has been taken by the Bank or the Guarantor or any Agent which would permit a public offering of the Notes or distribution of this Offering Circular in any jurisdiction where action for that purpose is required. Accordingly, the Notes may not be offered or sold, directly or indirectly, and neither this Offering Circular nor any advertisement or other offering material may be distributed or published in any jurisdiction, except under circumstances that will result in compliance with all applicable laws and regulations and the Agents have represented that all offers and sales by them will be made on the same terms. Persons into whose possession this Offering Circular comes are required by the Bank, the Guarantor, the Trustee and the Agents to inform themselves about and to observe any such restrictions. For a description of certain restrictions on offers, sales and deliveries of Notes and on the distribution of this Offering Circular and other offering material relating to the Notes in Canada, the United States, the European Economic Area (the “EEA”) and the United Kingdom, Hong Kong, Japan and Singapore, see “*Plan of Distribution and Conflicts of Interest—Selling Restrictions*” below. This Offering Circular may not be used for the purpose of an offer or solicitation by anyone in any jurisdiction in which such offer or solicitation is not authorized or to any person to whom it is unlawful to make such an offer or solicitation.

This Offering Circular has been prepared on the basis that any offer of Notes in any member state of the EEA and the United Kingdom (each, a “Relevant State”) will be made pursuant to an exemption under the European Union’s Regulation (EU) 2017/1129 (the “Prospectus Regulation”), from the requirement to publish a prospectus for offers of Notes. Accordingly, any person making or intending to make an offer in that Relevant State of the Notes which are the subject of an offering contemplated in this Offering Circular as completed by the applicable Supplement in relation to the offer of those Notes may only do so in circumstances in which no obligation arises for the Bank or any Agent to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation, in each case, in relation to such offer. Any person making or intending to make an offer in a Relevant State of the Notes which are the subject of the offering contemplated by this Offering Circular and the applicable Supplement may only do so to one or more Qualified Investors (as defined in the Prospectus Regulation). None of the Bank, the Guarantor, the Trustee, or the Agents has authorized, nor do they authorize, the making of any offer or Notes in circumstances in which an obligation arises for the Bank or any Agent to publish or supplement a prospectus for such offer.

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 EEA or in the United Kingdom. For these purposes, the expression “offer” includes the communication in any form and by any means of sufficient information on the terms of the offer and the Notes to be offered so as to enable an investor to decide to purchase or subscribe the Notes, and 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 (EU) 2016/97, 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 Regulation (EU) 2017/1129 (the “Prospectus Regulation”). 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 or in the United Kingdom has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the EEA or in the United Kingdom may be unlawful under the PRIIPs Regulation.

By its acquisition of an interest in any Bail-inable Note (as defined herein), each holder or beneficial owner of that Note is deemed to (i) agree to be bound, in respect of the Bail-inable Notes, by the CDIC Act, including the conversion of the Bail-inable Notes, in whole or in part – by means of a transaction or series of transactions and in one or more steps – into common shares of the Bank or any of its affiliates under subsection 39.2(2.3) of the CDIC Act and the variation or extinguishment of the Bail-inable Notes in consequence, and by the application of the laws the Province of Québec and the federal laws of Canada applicable therein in respect of the operation of the CDIC Act with respect to the Bail-inable Notes; (ii) attorn and submit to the jurisdiction of the courts in the Province of Québec with respect to the CDIC Act and those laws; (iii) acknowledge and agree that the terms referred to in clauses (i) and (ii) above, are binding on that holder or beneficial owner despite any provisions in the Indenture (as defined herein) or the Bail-inable Notes, any other law that governs the Bail-inable Notes and any other agreement, arrangement or understanding between that holder or beneficial owner and the Bank with respect to the Bail-inable Notes; and (iv) have represented and warranted to the Bank that the Bank has not directly or indirectly provided financing to it for the express purpose of investing in Bail-inable Notes.

All references in this Offering Circular to “U.S.\$,” “U.S. dollars,” “USD” or “United States dollars” are to the currency of the United States of America, and all references to “\$,” “C\$,” “CAD” or “Canadian dollars” are to the currency of Canada. In the documents incorporated by reference in this Offering Circular, unless otherwise specified herein or the context otherwise requires, references to “\$” are to Canadian dollars.

All references in this Offering Circular to the “European Economic Area” or “EEA” are to the Member States of the European Union together with Iceland, Norway and Liechtenstein.

References to Regulations or Directives include, in relation to the United Kingdom, those Regulations or Directives as they form part of United Kingdom domestic law by virtue of the European Union (Withdrawal) Act 2018 or have been implemented in United Kingdom domestic law, as appropriate.

If your investment authority is subject to legal restrictions you should consult your legal advisers to determine whether and to what extent the Notes constitute legal investments for you. See “*Risk Factors —Legal investment considerations may restrict certain investments.*”

FORWARD-LOOKING STATEMENTS

From time to time, the Bank makes written and oral forward-looking statements, such as those contained in the “Economic Review and Outlook” section of its Annual Report for the year ended October 31, 2019 (the “2019 Annual Report”), in other filings with Canadian securities regulators, and in other communications, for the purpose of describing the economic environment in which the Bank will operate during fiscal 2020 and the objectives it hopes to achieve for that period. These forward-looking statements are made in accordance with current securities legislation in Canada and the United States. They include, among others, statements with respect to the economy—particularly the Canadian and U.S. economies—market changes, observations regarding the Bank’s objectives and its strategies for achieving them, Bank-projected financial returns and certain risks faced by the Bank. These forward-looking statements are typically identified by future or conditional verbs or words such as “outlook,” “believe,” “anticipate,” “estimate,” “project,” “expect,” “intend,” “plan,” and similar terms and expressions.

By their very nature, such forward-looking statements require assumptions to be made and involve inherent risks and uncertainties, both general and specific. Assumptions about the performance of the Canadian and U.S. economies in 2020 and how that will affect the Bank’s business are among the main factors considered in setting the Bank’s strategic priorities and objectives and in determining its financial targets, including provisions for credit losses. In determining its expectations for economic growth, both broadly and in the financial services sector in particular, the Bank’s primarily considers historical economic data provided by the Canadian and U.S. governments and their agencies.

There is a strong possibility that express or implied projections contained in these forward-looking statements will not materialize or will not be accurate. The Bank recommends that readers not place undue reliance on these statements, as a number of factors, many of which are beyond the Bank’s control, could cause actual future results, conditions, actions or events to differ significantly from the targets, expectations, estimates or intentions expressed in the forward-looking statements. These factors include credit risk, market risk, liquidity and funding risk, operational risk, regulatory compliance risk, reputation risk, strategic risk and environmental risk, all of which are described in more detail in the Risk Management section beginning on page 58 of the 2019 Annual Report and in the Risk Management section beginning on page 28 of the Bank’s Quarterly Report for the six-month period ended April 30, 2020 (the “2020 Second Quarterly Report”), and more specifically, general economic environment and financial market conditions in Canada, the United States and certain other countries in which the Bank conducts business, including regulatory changes affecting the Bank’s business; changes in the accounting policies the Bank uses to report its financial condition, including uncertainties associated with assumptions and critical accounting estimates; tax laws in the countries in which the Bank operates, primarily Canada and the United States (including the U.S. Foreign Account Tax Compliance Act (“FATCA”)); changes to capital and liquidity guidelines and to the manner in which they are to be presented and interpreted; changes to the credit ratings assigned to the Bank; potential disruptions to the Bank’s information technology systems, including evolving cyber-attack risk; and possible impacts of catastrophic events affecting local and global economies, including public health emergencies and natural disasters.

The foregoing list of risk factors is not exhaustive. Additional information about these factors can be found in the Risk Management section of the 2019 Annual Report and the 2020 Second Quarterly Report, and under “Risk Factors”. Investors and others who rely on the Bank’s forward-looking statements should carefully consider the above factors as well as the uncertainties they represent and the risk they entail. Except as required by law, none of the Bank, the Guarantor, the Trustee, the Agents or any other person undertakes to update any forward-looking statements, whether written or oral, that may be made from time to time, by it or on its behalf.

The forward-looking information contained in this document is presented for the purpose of interpreting the information contained herein and may not be appropriate for other purposes.

TABLE OF CONTENTS

DOCUMENTS INCORPORATED BY REFERENCE	1
OVERVIEW OF THE PROGRAM	2
RISK FACTORS	6
NATIONAL BANK OF CANADA	25
NATIONAL BANK OF CANADA, NEW YORK BRANCH	26
USE OF PROCEEDS	30
DESCRIPTION OF THE NOTES.....	32
THE GUARANTEE	68
BOOK-ENTRY CLEARANCE SYSTEMS	69
TAXATION	72
ERISA AND CERTAIN OTHER U.S. BENEFIT PLAN CONSIDERATIONS	82
PLAN OF DISTRIBUTION AND CONFLICTS OF INTEREST	84
LIMITATIONS ON ENFORCEMENT OF U.S. LAWS AGAINST THE BANK, ITS MANAGEMENT AND OTHERS.....	89
INDEPENDENT AUDITOR AND PRESENTATION OF FINANCIAL RESULTS.....	89
LEGAL MATTERS	89

DOCUMENTS INCORPORATED BY REFERENCE

We incorporate by reference into this Offering Circular (i) the documents listed below which have previously been published by the Bank and filed with the Canadian securities regulatory authorities, (ii) any existing and future update to any of the documents listed below, (iii) all of the Bank's Annual Information Forms, Annual Reports and quarterly Reports to Shareholders that the Bank will publish and file with the Canadian securities regulatory authorities in the future, (iv) all of the Bank's non-confidential material change reports that the Bank will publish and file with the Canadian securities regulatory authorities in the future and (v) any other documents published by the Bank or the Guarantor that specifically state that they are being incorporated by reference into this Offering Circular:

- (a) The Bank's Annual Information Form dated December 3, 2019, excluding all information incorporated therein by reference (such information is not relevant for prospective investors or is covered elsewhere in this Offering Circular) (the "**2019 Annual Information Form**"), including the following sections:
 - (i) information about the corporate structure and general development of the business on pages 4 to 6 of the 2019 Annual Information Form;
 - (ii) information concerning the directors and executive officers on pages 14 to 15 of the 2019 Annual Information Form; and
 - (iii) a discussion of the guidelines for the management of services provided by the independent auditor and information on fees for the independent auditor's services on page 19 of the 2019 Annual Information Form;
- (b) the following sections of the Bank's Annual Report for the year ended October 31, 2019 (the "**2019 Annual Report**"):
 - (i) Management's Discussion and Analysis of the Bank for the fiscal year ended October 31, 2019 on pages 13 to 110 of the 2019 Annual Report;
 - (ii) a description of the Bank's capital stock on pages 180 to 182 of the 2019 Annual Report;
 - (iii) information concerning the shares outstanding and the dividends declared on page 181 and 182 of the 2019 Annual Report; and
 - (iv) information concerning principal subsidiaries of the Bank on page 203 of the 2019 Annual Report;
- (c) pages 111 through 211 of the Bank's 2019 Annual Report, comprising the Bank's audited consolidated financial statements for the years ended October 31, 2019 and 2018, together with the notes thereto and the independent auditor's report thereon dated December 3, 2019 included therein;
- (d) the following sections of the 2020 Second Quarterly Report:
 - (i) Management's Discussion and Analysis of the Bank for the six-month period ended April 30, 2020 on pages 3 to 44 of the 2020 Second Quarterly Report; and
 - (ii) information concerning the Bank's share capital, the shares outstanding and the dividends on page 77 of the 2020 Second Quarterly Report.
- (e) pages 45 through 83 of the 2020 Second Quarterly Report, comprising the Bank's unaudited interim condensed consolidated financial statements for the six-month period ended April 30, 2020, together with the notes thereto;

The documents listed above are available electronically on SEDAR (www.sedar.com) under National Bank of Canada.

OVERVIEW OF THE PROGRAM

The following is only a summary of the Program and is qualified in its entirety by the section entitled "Description of the Notes."

Issuer:	National Bank of Canada (the " Bank ," " we " or " us ").
Guarantor:	National Bank of Canada, New York Branch.
Trustee and Paying Agent and Registrar:	The Bank of New York Mellon.
Calculation Agent:	Unless otherwise specified in the applicable Supplement, the Bank or one of its affiliates will be the Calculation Agent for determining all amounts payable under the Notes, and making any other required determinations.
Program:	We may use this Offering Circular to issue from time to time Notes having an aggregate principal amount of up to U.S.\$3,500,000,000 (or its equivalent in other currencies). The terms of each series of Notes (each, a " Series "), including the final offer price and the amount of such Notes, will be determined by the Bank and the relevant Agents and will be set out in the relevant Supplement.
Agent:	NBCFI, as well as any other Agents the Bank may appoint from time to time, as specified in the applicable Supplement.
Issue Price:	Notes may be issued at par or at a discount from or premium over par, in each case as specified in the applicable Supplement.
Specified Currencies:	Notes may be denominated in any currency agreed between the Bank and the applicable Agent(s) and specified in the applicable Supplement, subject to compliance with all applicable legal and regulatory restrictions.
Maturity:	The maturity agreed between the Bank and the relevant Agent(s) and specified in the applicable Supplement, subject to such minimum or maximum maturities as may be allowed or required from time to time by the Bank's organizational documents and any relevant regulator (or equivalent body) or any laws or regulations applicable to the Bank or the Guarantor.
Interest:	Notes may bear interest at a fixed or floating rate, as specified in the applicable Supplement and may vary during the lifetime of the relevant Series. We may also issue Notes that do not bear interest.
Fixed Rate Notes:	" Fixed Rate Notes " will bear interest at a fixed rate which will be payable on such date or dates as may be agreed between the Bank and the relevant Agent(s) and on redemption and will be calculated on the basis of such Day Count Fraction as may be agreed between the Bank and the relevant Agent(s) (as set out in the applicable Supplement).
Floating Rate Notes:	" Floating Rate Notes " will bear interest at a rate determined: <ul style="list-style-type: none">(i) on the same basis as the floating rate that would have applied if the Issuer had entered into a schedule and confirmation and credit support annex, if applicable, for the relevant Series of Notes in the relevant Specified Currency entered into by the Bank and the holder of such Notes incorporating the International Swaps and Derivatives Association, Inc. ("ISDA") Definitions;

- (ii) on the basis of a reference rate appearing on the agreed screen page of a commercial quotation service;
- (iii) for SOFR Rate Notes (as defined below), on the basis of a base rate determined in accordance with the provisions described under “*Description of the Notes—Interest—Floating Rate Notes—SOFR Rate Notes;*” or
- (iv) on such other basis as may be agreed between the Bank and the relevant Agent(s),

plus a margin (the “**Margin**”), if any, as set out in the applicable Supplement. The Margin may be a positive or negative number, which will be agreed between the Bank and the relevant Agent(s) for each Series of Floating Rate Notes as set out in the applicable Supplement.

Other Notes:

We may issue other types of Notes, including Notes that pay interest at a fixed rate for one or more periods, and a floating rate for one or more periods. We may also issue Notes that have payments of principal and/or interest that depend upon the level of a reference asset, such as one or more indices, exchange traded funds, equity securities, commodities, futures contracts, exchange rates, or other assets, or a basket of any of the foregoing. We may issue Notes that provide that we may deliver to you certain securities in lieu of a cash payment. We may issue Notes that are redeemable at our option or at your option, or that are automatically redeemable upon the occurrence of certain events. In each case, the relevant terms will be set forth in the applicable Supplement.

Denomination:

As specified in the applicable Supplement.

Status of the Notes:

The Notes will constitute deposits for purposes of the Bank Act and will constitute legal, valid and binding direct, unconditional, unsubordinated and unsecured obligations of the Bank and will rank equally with all deposit liabilities of the Bank without any preference among themselves (save for any applicable statutory provisions) and equally with all other present and future unsecured and unsubordinated obligations of the Bank, from time to time outstanding except for certain governmental claims. Notes that are Bail-inable Notes (as defined herein) are subject to the Canadian bank resolution powers as discussed under “*Description of the Notes—Canadian Bank Resolution Powers*” in this Offering Circular.

Bail-inable Notes:

We will specify in the applicable Pricing Supplement whether or not your Note is a Bail-inable Note. Notes that are Bail-inable Notes are subject to conversion in whole or in part by means of a transaction or series of transactions and in one or more steps into common shares of the Bank or any of its affiliates under subsection 39.2(2.3) of the CDIC Act and to variation or extinguishment in consequence, and by the application of the laws of the Province of Québec and the federal laws of Canada applicable therein in respect of the operation of the CDIC Act with respect to the Bail-inable Notes. See “*Description of the Notes—Special Provisions Related to Bail-inable Notes.*”

The Notes will not be deposits insured under either the *Canada Deposit Insurance Corporation Act (Canada)* or the *U.S. Federal Deposit Insurance Act.*

Guarantee:

The payments of interest and principal are (after giving effect to all the applicable cure periods) irrevocably and unconditionally guaranteed by the Guarantor pursuant to the Guarantee. The Guarantee, however, does not obligate the Guarantor or any other party to make a secondary market in the Notes or to make any payments with respect to any secondary market transactions. See “*The Guarantee.*”

Status of the Guarantee:	The Guarantee will constitute the direct, general, unconditional, unsecured and unsubordinated obligation of the Guarantor and will rank equally with all other present and future direct, general, unconditional, unsecured and unsubordinated obligations of the Guarantor, except those mandatorily preferred by law.
Form of the Notes:	<p>The Notes will be issued in registered global form as described in “<i>Description of the Notes.</i>”</p> <p>The Notes will be registered in the name of a nominee of The Depository Trust Company (“DTC”), and deposited on behalf of the purchaser (or such other account as the purchaser may direct) with The Bank of New York Mellon as custodian for DTC. Purchasers of Notes will have a book-entry beneficial interest in the Global Notes. The beneficial interest in the Global Notes will be held through the Direct Participants and Indirect Participants (as defined in “<i>Book-Entry Clearance Systems</i>”), including, if applicable, CDS Clearing and Depository Services Inc. (“CDS”), Euroclear Bank, S.A./N.V. (“Euroclear”) and Clearstream Banking, <i>société anonyme</i> (“Clearstream”). Notes in definitive form will only be issued in limited circumstances. See “<i>Description of the Notes.</i>”</p>
Listing:	Unless otherwise specified in the applicable Supplement, the Notes of any Series will not be listed on any securities exchange.
No Registration; Selling Restrictions:	<p>The Notes and the Guarantee will not, and are not required to, be registered with the SEC under the Securities Act. Accordingly, the Notes may not be offered, sold or otherwise transferred except pursuant to an exemption from the registration requirements of the Securities Act and any applicable state securities laws. The Notes will be offered and sold in reliance upon an exemption from registration provided by Section 3(a)(2) of the Securities Act. See “<i>Notice to Investors.</i>”</p> <p>The Notes are subject to additional selling and transfer restrictions described under “<i>Plan of Distribution and Conflicts of Interest.</i>”</p>
Taxation:	Payments in respect of the Notes will be made without withholding or deduction for, or on account of, any present or future taxes, duties, assessments or governmental charges of whatever nature imposed or levied, unless the withholding or deduction of such taxes, duties, assessments or governmental charges is required by law. In the event that any amounts are required to be deducted or withheld for, or on behalf of Canada or any province or territory thereof, the Bank will (save in certain circumstances) pay such additional amounts as will result in the holders of the Notes receiving such amounts as they would have received in respect of such Notes had no such withholding or deduction been required. See “ <i>Description of the Notes — Payments of Additional Amounts.</i> ” For a more detailed description on taxation see “ <i>Taxation.</i> ”
ERISA:	Subject to the limitations described under “ <i>ERISA and Certain Other U.S. Benefit Plan Considerations,</i> ” a Note may be purchased by Benefit Plan Investors (as defined in Section 3(42) of the U.S. Employee Retirement Income Security Act of 1974, as amended (“ ERISA ”)).
Governing Law and Jurisdiction:	The Notes and the Indenture will be governed by, and construed in accordance with, the laws of the State of New York. See “ <i>Description of the Notes,</i> ” except that, with respect to Bail-inable Notes, refer to “ <i>Description of the Notes—Special Provisions Related to Bail-inable Notes.</i> ”
Use of Proceeds:	Unless otherwise specified in the applicable Supplement, we intend to use the net proceeds we receive from the sale of the Notes for general corporate purposes. In

addition, we expect that we or our affiliates may use a portion of the net proceeds to hedge our obligations under the Notes. See *“Use of Proceeds.”*

Distribution:

The Bank may sell Notes issued pursuant to this Offering Circular (i) directly to one or more purchasers, (ii) through the Agents or (iii) through a combination of any of these methods of sale.

The applicable Supplement will explain the ways in which the Bank intends to sell a specific issue of Notes, including the names of any Agents and details of the pricing of the issue of Notes, as well as any commissions, concessions or discounts such Bank is granting the Agents.

Conflicts of Interest:

Agents we may use in connection with the offer and sale of any Series of Notes may include our affiliate, NBCFI. Any such offering will be conducted in compliance with the requirements of Rule 5121 (as amended from time to time) of the Financial Industry Regulatory Authority, Inc. (“**FINRA**”) regarding a FINRA member firm’s distribution of securities of an affiliate.

Risk Factors:

There are certain risks related to the Notes, which you should ensure you fully understand. A non-exhaustive summary of such risks is set out under *“Risk Factors”* beginning on page 6 of this Offering Circular.

RISK FACTORS

We believe that the following risk factors are material for the purpose of assessing risks associated with the Notes, the Bank and the Guarantor. All of these factors are contingencies which may or may not occur and we are not in a position to express a view on the likelihood of any such contingency occurring or the likelihood or extent to which any such contingencies may affect the ability of the Bank or the ability of the Guarantor to pay interest, principal or other amounts on or in connection with any Notes. In addition, factors, although not exhaustive, which could be material for the purpose of assessing the market risk associated with the Notes are described below. Furthermore, the applicable Supplement may describe additional risk factors that could affect your investment in or return on the Notes that you should also consider.

We believe that the factors described below represent certain risks inherent in investing in the Notes, but our inability or the inability of the Guarantor to pay interest, principal or other amounts on or in connection with any Notes or to perform any of its obligations may occur for other reasons, and neither we nor the Guarantor represents that the statements below regarding the risks of holding any Notes are exhaustive. The risks described below are not the only risks faced by us and the Guarantor. Additional risks and uncertainties, including those not presently known to us or the Guarantor or that we currently believe to be immaterial, could also have a material impact on our business and could adversely affect our ability or the ability of the Guarantor to pay interest, principal or other amounts on or in connection with any Notes or to perform any of our obligations. You should also read the detailed information set out elsewhere in this Offering Circular (including information incorporated by reference herein) or the applicable Supplement to reach your own views prior to making any investment decisions.

An investment in the Notes is subject to various risks including those risks inherent in conducting the business of a diversified financial institution. Before deciding whether to invest in any Notes, you should consider carefully the risks incorporated by reference in this Offering Circular (including subsequently filed documents incorporated by reference) and, if applicable, those described in a Supplement relating to a specific offering of Notes. You should consider the categories of risks identified and discussed in the Bank's 2019 Annual Information Form and Management's Discussion and Analysis of the Bank incorporated herein by reference and in particular under the heading "Risk Management" in the 2019 Annual Report and the 2020 Second Quarterly Report, as well as the risks discussed in any subsequent documents that are incorporated by reference herein.

Factors That Are Material for the Purpose of Assessing Risks Relating to the Bank and the Guarantor

Payments on the Notes are subject to the credit risk of the Bank and the Guarantor, and the value of the Notes will be affected by a credit rating reduction of the Bank or the Guarantor.

The amounts payable on the Notes are dependent upon the ability of the Bank or the Guarantor to repay its obligations on the applicable payment dates. No assurance can be given as to what the financial condition of the Bank or the Guarantor will be on the applicable payment dates. The value of the Notes is expected to be affected, in part, by investors' general appraisal of the creditworthiness of the Bank and the Guarantor, and actual or anticipated changes in the credit ratings of the Bank and the Guarantor prior to the due date. Such perceptions are generally influenced by the ratings accorded to the outstanding Notes of the Bank and the Guarantor by standard statistical rating services. A reduction (or anticipated reduction) in the rating, if any, accorded to outstanding debt securities of the Bank or the Guarantor by one of these rating agencies could result in a reduction in the trading value of the Notes. As the return on the Notes depends upon factors in addition to the ability of the Bank and the Guarantor to pay their respective obligations, an improvement in these credit ratings will not reduce the other investment risks related to the Notes. A credit rating is not a recommendation to buy, sell, or hold any of the Notes, and may be subject to suspension, change, or withdrawal at any time by the assigning rating agency.

The Guarantee provides limited economic benefits.

The purpose of the Guarantee is to permit the Notes to be offered and sold without registration in the United States in reliance on the exemption from registration provided by Section 3(a)(2) of the Securities Act. Should the Bank default on the Notes, creditors impacted by such default may assert claims against the Bank and/or the Guarantor. While the obligations of the Guarantor under the Guarantee are unconditional and are not limited in amount, the Guarantee provides limited economic benefit to investors as there is no obligation on the Guarantor to maintain assets in excess of the principal amount of the Notes and at any time the amount of the Guarantor's obligations under the Guarantee may far exceed the Guarantor's financial capacity to pay under the Guarantee.

In the event the New York branch of the Bank is closed and the Bank does not arrange for an appropriate substitute guarantor, you may be adversely affected.

In the event that the New York branch of the Bank is closed as a result of any events other than insolvency or any other events described in the definition of Events of Default below, either voluntarily by the Bank or involuntarily, the Bank is under no obligation to arrange for a substitute guarantor and such closure will not result in an event of default under the Notes. In such circumstances, you may find that the market for such Notes is less liquid than previously was the case and/or that the market price of such Notes is adversely affected either as a result thereof or because such Notes no longer benefit from the Guarantee or from the provisions of Section 606 of the New York Banking Law.

Supervisory action may adversely affect the return on the Notes.

The Superintendent or the Federal Reserve Board may, as the result of an examination or otherwise, cause the Guarantor to make changes in its business operations or financial position that could in turn affect the ability of the Guarantor to perform on the Guarantee.

In the event of an insolvency of the Bank, the assets of the Guarantor may be subject to separate insolvency proceedings in New York.

The Bank is licensed by the Superintendent under the New York Banking Law to maintain a branch office in New York State. In the event that the Bank becomes insolvent, the Superintendent may take possession of the Guarantor and all of the assets of the Bank that are located in New York under Section 606 of the New York Banking Law. Under such circumstances, an accepted claim under the Guarantee would be an unsecured liability of the Guarantor. Although the New York Banking Law provides that the assets of the Guarantor would, in the first instance, be marshaled to pay the accepted claims of creditors of the Guarantor, there can be no assurance that a Noteholder would receive full payment of its claim or that payment would not be delayed because of the Superintendent's actions. Furthermore, because of the contingent nature of such claims under Section 606 of the New York Banking Law, it is uncertain whether Noteholders would have a provable claim under the Guarantee with respect to payment of principal and interest in a receivership for the Guarantor to the extent that, at the time of the commencement of the proceedings the conditions to payment under the Guarantee had not occurred. See "Event of Default and Remedies; Waiver of Past Defaults—Event of Default and Remedies".

Factors That Are Material for the Purposes of Assessing the Risks Involved in an Investment in the Notes

Bail-inable Notes

The Notes will be subject to risks, including non-payment in full or, in the case of Bail-inable Notes, conversion in whole or in part – by means of a transaction or series of transactions and in one or more steps – into common shares of the Bank or any of its affiliates, under Canadian bank resolution powers.

Under Canadian bank resolution powers, the Canada Deposit Insurance Corporation ("CDIC") may, in circumstances where the Bank has ceased, or is about to cease, to be viable, assume temporary control or ownership of the Bank and may be granted broad powers by one or more orders of the Governor in Council (Canada), each of which we refer to as an "Order," including the power to sell or dispose of all or a part of the assets of the Bank, and the power to carry out or cause the Bank to carry out a transaction or a series of transactions the purpose of which is to restructure the business of the Bank. As part of the Canadian bank resolution powers, certain provisions of and regulations under the Bank Act, the CDIC Act and certain other Canadian federal statutes pertaining to banks, which we refer to collectively as the "Bail-in Regime," provide for a bank recapitalization regime for banks designated by the Superintendent of Financial Institutions (Canada) (the "Superintendent of Financial Institutions") as domestic systemically important banks, which include the Bank. We refer to those domestic systemically important banks as "D-SIBs." See "Description of the Notes—Canadian Bank Resolution Powers" for a description of the Canadian bank resolution powers, including the Bail-in Regime.

If the CDIC were to take action under the Canadian bank resolution powers with respect to the Bank, this could result in holders or beneficial owners of the Notes being exposed to losses and, in the case of Bail-inable Notes, conversion of the Notes in whole or in part – by means of a transaction or series of transactions and in one or more

steps – into common shares of the Bank or any of its affiliates, which we refer to as a “**Bail-in Conversion.**” Subject to certain exceptions discussed under “*Description of the Notes—Canadian Bank Resolution Powers*”, including for certain structured notes, senior debt issued on or after September 23, 2018, with an initial or amended term to maturity (including explicit or embedded options) greater than 400 days, that is unsecured or partially secured and that has been assigned a CUSIP or ISIN or similar identification number, is subject to Bail-in Conversion.

Upon a Bail-in Conversion, if your Bail-inable Notes or any portion thereof are converted into common shares of the Bank or any of its affiliates, you will be obligated to accept those common shares, even if you do not at the time consider the common shares to be an appropriate investment for you, and despite any change in the Bank or any of its affiliates, or the fact that the common shares may be issued by an affiliate of the Bank, or any disruption to or lack of a market for the common shares or disruption to capital markets generally.

As a result, you should consider the risk that you may lose all of your investment, including the principal amount plus any accrued interest, if the CDIC were to take action under the Canadian bank resolution powers, including the Bail-in Regime, and that any remaining outstanding Notes, or common shares of the Bank or any of its affiliates into which Bail-inable Notes are converted, may be of little value at the time of a Bail-in Conversion and thereafter.

The Indenture (as defined below) will provide only limited acceleration and enforcement rights for the Notes and includes other provisions intended to qualify Bail-inable Notes as TLAC of the Bank.

In connection with the Bail-in Regime, the Office of the Superintendent of Financial Institutions’ (“**OSFI**”) guideline (the “**TLAC Guideline**”) on Total Loss Absorbing Capacity (“**TLAC**”) applies to and establishes standards for D-SIBs, including the Bank. Under the TLAC Guideline, beginning November 1, 2021, the Bank is required to maintain a minimum capacity to absorb losses composed of unsecured external long-term debt that meets the prescribed criteria or regulatory capital instruments to support recapitalization in the event of a failure. Bail-inable Notes and regulatory capital instruments that meet certain prescribed criteria, which are discussed under “*Description of the Notes—Canadian Bank Resolution Powers*”, will constitute TLAC of the Bank.

In order to comply with the TLAC Guideline, the Indenture under which the Notes may be issued provides that, for any Notes of a series issued on or after the date of the First Supplemental Indenture (including Notes that are not subject to Bail-in Conversion), acceleration will only be permitted (i) if we default in the payment of the principal of, or interest on, any Note of that series and, in each case, the default continues for a period of 30 business days, or (ii) certain bankruptcy, insolvency or reorganization events occur.

Holders and beneficial owners of Bail-inable Notes may only exercise, or direct the exercise of, the rights described under “*Description of Debt Securities — Events of Default and Remedies; Waiver of Past Defaults — Events of Default and Remedies*” where an Order has not been made under Canadian bank resolution powers pursuant to subsection 39.13(1) of the CDIC Act in respect of the Bank. Notwithstanding the exercise of those rights, Bail-inable Notes will continue to be subject to Bail-in Conversion until repaid in full.

The Indenture also provides that holders or beneficial owners of Bail-inable Notes will not be entitled to exercise, or direct the exercise of, any set-off or netting rights with respect to Bail-inable Notes. In addition, where an amendment, modification or other variance that can be made to the Indenture or the Bail-inable Notes would affect the recognition of those Bail-inable Notes by the Superintendent of Financial Institutions as TLAC, that amendment, modification or variance will require the prior approval of the Superintendent of Financial Institutions.

The circumstances surrounding a Bail-in Conversion are unpredictable and can be expected to have an adverse effect on the market price of Bail-inable Notes.

The decision as to whether the Bank has ceased, or is about to cease, to be viable is a subjective determination by the Superintendent of Financial Institutions that is outside the control of the Bank. Upon a Bail-in Conversion, the interests of depositors and holders of liabilities and securities of the Bank that are not converted will effectively all rank in priority to the portion of Bail-inable Notes that are converted. In addition, except as provided for under the compensation process, the rights of holders in respect of the Bail-inable Notes that have been converted will rank on parity with other holders of common shares of the Bank (or, as applicable, common shares of the affiliate whose common shares are issued on the Bail-in Conversion).

There is no limitation on the type of Order that may be made where it has been determined that the Bank has ceased, or is about to cease, to be viable. As a result, you may be exposed to losses through the use of Canadian bank resolution powers other than Bail-in Conversion or in liquidation. See *“The Notes will be subject to risks, including non-payment in full or, in the case of Bail-inable Notes, conversion in whole or in part – by means of a transaction or series of transactions and in one or more steps – into common shares of the Bank or any of its affiliates, under Canadian bank resolution powers.”* above.

Because of the uncertainty regarding when and whether an Order will be made and the type of Order that may be made, it will be difficult to predict when, if at all, Bail-inable Notes could be converted into common shares of the Bank or any of its affiliates, and there is not likely to be any advance notice of an Order. As a result of this uncertainty, trading behavior in respect of the Bail-inable Notes may not follow trading behavior associated with convertible or exchangeable securities or, in circumstances where the Bank is trending towards ceasing to be viable, other senior debt. Any indication, whether real or perceived, that the Bank is trending towards ceasing to be viable can be expected to have an adverse effect on the market price of the Bail-inable Notes, whether or not the Bank has ceased, or is about to cease, to be viable. Therefore, in those circumstances, you may not be able to sell your Bail-inable Notes easily or at prices comparable to those of senior debt securities not subject to Bail-in Conversion.

The number of common shares to be issued in connection with, and the number of common shares that will be outstanding following, a Bail-in Conversion are unknown. It is also unknown whether the shares to be issued will be those of the Bank or one of its affiliates.

Under the Bail-in Regime there is no fixed and pre-determined contractual conversion ratio for the conversion of the Bail-inable Notes, or other shares or liabilities of the Bank that are subject to a Bail-in Conversion, into common shares of the Bank or any of its affiliates, nor are there specific requirements regarding whether liabilities subject to a Bail-in Conversion are converted into common shares of the Bank or any of its affiliates. CDIC determines the timing of the Bail-in Conversion, the portion of bail-inable shares and liabilities to be converted and the terms and conditions of the conversion, subject to parameters set out in the Bail-in Regime, which are discussed under *“Description of the Notes—Canadian Bank Resolution Powers.”*

As a result, it is not possible to anticipate the potential number of common shares of the Bank or its affiliates that would be issued in respect of any Bail-inable Note converted in a Bail-in Conversion, the aggregate number of such common shares that will be outstanding following the Bail-in Conversion, the effect of dilution on the common shares received from other issuances under or in connection with an Order or related actions in respect of the Bank or its affiliates or the value of any common shares you may receive for your converted Bail-inable Notes, which could be significantly less than the principal amount of those Bail-inable Notes. It is also not possible to anticipate whether shares of the Bank or shares of its affiliates would be issued in a Bail-in Conversion. There may be an illiquid market, or no market at all, in the common shares issued upon a Bail-in Conversion and you may not be able to sell those common shares at a price equal to the value of your converted Bail-inable Notes and as a result may suffer significant losses that may not be offset by compensation, if any, received as part of the compensation process. Fluctuations in exchange rates may exacerbate those losses.

By acquiring Bail-inable Notes, you are deemed to agree to be bound by a Bail-in Conversion and so will have no further rights in respect of your Bail-inable Notes to the extent those Bail-inable Notes are converted in a Bail-in Conversion other than those provided under the Bail-in Regime. Any potential compensation to be provided through the compensation process under the CDIC Act is unknown.

The CDIC Act provides for a compensation process for holders of Bail-inable Notes who immediately prior to the making of an Order, directly or through an intermediary, own Bail-inable Notes that are converted in a Bail-in Conversion. Given the considerations involved in determining the amount of compensation, if any, that a holder that held Bail-inable Notes may be entitled to following an Order, it is not possible to anticipate what, if any, compensation would be payable in such circumstances. By acquiring an interest in any Bail-inable Note, you are deemed to agree to be bound by a Bail-in Conversion and so will have no further rights in respect of your Bail-inable Notes to the extent those Bail-inable Notes are converted in a Bail-in Conversion other than those provided under the Bail-in Regime. See *“Description of the Notes—Canadian Bank Resolution Powers”* herein for a description of the compensation process under the CDIC Act.

Following a Bail-in Conversion, holders or beneficial owners that held Bail-inable Notes that have been converted will no longer have rights against the Bank as creditors.

Upon a Bail-in Conversion, the rights, terms and conditions of the portion of Bail-inable Notes that are converted, including with respect to priority and rights on liquidation, will no longer apply as the portion of converted Bail-inable Notes will have been converted on a full and permanent basis into common shares of the Bank or any of its affiliates ranking on parity with all other outstanding common shares of that entity. If a Bail-in Conversion occurs, then the interest of the depositors, other creditors and holders of liabilities of the Bank not bailed in as a result of the Bail-in Conversion will all rank in priority to those common shares.

Given the nature of the Bail-in Conversion, holders or beneficial owners of Bail-inable Notes that are converted will become holders or beneficial owners of common shares at a time when the Bank's and potentially its affiliates' financial condition has deteriorated. They may also become holders or beneficial owners of common shares at a time when the relevant entity may have received or may receive a capital injection or equivalent support with terms that may rank in priority to the common shares issued in a Bail-in Conversion with respect to payment of dividends, rights on liquidation or other terms although there is no certainty that any such capital injection or support will be forthcoming.

The Bank may redeem Bail-inable Notes after the occurrence of a TLAC Disqualification Event.

If a TLAC Disqualification Event (as defined herein) is specified in the applicable Pricing Supplement, we may, at our option, with the prior approval of the Superintendent of Financial Institutions, redeem all but not less than all of the particular Bail-inable Notes prior to their stated maturity date after the occurrence of the TLAC Disqualification Event, at the time or times and at the redemption price or prices specified in that Pricing Supplement, together with unpaid interest accrued thereon to, but excluding, the date fixed for redemption. If the Bank redeems Bail-inable Notes, you may not be able to reinvest the redemption proceeds in securities offering a comparable anticipated rate of return. Additionally, although the terms of Bail-inable Notes are anticipated to be established to satisfy the TLAC criteria within the meaning of the TLAC Guideline to which the Bank is subject, it is possible that any Bail-inable Notes may not satisfy the criteria in future rulemakings or interpretations.

Sustainable Notes

Notes issued as "green notes," "social notes" or "sustainable notes" may not be a suitable investment for all investors seeking exposure to green, social or sustainable assets.

As specified in the applicable Pricing Supplement, the Bank may issue Notes under the Program where the use of proceeds is specified in the applicable Pricing Supplement to be for the financing and/or refinancing, in whole or in part, of future or existing eligible businesses and eligible projects, including the Bank's own operations, that fall within the Eligible Categories (as defined below), in accordance with the Bank's Sustainability Bond Framework dated September 26, 2018 (as may amended from time to time), available on the following webpage: <https://www.nbc.ca/content/dam/bnc/a-propos-de-nous/relations-investisseurs/fonds-propres-et-dette/nbc-sustainability-bond-framework.pdf> (the "**Framework**"). See further under "Use of Proceeds–Sustainability Bond Framework." We refer to any such Notes, which may be "green notes," "social notes" or "sustainable notes," as the "**Sustainable Notes.**"

The Bank will exercise its judgement and sole discretion in determining the businesses and projects that will be financed by the proceeds of the Sustainable Notes. If the use of the proceeds of the Sustainable Notes is a factor in your decision to invest in the Sustainable Notes, you should consider the disclosure in "Use of Proceeds" set out in the Offering Circular and in the applicable Pricing Supplement, together with the terms and conditions of the Framework, and consult with your legal or other advisers before making an investment in Sustainable Notes (including with respect to whether you require a current second party opinion on the Framework). Any failure by the Bank to apply the net proceeds of the notes in accordance with the Framework, any withdrawal, termination or expiration of any report, assessment, opinion or certification as described above, or any such report, assessment, opinion or certification attesting that the Bank is not complying in whole or in part with any matters with respect to such report, assessment, opinion or certification is reporting, assessing, opining or certifying, may have a material adverse effect on the value of the notes and/or result in adverse consequences to you, including if you have a portfolio mandate to invest in securities to be used for a particular purpose. While it is the intention of the Bank to meet the Framework,

no assurance is given that any of the businesses and projects funded with the proceeds from Sustainable Notes will meet the Framework or an investor's expectations or requirements, whether as to sustainable impact or outcome or otherwise.

Furthermore, while the intention of the Bank is to apply the net proceeds of the relevant Sustainable Notes as described in "Use of Proceeds" set out in the applicable Pricing Supplement, there is no contractual obligation to allocate the proceeds of such Sustainable Notes to finance eligible businesses and projects or to provide annual progress reports as described in the Framework.

The Bank's failure to so allocate or report, the failure of any of the businesses and projects funded with the proceeds from Sustainable Notes to meet the Framework or the failure of external assurance providers to opine on the conformity of the Sustainability Bond Report (as defined below) with the Framework will not constitute an Event of Default with respect to the relevant Sustainable Notes or give rise to any other claim of a holder of such Sustainable Notes against the Bank. Any such failure may affect the value of the relevant Sustainable Notes and/or have adverse consequences for certain investors with portfolio mandates to invest in sustainable, social or green assets or for a particular purpose.

Furthermore, it should be noted that there is currently no clear definition (legal, regulatory or otherwise) of, nor market consensus as to what constitutes, a "green", "sustainable", "social" or an equivalently labelled project or business, nor as to what precise attributes are required for a particular project or business to be defined as "green", "sustainable", "social" or such other equivalent label nor can any assurance be given that such a clear definition or consensus will develop over time. Accordingly, while it is the intention of the Bank, no assurance is or can be given by the Bank, the Arrangers or the Agents to investors that any projects or uses the subject of, or related to, any of the businesses and projects funded with the proceeds from the Notes will meet any or all investor expectations regarding such "green", "sustainable", "social" or other equivalently-labelled performance objectives or that any adverse environmental, social and/or other impacts will not occur during the implementation of any projects or uses the subject of, or related to, any of the businesses and projects funded with the proceeds from the Notes.

None of the Bank, the Guarantor, the Arrangers or the Agents makes any representation as to the suitability of the Sustainable Notes to fulfil any green, environmental, sustainable, social or other criteria required by prospective investors, or as to the suitability or reliability for any purpose whatsoever of any report, assessment, opinion or certification of any third party (whether or not solicited by the Bank) which may be made available in connection with the issue of Sustainable Notes and in particular with any of the businesses and projects funded with the proceeds from Sustainable Notes to fulfil any environmental, sustainability, social and/or other criteria. For the avoidance of doubt, none of the Framework, the second party opinion or any other report, assessment, opinion or certification of any third party (whether or not solicited by the Bank) is, nor shall they be deemed to be, incorporated in and/or form part of the Offering Circular nor the applicable Pricing Supplement. Any such report, assessment, opinion or certification is not, nor should be deemed to be, a recommendation by the Bank, the Arrangers, the Agents or any other person to buy, sell or hold Sustainable Notes. The second party opinion and any such other report, assessment, opinion or certification of any third party (whether or not solicited by the Bank) is only current as at the date that it was initially issued. Investors must determine for themselves the relevance of any such report, assessment, opinion or certification and/or the information contained therein and/or the provider of such opinion or certification for the purpose of any investment in Sustainable Notes. The providers of such reports, assessments, opinions and certifications are not currently subject to any specific regulatory or other regime or oversight. None of the Arrangers or the Agents have undertaken, nor are they responsible for, any assessment of the Framework or the eligibility criteria for the Sustainable Notes, any verification of whether any of the businesses or projects fall within the Eligible Categories, or the monitoring of the use of proceeds of the Sustainable Notes. Investors should refer to the Framework and the Sustainability Bond Report (details of which are set out under "Use of Proceeds" in this Offering Circular), together with the second party opinion, available at: [https://www.nbc.ca/content/dam/bnc/a-proposde-nous/relations-investisseurs/fonds-propres-et-dette/nbc-sustainability-bond-second-opinion.pdf](https://www.nbc.ca/content/dam/bnc/a-proposde-nous/rerelations-investisseurs/fonds-propres-et-dette/nbc-sustainability-bond-second-opinion.pdf), for information. Neither the second party opinion nor the contents of such website are incorporated by reference into this Offering Circular.

While it is the intention of the Bank to apply the net proceeds of any Sustainable Notes and obtain and publish the relevant reports, assessments, opinions and certifications in, or substantially in, the manner described in "Use of Proceeds" set out in this Offering Circular or in the applicable Pricing Supplement, there can be no assurance that the Bank will be able to do this nor can there be any assurance that any eligible project (where applicable) will be

completed within any specified period or at all or with the results or outcome (whether or not related to the environment) as originally expected or anticipated by the Bank.

Any failure by the Bank to apply the net proceeds of any issued of Sustainable Notes in accordance with the Framework, any withdrawal of any report, assessment, opinion or certification as described above, or any such report, assessment, opinion or certification attesting that the Bank is not complying in whole or in part with any matters for which such report, assessment, opinion or certification is reporting, assessing, opining or certifying on, may have a material adverse effect on the value of such Sustainable Notes and/or result in adverse consequences for certain investors with portfolio mandates to invest in securities to be used for a particular purpose.

Obligations under the Notes and the Guarantee

The Notes and the Guarantee will not represent obligations or be the responsibilities of any of the Agents, the Trustee, or any other person involved in or associated with the Notes, or their officers, directors, employees, security holders or incorporators, other than the Bank and the Guarantor, as applicable. Each of the Bank and the Guarantor will be liable solely in its corporate capacity for their respective obligations in respect of the Notes and the Guarantee, as applicable, and such obligations will not be the obligations of any of their respective officers, directors, employees, security holders or incorporators, as the case may be.

The Bank is liable to make payments when due on the Notes.

The Bank is liable to make payments when due on the Notes. The Notes constitute deposit liabilities of the Bank for purposes of the Bank Act, but will not be insured under the *Canada Deposit Insurance Corporation Act* (Canada), and will constitute legal, valid and binding direct, unconditional, unsubordinated and unsecured obligations of the Bank and rank equally with all deposit liabilities of the Bank without any preference among themselves and equally with all other unsubordinated and unsecured obligations of the Bank, present and future (except as otherwise prescribed by law). Notes that are Bail-inable Notes are subject to the Canadian bank resolution powers as discussed under “*Description of the Notes—Canadian Bank Resolution Powers*”. Except to the extent regulatory requirements affect the Bank’s decision to issue more senior debt, there is no limit on the Bank’s ability to incur additional senior debt.

Neither the Notes nor the Guarantee are insured by the FDIC, the CDIC or any other governmental insurance program.

Neither the Notes nor the Guarantee are deposit liabilities of the Bank or the Guarantor, respectively, and neither the Notes nor the Guarantee or your investment in the Notes are insured by the United States Federal Deposit Insurance Corporation (“**FDIC**”), the CDIC or any U.S. or Canadian governmental or deposit insurance agency.

Investors Are Subject to Our Credit Risk, and Our Credit Ratings and Credit Spreads May Adversely Affect the Market Value of the Notes.

Investors are dependent on the Bank’s ability to pay all amounts due on the Notes on the interest payment dates and at maturity, and, therefore, investors are subject to the credit risk of the Bank and to changes in the market’s view of the Bank’s creditworthiness. Any decrease in the Bank’s credit ratings or increase in the credit spreads charged by the market for taking the Bank’s credit risk is likely to adversely affect the market value of the Notes.

The Trustee and the Indenture

The Trustee’s powers may affect the interests of the holders of the Notes.

In the exercise of its powers, trusts, authorities and discretions, the Trustee will only have regard to the interests of the holders of the Notes. In the exercise of its powers, trusts, authorities and discretions, the Trustee may not act on behalf of the Bank or the Guarantor.

If, in connection with the exercise of its powers, trusts, authorities or discretions, the Trustee is of the opinion that the interests of the holders of the Notes would be unduly prejudiced thereby, the Trustee will not exercise such power, trust, authority or discretion without the approval by the holders of at least a majority of the principal amount of the Notes then outstanding.

If the Bank determines that the performance of its obligations under the Notes has or will become illegal in whole or in part for any reason, the Bank may redeem or cancel the Notes, as applicable, subject to the discussion below under “Description of the Notes—Redemption and Repurchase—Approval of Redemption, Repurchases and Defeasance; Amendments and Modifications” with respect to Bail-inable Notes.

If, in the case of illegality and to the extent permitted by applicable law, the Bank redeems or cancels the Notes, then the Bank will redeem each Note at the principal amount together (if applicable) with interest accrued to (but excluding) the date of redemption, which may be less than the Issue Price of the Notes and may in certain circumstances be zero.

The Trustee may agree to modifications to the Indenture without the holders of the Notes’ prior consent.

The Indenture contains provisions for calling meetings of the holders of the Notes to consider matters affecting their interests generally. These provisions permit defined majorities to bind all holders of the Notes, including holders of Notes who do not attend and vote at the relevant meeting and holders of the Notes who voted in a manner contrary to the majority.

Pursuant to the terms of the Indenture, the Trustee may also, without the consent or sanction of any of the holders of the Notes, enter into one or more supplemental indentures to, among other things:

- cure ambiguities or corrections to defective or inconsistent provisions in the Indenture; or
- make any other amendments to the Indenture or the Notes that the Bank deems necessary or desirable, as long as such amendments do not adversely affect the rights or interests of the holders of the Notes.

Risks Applicable to Certain Series of Notes

The Notes may be subject to optional redemption by the Bank.

If specified in the applicable Supplement, the Notes will be subject to optional redemption by the Bank in accordance with the terms specified in “*Description of the Notes — Redemption and Repurchase.*” Such optional redemption feature is likely to limit the market value of such Notes, which generally will not rise substantially above the price at which they can be redeemed.

The Bank may be expected to redeem the Notes when its cost of borrowing is lower than the interest rate on the Notes. At those times, you generally would not be able to reinvest the redemption proceeds at an effective interest rate as high as the interest rate on the Notes being redeemed and may only be able to do so at a significantly lower rate. You should consider reinvestment risk in light of other investments available at that time.

In certain circumstances where the redemption of the Notes would result in the Bank not meeting the TLAC requirements applicable to it pursuant to the TLAC Guideline, such redemption would be subject to the prior approval of the Superintendent of Financial Institutions as discussed below under “*Description of the Notes—Redemption and Repurchase—Approval of Redemption, Repurchases and Defeasance; Amendments and Modifications*” with respect to Bail-inable Notes.

Your investment may result in a loss; there may not be guaranteed return of principal.

Some issuances of the Notes may not be “principal protected,” so the amount received at maturity may be greater than, equal to, or less than the Issue Price. It also is possible that principal will not be repaid. In addition, at maturity or upon earlier redemption or exchange, in the case of some of the Notes, the Noteholder may receive securities of one or more companies, instead of a cash payment. These securities may have an aggregate value at that time that is less than the principal amount of the Notes.

The Notes may be issued at a substantial discount or premium.

The market values of the Notes issued at a substantial discount or premium from their stated notional or principal amount tend to fluctuate more in relation to general changes in interest rates than do prices for conventional interest-bearing securities. Generally the longer the remaining term of the Notes, the greater the price volatility as compared to conventional interest-bearing securities with comparable maturities.

Fixed Rate Notes are subject to interest rate risk.

The value of any Fixed Rate Notes issued under the Program may fall as a result of changes in the current interest rate in the capital markets (the “**Market Interest Rate**”). The interest rate of the Fixed Rate Notes is fixed at the date of issuance, but the Market Interest Rate typically changes on a daily basis. As the Market Interest Rate changes, the price of a security such as the Fixed Rate Notes generally changes in the opposite direction. If the Market Interest Rate rises, the value of the Fixed Rate Notes will typically decrease which could lead to losses if you sell the Fixed Rate Notes at such a time.

For Notes with floating interest rate, the interest payable on the Notes during floating rate period will be uncertain.

The interest rate of certain Notes during certain interest periods may be based on a reference rate. The interest rate applicable for those interest periods will be uncertain and could be as little as 0.00%.

Changes in exchange rates and exchange controls could result in a substantial loss to you.

An investment in Notes denominated in a currency other than your principal currency of business presents certain risks relating to currency conversions. These include the risk that exchange rates may significantly change (as a result of the devaluation or revaluation of certain currencies or otherwise), and the risk that authorities with jurisdiction over a relevant currency may impose or modify exchange controls. This risk is described in more detail below under “—Foreign Currency Risks.”

There are risks associated with Notes with payments in a Specified Currency other than U.S. dollars.

The terms of any Notes denominated in a Specified Currency other than U.S. dollars may provide that the Bank has the right to make a payment in U.S. dollars instead of the Specified Currency, if at or about the time when the payment on the Notes comes due, the Specified Currency is subject to convertibility, transferability or other conditions affecting its availability because of circumstances beyond the Bank’s control. These circumstances could include the imposition of exchange controls for the Specified Currency. The exchange rate used to make payments in U.S. dollars may be based on limited information and would involve significant discretion on the part of the Calculation Agent that will determine the amount of U.S. dollars to be paid, and which may be the Bank or an affiliate of the Bank. As a result, the value of the payment in U.S. dollars may be less than the value of the payment that would have been received in the Specified Currency if the Specified Currency had been available. The Calculation Agent generally will not have any liability for its determinations, although the Bank or one of its affiliates may serve as the Calculation Agent.

Court judgments for Notes with a Specified Currency other than U.S. dollars.

The Notes will be governed by New York law. Under Section 27 of the New York Judiciary Law, a state court in the State of New York rendering a judgment on Notes denominated in a Specified Currency other than U.S. dollars would be required to render the judgment in the Specified Currency. In turn, the judgment would be converted into U.S. dollars at the exchange rate prevailing on the date of entry of judgment. Consequently, in a lawsuit for payment on the Notes, a Noteholder would bear currency exchange risk until judgment is entered, which could be a long time.

In courts outside of New York, Noteholders may not be able to obtain judgment in a Specified Currency other than U.S. dollars. For example, a judgment for money in an action based on Notes denominated in a Specified Currency other than U.S. dollars in many other U.S. federal or state courts ordinarily would be enforced in the United States only in U.S. dollars. The date used to determine the rate of conversion of the Specified Currency into U.S. dollars will depend on various factors, including which court renders the judgment.

Changes or uncertainty in respect of LIBOR may affect the value of and return on Floating Rate Notes that reference LIBOR or the CMS Rate, including where LIBOR may not be available.

Various interest rates and other indices that are deemed to be “benchmarks,” including the London Inter-Bank Offered Rate (“**LIBOR**”) or the Constant Maturity Swap Rate (“**CMS**”), are the subject of recent national, international and other regulatory guidance and proposals for reform. Some of these reforms are already effective,

including the EU Benchmark Regulation (Regulation (EU) 2016/1011) (the “**Benchmarks Regulation**”), which compliance date was January 1, 2018, whilst others are still to be implemented.

These reforms and other pressures may cause LIBOR to disappear entirely, to perform differently than in the past (as a result of a change in methodology or otherwise), create disincentives for market participants to continue to administer or contribute to LIBOR or have other consequences that cannot be predicted. On July 27, 2017, the Chief Executive of the UK Financial Conduct Authority (the “**FCA**”), which regulates LIBOR, announced that the FCA will no longer persuade or compel banks to submit rates for the calculation of LIBOR after 2021.

It is not possible to predict the further effect of any changes in the methods by which LIBOR rates are determined, nor is it possible to predict the effect of any other reforms or proposals affecting LIBOR that may be enacted in the future, and may adversely affect the trading market for securities that bear interest at rates based on LIBOR, including Floating Rate Notes that bear interest at rates based on LIBOR. In addition, any future changes in the method pursuant to which LIBOR is determined or the transition to a successor benchmark may result in, among other things: (i) a sudden or prolonged increase or decrease in LIBOR or any successor benchmark rates; (ii) a delay in the publication of LIBOR or any such benchmark rates, (iii) a change in the rules or methodologies in LIBOR or any successor benchmarks that discourage market participants from continuing to administer or participate in LIBOR or any successor benchmarks; and (iv) LIBOR or any successor benchmark rate no longer being determined and published. Accordingly, in respect of a Note referencing LIBOR or any other relevant benchmark, such proposals for reform and changes in applicable regulation could have a material adverse effect on the value of and return on such a Note (including potential rates of interest thereon).

Because LIBOR is an element of the CMS rate, the potential cessation of LIBOR will have an effect on the calculation of the CMS rate.

Based on the foregoing, investors in Floating Rate Notes referencing LIBOR should be aware that:

(a) any of the reforms or pressures described above or any other changes to LIBOR could affect the level of the published rate, including to cause it to be lower and/or more volatile than it would otherwise be; and

(b) if LIBOR is permanently or indefinitely discontinued prior to the maturity of such Notes or if the Bank or its designee determines that a Benchmark Transition Event and its related Benchmark Transition Date have occurred with respect to U.S. dollar LIBOR, then the rate of interest on such Notes will be determined, unless otherwise specified in the applicable Pricing Supplement, by the benchmark replacement provisions provided for herein under the caption “*Description of the Notes—Interest—Floating Rate Notes—Screen Rate Determination—Benchmark Transition Event for U.S. dollar LIBOR Notes.*” The selection of a Benchmark Replacement to replace U.S. dollar LIBOR, and any decisions, determinations or elections made by the Bank or its designee in connection with implementing a Benchmark Replacement with respect to such Notes in accordance with the benchmark replacement provisions, could result in adverse consequences to the interest rate on such Notes, which could adversely affect the return on, value of and market for such Notes. Further, there is no assurance that the characteristics of any Benchmark Replacement will be similar to U.S. dollar LIBOR, or that any Benchmark Replacement will produce the economic equivalent of U.S. dollar LIBOR. Any decisions, determinations or elections made by the Bank or its designee in accordance with the benchmark replacement provisions will be binding on the noteholders.

More generally, any significant change to the setting or existence of LIBOR could have a material adverse effect on the value or liquidity of, and the amount payable under, Floating Rate Notes that reference LIBOR. No assurance may be provided that relevant changes will not be made to LIBOR and/or that LIBOR will continue to exist. Investors should consider these matters when making their investment decision with respect to such Notes.

The application of the benchmark replacement provisions may adversely affect Floating Rate Notes that reference U.S. dollar LIBOR.

The Benchmark Replacements specified in the benchmark replacement provisions include Term SOFR, a forward-looking term rate which will be based on the Secured Overnight Financing Rate. Term SOFR does not currently exist and is currently being developed under the sponsorship of the Federal Reserve Bank of New York (the “**FRBNY**”), and there is no assurance that the development of Term SOFR or any other forward-looking term rate based on SOFR will be completed. Uncertainty surrounding the development of forward-looking term rates based on SOFR could have a material adverse effect on the return on, value of and market for, the Notes. If a Benchmark

Transition Event and its related Benchmark Replacement Date occur with respect to U.S. dollar LIBOR and, at that time, a form of Term SOFR has not been selected or recommended by the Relevant Governmental Body, then the next-available Benchmark Replacement under the benchmark replacement provisions will be used to determine the amount of interest payable on such Notes for the next interest period and all subsequent interest periods (unless a Benchmark Transition Event and its related Benchmark Replacement Date occur with respect to that next-available Benchmark Replacement).

Under the benchmark replacement provisions, if a particular Benchmark Replacement or Benchmark Replacement Adjustment cannot be determined, then the next-available Benchmark Replacement or Benchmark Replacement Adjustment will apply. These replacement rates and adjustments may be selected or formulated by (i) the Relevant Governmental Body (such as the FRBNY's Alternative Reference Rates Committee (the "ARRC")), (ii) ISDA or (iii) in certain circumstances, the Bank. In addition, the benchmark replacement provisions expressly authorize the Bank to make Benchmark Replacement Conforming Changes with respect to, among other things, the determination and interpretation of interest periods and interest reset periods and the timing and frequency of determining rates and making payments of interest. The application of a Benchmark Replacement and Benchmark Replacement Adjustment, and any implementation of Benchmark Replacement Conforming Changes, could result in adverse consequences to the amount of interest payable on such Notes, which could adversely affect the return on, value of and market for such Notes. Further, there is no assurance that the characteristics of any Benchmark Replacement will be similar to the then-current Benchmark that it is replacing, or that any Benchmark Replacement will produce the economic equivalent of the then-current Benchmark that it is replacing.

An investment in any notes linked to SOFR (such notes, the "SOFR Rate Notes"), may entail significant risks not associated with similar investments in conventional debt securities.

Any investor should ensure that it understands the nature of the terms of SOFR Rate Notes and the extent of its exposure to risk, and that it considers the suitability of SOFR Rate Notes as an investment in the light of its own circumstances and financial condition. Investors should consult their own professional advisers about the risks associated with investment in SOFR Rate Notes and the suitability of investing in these SOFR Rate Notes in light of their particular circumstances.

The daily secured overnight financing rate is published by the Federal Reserve Bank of New York and is intended to be a broad measure of the cost of borrowing cash overnight collateralized by Treasury securities. The Federal Reserve Bank of New York reports that the daily secured overnight financing rate includes all trades in its reported Broad General Collateral Rate, plus bilateral Treasury repurchase agreement transactions cleared through the delivery-versus-payment service offered by the Fixed Income Clearing Corporation (the "FICC"), a subsidiary of The Depository Trust and Clearing Corporation ("DTCC"). The daily secured overnight financing rate is filtered by the Federal Reserve Bank of New York to remove a portion of the foregoing transactions considered to be "specials".

The Federal Reserve Bank of New York reports that the daily secured overnight financing rate is calculated as a volume-weighted median of transaction-level tri-party repo data collected from The Bank of New York Mellon as well as general collateral finance repurchase agreement transaction data and data on bilateral Treasury repurchase transactions cleared through the FICC's delivery-versus-payment service. The Federal Reserve Bank of New York notes that it obtains information from DTCC Solutions LLC, an affiliate of DTCC. The Federal Reserve Bank of New York notes on its publication page for the daily secured overnight financing rate that use of the daily secured overnight financing rate is subject to important limitations and disclaimers, including that the Federal Reserve Bank of New York may alter the methods of calculation, publication schedule, rate revision practices or availability of the daily secured overnight financing rate at any time without notice.

As the daily secured overnight financing rate is published by the Federal Reserve Bank of New York based on data received from other sources, the Bank has no control over its determination, calculation or publication. There can be no guarantee that the daily secured overnight financing rate will not be discontinued or fundamentally altered in a manner that is materially adverse to the interests of investors in SOFR Rate Notes. If the manner in which the daily secured overnight financing rate is calculated is changed, that change may result in a reduction of the amount of interest payable on SOFR Rate Notes and the trading prices of SOFR Rate Notes.

The Federal Reserve Bank of New York began to publish the daily secured overnight financing rate in April 2018. The Federal Reserve Bank of New York has also begun publishing historical indicative daily secured overnight

financing rates going back to 2014. Investors should not rely on any historical changes or trends in the daily secured overnight financing rate as an indicator of future changes in the daily secured overnight financing rate. Also, as the daily secured overnight financing rate is a relatively new market index, SOFR Rate Notes will likely have no established trading market when issued, and an established trading market may never develop or may not be very liquid. Market terms for debt securities indexed to the daily secured overnight financing rate, such as the spread over the index reflected in interest rate provisions, may evolve over time, and trading prices of SOFR Rate Notes may be lower than those of later-issued indexed debt securities as a result. Similarly, if the daily secured overnight financing rate does not prove to be widely used in securities like SOFR Rate Notes, the trading price of SOFR Rate Notes may be lower than those of notes linked to indices that are more widely used. Investors in SOFR Rate Notes may not be able to sell SOFR Rate Notes at all or may not be able to sell the SOFR Rate Notes at prices that will provide them with a yield comparable to similar investments that have a developed secondary market, and may consequently suffer from increased pricing volatility and market risk.

The daily secured overnight financing rate is a new market index and the related derivative, futures and options markets are just developing. There can be no assurance that such markets will develop or will be liquid. Market rates for hedging interest rate risk related to the daily secured overnight financing rate may be higher than the market rates related to more established indices. Investors may not be able to hedge any interest rate risk related to SOFR Rate Notes and consequently may be exposed to increased pricing volatility for such notes.

Moreover, under the benchmark replacement provisions set forth under “*Description of the Notes—Interest—Floating Rate Notes— Screen Rate Determination—Benchmark Transition Event for U.S. dollar LIBOR Notes*,” if a Benchmark Transition Event and related Benchmark Replacement Date occur with respect to U.S. dollar LIBOR and the Bank or its designee (after consulting with the Bank) cannot determine the Interpolated Benchmark with respect to U.S. dollar LIBOR, then the rate of interest on Floating Rate U.S. dollar LIBOR Notes will be determined based on SOFR unless a Benchmark Transition Event and related Benchmark Replacement Date also occur with respect to the Benchmark Replacements based on SOFR, in which case the rate of interest on such Notes will be based on the next-available Benchmark Replacement. In the following discussion of risks relating to SOFR, references to Notes mean the Notes at any time when the rate of interest on such Notes is or will be determined based on SOFR.

The composition and characteristics of SOFR are not the same as those of U.S. dollar LIBOR, and SOFR is not expected to be a comparable replacement for U.S. dollar LIBOR.

In June 2017, the ARRC announced SOFR as its recommended alternative to U.S. dollar LIBOR. However, the composition and characteristics of SOFR are not the same as those of U.S. dollar LIBOR. SOFR is a broad Treasury repurchase financing rate that represents overnight secured funding transactions and is not the economic equivalent of U.S. dollar LIBOR. While SOFR is a secured rate, U.S. dollar LIBOR is an unsecured rate. And, while SOFR is currently only an overnight rate, U.S. dollar LIBOR is a forward-looking rate that represents interbank funding for a specified term.

As a result, there can be no assurance that SOFR will perform in the same way as U.S. dollar LIBOR would have at any time, including, without limitation, as a result of changes in interest and yield rates in the market, bank credit risk, market volatility or global or regional economic, financial, political, regulatory, judicial or other events. For the same reasons, SOFR is not expected to be a comparable replacement for U.S. dollar LIBOR.

SOFR has a very limited history, and the future performance of SOFR cannot be predicted based on historical performance.

The publication of SOFR began in April 2018, and, therefore, it has a very limited history. In addition, the future performance of SOFR cannot be predicted based on the limited historical performance. Levels of SOFR following the occurrence of a Benchmark Transition Event and related Benchmark Replacement Date may bear little or no relation to the historical actual or historical indicative data. Prior observed patterns, if any, in the behavior of market variables and their relation to SOFR, such as correlations, may change in the future. While some pre-publication historical data have been released by the FRBNY, such analysis inherently involves assumptions, estimates and approximations. The future performance of SOFR is impossible to predict and therefore no future performance of SOFR may be inferred from any of the historical actual or historical indicative data. Hypothetical or historical performance data are not indicative of, and have no bearing on, the potential performance of SOFR.

SOFR may be more volatile than other benchmark or market rates.

Since the initial publication of SOFR, daily changes in the rate have, on occasion, been more volatile than daily changes in other benchmark or market rates, such as three-month U.S. dollar LIBOR, during corresponding periods, and SOFR may bear little or no relation to the historical actual or historical indicative data. In addition, although changes in Term SOFR, Average SOFR and Compounded SOFR generally are not expected to be as volatile as changes in daily levels of SOFR, the return on and value of the Notes may fluctuate more than floating rate securities that are linked to less volatile rates.

Any failure of SOFR to gain market acceptance could adversely affect the Notes.

According to the ARRC, SOFR was developed for use in certain U.S. dollar derivatives and other financial contracts as an alternative to U.S. dollar LIBOR in part because it is considered a good representation of general funding conditions in the overnight U.S. Treasury repurchase agreement market. However, as a rate based on transactions secured by U.S. Treasury securities, it does not measure bank-specific credit risk and, as a result, is less likely to correlate with the unsecured short-term funding costs of banks. This may mean that market participants would not consider SOFR a suitable replacement or successor for all of the purposes for which U.S. dollar LIBOR historically has been used (including, without limitation, as a representation of the unsecured short-term funding costs of banks), which may, in turn, lessen market acceptance of SOFR. Any failure of SOFR to gain market acceptance could adversely affect the return on and value of the Notes and the price at which investors can sell the Notes in the secondary market.

The secondary trading market for securities linked to SOFR may be limited.

If SOFR does not prove to be widely used as a benchmark in securities that are similar or comparable to the Notes, the trading price of the SOFR Rate Notes may be lower than those of securities that are linked to rates that are more widely used. Similarly, market terms for securities that are linked to SOFR, including, but not limited to, the spread over the reference rate reflected in the interest rate provisions, may evolve over time, and as a result, trading prices of the SOFR Rate Notes may be lower than those of later-issued securities that are based on SOFR. Investors in the SOFR Rate Notes may not be able to sell the SOFR Rate Notes at all or may not be able to sell the SOFR Rate Notes at prices that will provide them with a yield comparable to similar investments that have a developed secondary market, and may consequently suffer from increased pricing volatility and market risk.

SOFR and the SOFR Index may be modified or discontinued, and the SOFR Rate Notes may bear interest by reference to a rate other than Compounded SOFR, Average SOFR or Term SOFR, which could adversely affect the value of the SOFR Rate Notes.

SOFR is a relatively new rate, and the FRBNY (or a successor), as administrator of SOFR, may make methodological or other changes that could change the value of SOFR, including changes related to the method by which SOFR is calculated, eligibility criteria applicable to the transactions used to calculate SOFR, or timing related to the publication of SOFR. If the manner in which SOFR is calculated is changed, that change may result in a reduction of the amount of interest payable on the Notes, which may adversely affect the trading prices of the Notes. The administrator of SOFR may withdraw, modify, amend, suspend or discontinue the calculation or dissemination of SOFR in its sole discretion and without notice and has no obligation to consider the interests of holders of the Notes in calculating, withdrawing, modifying, amending, suspending or discontinuing SOFR.

The SOFR Index is published by the FRBNY and measures the cumulative impact of compounding SOFR on a unit of investment over time, with the initial value set to 1.00000000 on April 2, 2018, the first value date of SOFR. The SOFR Index value reflects the effect of compounding SOFR each business day and allows the calculation of compounded SOFR averages over custom time periods. The FRBNY notes on its publication page for the SOFR Index that use of the SOFR Index is subject to important limitations, indemnification obligations and disclaimers, including that the FRBNY may alter the methods of calculation, publication schedule, rate revision practices or availability of the SOFR Index at any time without notice. Moreover, the SOFR Index is published by the FRBNY based on data received by it from sources other than the Bank, and the Bank has no control over its methods of calculation, publication schedule, rate revision practices or availability of the SOFR Index at any time. There can be no guarantee, particularly given its relatively recent introduction, that the SOFR Index will not be discontinued or fundamentally altered in a manner that is materially adverse to the interests of investors in the SOFR Rate Notes. If the manner in which the SOFR Index is calculated, including the manner in which SOFR is calculated, is changed,

that change may result in a reduction in the amount of interest payable on the SOFR Rate Notes and the trading prices of such Notes. In addition, the FRBNY may withdraw, modify or amend the published SOFR Index or SOFR data in its sole discretion and without notice. The interest rate for any interest period will not be adjusted for any modifications or amendments to the SOFR Index or SOFR data that the FRBNY may publish after the interest rate for that interest period has been determined.

If the Bank or its designee (which may be the Calculation Agent) determines that a Benchmark Transition Event and its related Benchmark Replacement Date have occurred in respect of SOFR or the SOFR Index, then the interest rate on the SOFR Rate Notes will no longer be determined by reference to SOFR or the SOFR Index, but instead will be determined by reference to a different rate, which will be a different benchmark than SOFR or the SOFR Index, plus a spread adjustment, which we refer to as a “Benchmark Replacement,” as further described under *“Description of the Notes—Interest—Floating Rate Notes—SOFR Rate Notes—Effect of a Benchmark Transition Event.”*

If a particular Benchmark Replacement or Benchmark Replacement Adjustment cannot be determined, then the next-available Benchmark Replacement or Benchmark Replacement Adjustment will apply. These replacement rates and adjustments may be selected, recommended or formulated by (i) the Relevant Governmental Body (such as the ARRC), (ii) ISDA or (iii) in certain circumstances, the Bank, the Calculation Agent or another designee of the Bank. In addition, the terms of the SOFR Rate Notes expressly authorize the Bank, the calculation Agent or another designee of the Bank to make Benchmark Replacement Conforming Changes with respect to, among other things, changes to the definition of “Interest Period,” timing and frequency of determining rates and making payments of interest and other administrative matters. The determination of a Benchmark Replacement, the calculation of the interest rate on the SOFR Rate Notes by reference to a Benchmark Replacement (including the application of a Benchmark Replacement Adjustment), any implementation of Benchmark Replacement Conforming Changes and any other determinations, decisions or elections that may be made under the terms of the SOFR Rate Notes in connection with a Benchmark Transition Event could adversely affect the value of the SOFR Rate Notes, the return on the SOFR Rate Notes and the price at which an investor can sell such SOFR Rate Notes.

Any determination, decision or election described above will be made in the sole discretion of the Bank, the Calculation Agent or another designee of the Bank.

In addition, (i) the composition and characteristics of the Benchmark Replacement will not be the same as those of SOFR, the Benchmark Replacement will not be the economic equivalent of SOFR, there can be no assurance that the Benchmark Replacement will perform in the same way as SOFR would have at any time and there is no guarantee that the Benchmark Replacement will be a comparable substitute for SOFR (each of which means that a Benchmark Transition Event could adversely affect the value of the SOFR Rate Notes, the return on the SOFR Rate Notes and the price at which an investor can sell the SOFR Rate Notes), (ii) any failure of the Benchmark Replacement to gain market acceptance could adversely affect the SOFR Rate Notes, (iii) the Benchmark Replacement may have a very limited history and the future performance of the Benchmark Replacement cannot be predicted based on historical performance and (iv) the administrator of the Benchmark Replacement may make changes that could change the value of the Benchmark Replacement or discontinue the Benchmark Replacement and has no obligation to consider an investor’s interests in doing so.

The interest rate on the SOFR Rate Notes will be based on Compounded SOFR, SOFR Index, Average SOFR or Term SOFR, each of which is relatively new in the marketplace.

For each Interest Period, the interest rate on the SOFR Rate Notes will be based on Compounded SOFR, SOFR Index, Average SOFR or Term SOFR, each of which is calculated using the specific formula described in *“Description of the Notes—Interest—Floating Rate Notes—SOFR Rate Notes”* below, not the SOFR rate published on or in respect of a particular date during such Interest Period or an arithmetic average of SOFR rates during such period. For this and other reasons, the Base Rate on the SOFR Rate Notes during any Interest Period will not be the same as the Base Rate on other SOFR-linked investments that use an alternative basis to determine the applicable interest rate. Further, if the SOFR rate in respect of a particular date during an Interest Period is negative, its contribution to Compounded SOFR or Average SOFR will be less than one, resulting in a reduction to Compounded SOFR or Average SOFR used to calculate the interest payable on the SOFR Rate Notes on the Interest Payment Date for such Interest Period.

In addition, very limited market precedent exists for Notes that use SOFR as the Base Rate and the method for calculating an interest rate based upon SOFR in those precedents varies. In addition, the Federal Reserve Bank of New York only began publishing the SOFR Index on March 2, 2020. Accordingly, the specific formula for the Compounded SOFR rate used in the SOFR Rate Notes may not be widely adopted by other market participants, if at all. If the market adopts a different calculation method, that would likely adversely affect the market value of the SOFR Rate Notes.

The Bank or its designee (which may be the Calculation Agent) will make determinations with respect to the SOFR Rate Notes.

The Bank or its designee (which may be the Calculation Agent) will make certain determinations with respect to the SOFR Rate Notes. In addition, if a Benchmark Transition Event and its related Benchmark Replacement Date have occurred, the Bank or its designee (which may be the Calculation Agent) will make certain determinations with respect to the SOFR Rate Notes in the sole discretion of the Bank, its designee or the Calculation Agent. Any of these determinations may adversely affect the payout to an investor on the SOFR Rate Notes. Moreover, certain determinations may require the exercise of discretion and the making of subjective judgments. These potentially subjective determinations may adversely affect the payout to an investor on the SOFR Rate Notes.

Because LIBOR is an element of the CMS rate, the calculation of the CMS Rate will change after the cessation of LIBOR.

The hypothetical fixed-for-floating U.S. dollar interest rate swap transaction upon which the CMS Rate is based relies on a calculation of U.S. dollar LIBOR. At this time, it is not known how the U.S. dollar LIBOR floating rate leg of the CMS Rate will be calculated after LIBOR ceases to be published. Although it is likely that the fallback provisions for U.S. dollar LIBOR floating rate notes, as described below under “Description of the Notes — Interest — Floating Rate Notes — Benchmark Transition Event for U.S. dollar LIBOR Notes,” will apply in the calculation of the floating rate leg of the CMS Rate instead of the current U.S. dollar LIBOR calculation, there is no certainty in the market at this time. Consequently, after the cessation of LIBOR, the CMS Rate may change in ways that may be adverse to holders of Floating Rate Notes linked to the CMS Rate.

Historical levels of the reference rate(s) should not be taken as an indication of its future performance

The historical performance of the reference rate(s), which may be included in the applicable Supplement, should not be taken as an indication of its future performance during the term of the Notes. Changes in the level of the reference rate(s) will affect the market value of the Notes, but it is impossible to predict whether the level of the reference rate(s) will rise or fall.

The inclusion in the Issue Price of the Notes of a selling concession and of our cost of hedging our market risk under the Notes is likely to adversely affect the market value of the Notes.

The price at which you purchase the Notes is expected to include a selling concession, as well as the costs that we (or one of our affiliates) may incur in the hedging of our market risk under the Notes. The hedging costs include the expected cost of undertaking this hedge, as well as the profit that we (or our affiliates) expect to realize in consideration for assuming the risks inherent in providing the hedge. As a result, assuming no change in market conditions or any other relevant factors, the price, if any, at which you may be able to sell your Notes prior to maturity (as extended, if applicable) will likely be less than the Issue Price.

The Notes may not be a suitable investment for all investors.

You must determine the suitability of an investment in the Notes in light of your own circumstances. In particular, you should:

- (a) have sufficient knowledge and experience to make a meaningful evaluation of the Notes, the merits and risks of investing in the Notes and the information contained or incorporated by reference in this Offering Circular or the applicable Supplement;

- (b) have access to, and knowledge of, appropriate analytical tools to evaluate, in the context of your particular financial situation, an investment in the Notes and the impact the Notes will have on its overall investment portfolio;
- (c) have sufficient financial resources and liquidity to bear all of the risks of an investment in the Notes, including where the currency for principal or interest payments is different from your currency;
- (d) understand thoroughly the terms of the Notes and be familiar with the behavior of the relevant financial markets; and
- (e) be able to evaluate (either alone or with the help of a financial adviser) at the time of initial investment and on an ongoing basis possible economic, interest rate and other factors that may affect your investment and your ability to bear the applicable risks.

The Bank's hedging activities may affect the market value of and the return on the Notes.

At any time, the Bank or its affiliates, including the Agents that are affiliates of the Bank, may engage in hedging activities relating to the Notes. This hedging activity, in turn, may decrease the market value of the Notes prior to maturity, and may affect the amounts due on the Notes. In addition, the Bank or one or more of its affiliates, including the Agents that are affiliates of the Bank, may purchase or otherwise acquire a long or short position in the Notes from time to time, and may hold or resell the Notes. For example, the Agents may enter into these transactions in connection with any market making transactions in which they engage. There is no assurance that these activities will not adversely affect the market value of the Notes prior to maturity or the amounts due on the Notes.

The business activities of the Bank or its affiliates may create conflicts of interest.

We and our affiliates expect to engage in trading activities related to the reference rate(s) that are not for the account of holders of the Notes or on their behalf. These trading activities may present a conflict between the holders' interest in the Notes and the interests we and our affiliates will have in our or their proprietary accounts, in facilitating transactions, including options and other derivatives transactions, for their customers and in accounts under their management. These trading activities could be adverse to the interests of the holders of the Notes.

Foreign Currency Risks

You should consult your financial and legal advisers as to any specific risks entailed by an investment in securities that are denominated or payable in, or the payment of which is linked to the value of, a currency other than the currency of the country in which you are resident or in which you conduct your business, which we refer to as your "home currency." These securities are not appropriate investments for investors who are not sophisticated in foreign currency transactions. We disclaim any responsibility to advise prospective purchasers who are residents of countries other than the United States of any matters arising under non-U.S. law that may affect the purchase of or holding of, or the receipt of payments on, these securities. These persons should consult their own legal and financial advisers concerning these matters.

General exchange rate and exchange control risks.

An investment in a security that is denominated or payable in, or the payment of which is linked to the value of, currencies other than your home currency entails significant risks. These risks include the possibility of significant changes in rates of exchange between your home currency and the relevant foreign currencies and the possibility of the imposition or modification of exchange controls by the relevant governmental entities. These risks generally depend on economic and political events over which we have no control.

Exchange rates will affect your investment.

In recent years, rates of exchange between some currencies have been highly volatile and this volatility may continue in the future. Fluctuations in any particular exchange rate that have occurred in the past are not necessarily indicative, however, of fluctuations that may occur during the term of any security. Depreciation against your home currency of the currency in which a security is payable would result in a decrease in the effective yield of the security below its coupon rate or in the payout of the security and could result in an overall loss to you on a home currency basis. In addition, depending on the specific terms of a currency-linked security, changes in exchange rates relating to

any of the relevant currencies could result in a decrease in its effective yield and in your loss of all or a substantial portion of the value of that security.

We have no control over exchange rates.

Currency exchange rates can either float or be fixed by sovereign governments. Exchange rates of most economically developed nations are permitted to fluctuate in value relative to each other. However, from time to time governments may use a variety of techniques, such as intervention by a country's central bank, the imposition of regulatory controls or taxes or changes in interest rates to influence the exchange rates of their currencies. Governments may also issue a new currency to replace an existing currency or alter the exchange rate or relative exchange characteristics by a devaluation or revaluation of a currency. These governmental actions could change or interfere with currency valuations and currency fluctuations that would otherwise occur in response to economic forces, as well as in response to the movement of currencies across borders.

As a consequence, these government actions could adversely affect yields or payouts in your home currency for (i) securities denominated or payable in currencies other than your home currency or (ii) currency-linked securities.

We will not make any adjustment or change in the terms of the securities in the event that exchange rates should become fixed, or in the event of any devaluation or revaluation or imposition of exchange or other regulatory controls or taxes, or in the event of other developments affecting your home currency or any applicable foreign currency. You will bear those risks.

Some foreign currencies may become unavailable.

Governments have imposed from time to time, and may in the future impose, exchange controls that could also affect the availability of a specified currency. Even if there are no actual exchange controls, it is possible that the applicable currency for any security would not be available when payments on that security are due.

Exchange rates may affect the value of a New York judgment involving non-U.S. dollar securities.

The Notes will be governed by and construed in accordance with the laws of the State of New York. If a New York court were to enter a judgment in an action on any securities denominated in a foreign currency, such court would enter a judgment in the foreign currency and convert the judgment or decree into U.S. dollars at the prevailing rate of exchange on the date such judgment or decree is entered.

Risks Related to the Market Generally

Set out below is a brief description of the principal market risks, including liquidity risk and credit risk.

Many economic and other factors may adversely affect the market value of the Notes.

The market for, and the market value of, the Notes may be affected by a number of factors that may either offset or magnify each other, including:

- the time remaining to maturity of the Notes;
- the aggregate amount outstanding of the Notes;
- the level, direction, and volatility of market interest rates generally;
- general economic conditions of the capital markets in the United States;
- geopolitical conditions and other financial, political, regulatory, and judicial events that affect the capital markets generally;
- our financial condition and creditworthiness; and
- any market-making activities with respect to the Notes.

Absence of secondary market; lack of liquidity.

There is not, at present, an active and liquid secondary market for the Notes, and there can be no assurance that a secondary market for the Notes will develop. If a market does develop, it may not be very liquid. The Notes have not been, and will not be, registered under the Securities Act or any other applicable securities laws and are subject to certain restrictions on the resale and other transfer thereof as set forth under “*Plan of Distribution and Conflicts of Interest.*” If a secondary market does develop, it may not continue for the life of the Notes or it may not provide holders of the Notes with liquidity of investment with the result that a holder of the Notes may not be able to find a buyer to buy its Notes readily or at prices that will enable the holder of the Notes to realize a desired yield. Therefore, you may not be able to sell your Notes easily or at prices that will provide you with a yield comparable to similar investments that have a developed secondary market. This is particularly the case for Notes that are especially sensitive to interest rate, currency or market risks, are designed for specific investment objectives or strategies or have been structured to meet the investment requirements of limited categories of investors. These types of Notes generally would have a more limited secondary market and more price volatility than conventional debt securities. Illiquidity may have a severely adverse effect on the market value of Notes.

In addition, you should be aware of the prevailing and widely reported global credit market conditions (which continue at the date hereof), whereby there is a general lack of liquidity in the secondary market for instruments similar to (and including) the Notes. As a result, you may suffer losses on the Notes in secondary market transactions even if there is no decline in the performance of the Bank. We cannot predict how and when these circumstances will change and whether, if and when they do change, there will be a more liquid market for the Notes or instruments similar to the Notes at that time.

In addition, liquidity crises may stall the primary market for a number of financial products including the Notes. While liquidity crises have been alleviated for certain sectors of the global credit markets, there can be no assurance that the market for securities including the Notes will recover or will recover at the same time or to the same degree as such other recovering global credit market sectors.

Legal Investment Considerations May Restrict Certain Investments

The investment activities of certain investors are subject to legal investment laws and regulations, or review or regulation by certain authorities. You should consult your legal advisers to determine whether and to what extent (i) Notes are legal investments for you, (ii) Notes can be used as collateral for various types of borrowing and (iii) other restrictions apply to your purchase or pledge of any Notes. Financial institutions should consult their legal advisers or the appropriate regulators to determine the appropriate treatment of Notes under any applicable risk-based capital or similar rules.

Interests of Agents

Certain of the Agents and their affiliates have engaged, and may in the future engage, in investment banking and/or commercial banking transactions with, and may perform services for, the Bank in the ordinary course of business without regard to the Bank, the Guarantor, the Trustee or the holders of the Notes.

There are potential conflicts of interest between you and the Calculation Agent.

The Bank or one of its affiliates may serve as the Calculation Agent. The Calculation Agent will, among other things, decide the amount of your payment for any applicable payment date, and make any other required determinations. We may change the Calculation Agent after the original Issue Date without notice to you. The Calculation Agent will be required to carry out its duties in good faith and use its reasonable judgment. However, because the Calculation Agent will exercise its judgment when performing its functions and may take into consideration the Bank’s ability to unwind any related hedges, and this discretion by the Calculation Agent may affect payments on the Notes, the Calculation Agent may have a conflict of interest if it needs to make any such decision.

Under the fallback provisions for Floating Rate Notes linked to LIBOR or CMS, we or the Calculation Agent may make calculations and adjustments to the Rate of Interest in connection with any successor or replacement rate for LIBOR or CMS. Any of these calculations and adjustments will be done in the sole discretion of us or the Calculation Agent, without taking into account the interests of the Note holders.

Additional Risk Factors

Please review the applicable Supplement for additional risk factors that may be applicable to the Notes that you purchase.

NATIONAL BANK OF CANADA

The information appearing below is supplemented by the more detailed information contained in the documents incorporated by reference in this Offering Circular. See “Documents Incorporated by Reference” above.

Introduction

The Bank’s roots date back to 1859 with the founding of Banque Nationale in Québec City, Québec, Canada. The Bank is a chartered bank governed by the Bank Act and is named in Schedule I of the Bank Act. The head office of the Bank is located at, 600 De La Gauchetière Street West, Montréal, Québec, Canada H3B 4L2. The telephone number of the Bank is 1-514-394-6433.

Business

The Bank, together with its various subsidiaries, is an integrated provider of financial services to retail, commercial, corporate and institutional clients. It operates in four business segments, Personal and Commercial, Wealth Management, Financial Markets, and U.S. Specialty Finance and International and offers a complete range of services: banking and investment solutions, insurance, wealth management, corporate and investment banking, mutual fund and pension fund management, and securities brokerage.

NATIONAL BANK OF CANADA, NEW YORK BRANCH

Overview of the New York Branch and the Notes

National Bank of Canada, New York Branch (“NBCNY”) carries on business pursuant to a license issued by the Superintendent and provides a full range of commercial banking services to corporate customers, institutional investors and financial institutions, being particularly active in the area of commercial lending. It funds itself by taking corporate and bank deposits, borrowing in the interbank market and issuing certificates of deposit. NBCNY maintains a trading portfolio of securities consisting primarily of investment grade debt securities, including mortgage-backed securities issued by U.S. — government-sponsored entities and floating- and fixed-rate notes issued by financial institutions and the U.S. Treasury.

NBCNY is licensed by the Superintendent and is regulated by the State of New York Banking Department on a basis substantially equivalent to New York State chartered banks. Therefore, the Notes (which are guaranteed by NBCNY) are exempt from the registration requirements of the Securities Act.

The obligations of the NBCNY in respect of the Notes are not insured or guaranteed by the FDIC or any other governmental agency or authority in the United States, Canada or elsewhere.

NBCNY employed a total of 14 persons as of June 9, 2020 and is located at The Park Avenue Tower, 65 East 55th Street, 8th Floor, New York, NY 10022. Its telephone number is (212) 632-8500.

Supervision and Regulation of the New York Branch in the United States

Banking Activities

The Bank is licensed by the Superintendent under the New York Banking Law (the “NYBL”) to maintain a branch office in New York State. Under that license, NBCNY is authorized to engage in “the business of buying, selling, paying or collecting bills of exchange, or of issuing letters of credit or of receiving money for transmission or transmitting the same by draft, check, cable or otherwise, or of making loans, or of receiving deposits...”.

NBCNY must maintain regular records of assets and liabilities of NBCNY. NBCNY must submit written reports as to its assets and liabilities and other matters, to the extent that the Superintendent requires the filing of these reports, and is examined by the New York State Department of Financial Services and the Board of Governors of the Federal Reserve System (the “**Federal Reserve Board**”).

Under the NYBL and implementing regulations, NBCNY must maintain on deposit pledged to the Superintendent with a bank in the State of New York certain eligible assets (which may include U.S. treasuries, other obligations issued or guaranteed by the U.S. government or agencies or instrumentalities thereof, obligations of the New York State government and local governments within New York State, and numerous other assets meeting the criteria established in the NYBL and applicable regulations) equal to 1% of third-party liabilities. Under the NYBL, the Superintendent is also empowered to require branches of foreign banks to maintain in New York specified assets equal to such percentage of the branches’ liabilities, excluding liabilities to other offices, agencies, branches and affiliates of the Bank, as the Superintendent may designate. At present, the Superintendent has set this percentage at 0%, although specific asset maintenance requirements may be imposed upon individual branches on a case-by-case basis. The Superintendent has not prescribed such a requirement for NBCNY.

The NYBL authorizes the Superintendent to take possession of the business and property in New York State of a foreign bank that is licensed by the Superintendent to maintain a New York branch under circumstances similar to those that would permit the Superintendent to take possession of the business and property of a New York State-chartered bank, including the violation of any law, conduct of business in an unauthorized or unsafe manner, capital impairments, or the suspension of payment of obligations. Additionally, the NYBL authorizes the Superintendent to take possession of such a foreign bank’s business and property in New York State upon a finding that the foreign bank is in liquidation in the jurisdiction of its domicile or that there is reason to doubt a foreign bank’s ability or willingness to pay in full the claims of its creditors.

Pursuant to the NYBL, when the Superintendent takes possession of a New York branch of a foreign bank, it succeeds to NBCNY’s assets and all other assets of the foreign bank located in New York State. In liquidating or

dealing with NBCNY's business after taking possession of the branch, the Superintendent shall accept for payment out of the foreign bank's business and property in New York State only those claims that arose out of transactions with the branch, and shall not accept (1) claims that would not represent an enforceable legal obligation against the branch if such branch were a separate and independent legal entity, or (2) amounts due and other liabilities to other offices, agencies or branches of, and affiliates of, the foreign bank. After such claims are paid, the Superintendent would turn over the remaining assets, if any, to any other U.S. offices that may be maintained by the foreign bank and that are being liquidated, upon the request of the liquidators of those offices; after such payments, if any, have been made, any assets of the foreign bank remaining in the possession of the Superintendent would be turned over to the head office of the foreign bank or to the foreign bank's duly appointed domiciliary liquidator or receiver.

NBCNY's loans, purchases and discounts of notes, bills of exchange, bonds, debentures and other obligations and extensions of credit and acceptances are subject to the same limitations as are applicable to a New York State-chartered bank. For NBCNY, such limits, which are expressed as a percentage of capital, surplus and undivided profits, are based on the capital, surplus and undivided profits of the Bank on a global basis.

In addition to being subject to New York laws and regulations, NBCNY is also subject to federal regulation primarily under the International Banking Act of 1978, as amended (the "**IBA**"), and the amendments to the IBA made pursuant to the Foreign Bank Supervision Enhancement Act of 1991 (the "**FBSEA**"), and to examination by the Federal Reserve Board, in its capacity as the Bank's U.S. "umbrella supervisor." Under the IBA, as amended by the FBSEA, all U.S. branches and agencies of foreign banks, such as NBCNY, are subject to reporting and examination requirements similar to those imposed on domestic banks that are owned or controlled by U.S. bank holding companies, and most U.S. branches and agencies of foreign banks, including NBCNY, are subject to reserve requirements on deposits pursuant to regulations of the Federal Reserve Board. Because NBCNY engages in a wholesale banking business and does not accept retail deposits, its deposits are not, and are not required to be, insured by the Federal Deposit Insurance Corporation. The Bank is subject to the same conditions and limitations as are applicable to domestic U.S. state-chartered or national banks with regard to the establishment of new branches or the acquisition of subsidiary banks outside its "home state" which, in the case of the Bank, is New York.

Among other things, the FBSEA provides that a state-licensed branch of a foreign bank may not engage in any type of activity that is not permissible for a federally-licensed branch of a foreign bank unless the Federal Reserve Board has determined that such activity is consistent with sound banking practice. A state-licensed branch of a foreign bank must also comply with the single-borrower lending limits applicable to federally licensed branches or agencies, which derive from those applicable to national banks. These limits are based on the capital and surplus of the entire foreign bank. In addition, the FBSEA authorizes the Federal Reserve Board to terminate the activities of a U.S. branch or agency of a foreign bank if it finds that (i) the foreign bank is not subject to comprehensive supervision on a consolidated basis in its home country or (ii) there is reasonable cause to believe that such foreign bank has violated the law or engaged in unsafe banking practice in the United States, and as a result, continued operation of the branch or agency would be inconsistent with the public interest and purposes of the banking laws.

If the Federal Reserve Board were to use this authority to close NBCNY, creditors of NBCNY would have recourse only against the Bank, unless the Superintendent or other regulatory authorities were to make alternative arrangements for the payment of the liabilities of NBCNY.

NBCNY is also restricted under federal banking law, in the same general manner as domestic U.S. banks, from engaging in certain "tying" arrangements involving its products and services and/or those of its affiliates. The NYBL limits the amount of loans to, purchases of securities from, and total liabilities of any one person by NBCNY and restricts executive officers of NBCNY from serving as executive officers of other banking entities.

The Gramm-Leach-Bliley Act (the "**GLBA**") and the regulations issued thereunder contain a number of other provisions that affect the Bank's U.S. banking operations and the operations of all U.S. financial institutions generally. One such provision relates to the financial privacy of consumers. In addition, the so-called "push-out" provisions of the GLBA limit the exclusion of banks (including NBCNY) from the definitions of "broker" and "dealer" under the U.S. Securities Exchange Act of 1934, as amended (the "**Exchange Act**"). Pursuant to the "push-out" provisions, banks are required to conduct their securities dealing and brokerage activities through registered broker-dealers (unless an exemption applies). The SEC has adopted rules implementing certain exemptions from the "dealer" push-out requirement, and the SEC and the Federal Reserve Board have jointly adopted Regulation R, which sets forth the

conditions under which banks may engage in certain types of securities-related activities without being deemed to be a “broker” and thereby being required to register with the SEC.

Anti-Money Laundering

On October 26, 2001, in response to the events of September 11, the President of the United States signed into law the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (the “**USA PATRIOT Act**”). Title III of the USA PATRIOT Act amended the Bank Secrecy Act (the “**BSA**”) by significantly expanding the responsibility of financial institutions in preventing the use of the U.S. financial system for money laundering or terrorist financing. Among other provisions, Title III of the USA PATRIOT Act and the BSA require banks in the United States, including U.S. branches, agencies and representative offices of foreign banks, to adopt a risk-based, written anti-money laundering program that includes the following components: (i) a system of internal controls to ensure ongoing compliance with applicable laws and regulations; (ii) the designation of an individual or individuals responsible for coordinating and monitoring day-to-day compliance; (iii) independent testing of compliance by internal audit or by qualified outside parties; and (iv) a training program for appropriate personnel. The anti-money laundering program must be approved by the foreign bank’s board of directors or by a delegate acting under the express authority of the board of directors. As part of its anti-money laundering program, NBCNY must also include policies and procedures for customer identification and verification, due diligence regarding foreign correspondent banking and private banking relationships, monitoring and reporting suspicious activity, and reporting certain transactions involving currency and monetary instruments.

NBCNY must also comply with the U.S. Treasury Department’s Office of Foreign Assets Control (“**OFAC**”) regulations. OFAC administers and enforces economic and trade sanctions against targeted foreign countries, individuals, entities and organizations in order to carry out U.S. foreign policy and national security objectives. Generally, the regulations require that assets of specified targets be blocked and prohibit certain types of trade and financial transactions with those targets unless a license has been issued by OFAC. Blocked assets and rejected transactions must be reported to OFAC.

Failure of the Bank (including NBCNY) to maintain and implement adequate programs to combat anti-money laundering and terrorist financing, and to comply with U.S. economic sanctions, could have a serious legal and reputational consequence.

Financial Regulatory Reform

On July 21, 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act (the “**Dodd-Frank Act**”) was enacted in the United States. The Dodd-Frank Act provides a broad framework for sweeping financial regulatory reforms designed to enhance supervision and regulation of financial firms and promote stability in the financial markets. The legislation establishes a new regulator, the Financial Stability Oversight Council, to monitor systemic risks posed by financial services companies and their activities. In addition to the statutory requirements imposed by the Dodd-Frank Act, the legislation also delegates authority to U.S. banking and securities regulators, such as the Federal Reserve Board (the Bank’s primary U.S. banking regulator), to adopt rules imposing additional restrictions. For example, U.S. banking regulators are authorized, among other things, to impose heightened prudential standards, such as increased capital, leverage and liquidity requirements, and limits on risky activities, on banks and their holding companies as well as certain non-bank financial institutions designated as systemically important. In imposing such heightened prudential standards on foreign-based bank holding companies, such as the Bank, the Federal Reserve Board is directed to take into account the principle of national treatment and of equality of competitive opportunity, and the extent to which the foreign bank is subject to home country standards comparable to those applied to financial companies in the United States.

The Dodd-Frank Act also restricts the ability of banking entities to sponsor or invest in private equity or hedge funds or engage in certain proprietary trading activities unrelated to serving customers (commonly referred to as the “**Volcker Rule**”). Among the exceptions to the Volcker Rule is an exemption for foreign banks, but generally only with respect to activity conducted solely outside the United States. Under recently proposed regulations, the exception would not apply if the Bank were to conduct trades through an exchange or clearing entity in the U.S. In addition, the Dodd-Frank Act will require enhanced regulation of the over-the-counter derivatives market, including, among other things, broadening the scope of derivatives instruments subject to regulation, subjecting certain derivatives market participants to registration, regulation and supervision, requiring clearing and exchange trading

and imposing capital and margin requirements on certain derivatives market participants. In addition, the Dodd-Frank Act will limit the ability of some uninsured U.S. branches of foreign banks to engage in swaps activities, requiring these activities to be conducted through affiliates.

While certain portions of the Dodd-Frank Act are effective immediately, other portions are subject to extended transition periods and a lengthy rulemaking process making it difficult at this time to assess the overall impact any final rules could have on the Bank or the financial industry as a whole. Implementation of the Dodd-Frank Act and subsequent rulemakings could result in increased costs and limitations on the Bank's business activities.

USE OF PROCEEDS

Unless otherwise specified in the applicable Supplement and, except with respect to Sustainable Notes, we intend to use the net proceeds we receive from the sale of the Notes for general corporate purposes. In addition, we expect that we or our affiliates may use a portion of the net proceeds to hedge our obligations under the Notes. We or our affiliates may close out our or their hedge on or before the maturity date.

With Respect to Sustainable Notes Only:

Sustainability Bond Framework

If specified in the applicable Pricing Supplement for a particular issuance of Notes, the net proceeds of such issue of the Notes will be used for the financing and/or refinancing, in whole or in part, of future and existing eligible businesses and eligible projects, including the Bank's own operations, that fall within the Eligible Categories (as defined below) in accordance with the National Bank of Canada Sustainability Bond Framework dated September 26, 2018 (as may be amended from time to time) and available on the following webpage: nbc.ca/content/dam/bnc/a-propos-de-nous/relations-investisseurs/fonds-propres-et-dette/nbc-sustainability-bond-framework.pdf (the "**Framework**") and such Notes, "**Sustainable Notes**"). The Framework addresses the four core components of the International Capital Market Association's Sustainability Bond Guidelines dated June 2018, namely:

- Use of Proceeds
- Project Selection and Evaluation Process
- Management of Proceeds
- Reporting.

The Bank's look-back period for any financing using the proceeds of Sustainable Notes is 36 months prior to the date of issuance of the relevant Sustainable Notes.

"**Eligible Categories**" consist of the following five categories (all as more fully described in the Framework):

- Renewable energy
- Sustainable buildings
- Low-carbon transportation
- Affordable housing
- Access to basic and essential services

Where a business derives 90% or more of revenues from activities in Eligible Categories, it will be considered as eligible for an allocation of the proceeds of the Sustainable Notes. In such instances, the use of proceeds can be used by the business for general purposes, so long as this financing does not fund expansion into activities falling outside the Eligible Categories.

The Bank shall select eligible businesses and eligible projects that fall within the Eligible Categories in accordance with the Framework, with evaluation and review conducted by the Bank's ESG programme officers and Sustainability Bond Committee (as described in more detail in the Framework).

The net proceeds of the Sustainable Notes will be deposited in the general funding accounts of the Bank. An amount equal to the net proceeds will be earmarked for allocation in a sustainability bond register (the "**Sustainability Bond Register**") (which the Bank will establish in relation to Sustainable Notes issued by the Bank for the purpose of recording the eligible businesses and eligible projects and allocation of the net proceeds from Sustainable Notes to such eligible businesses and eligible projects) in accordance with the Framework.

The Bank intends to maintain an aggregate amount of assets relating to eligible businesses and eligible projects that is at least equal to the aggregate net proceeds of all Sustainable Notes that are outstanding from time to time. The Bank intends to fully allocate the Sustainable Notes within a period of 18 months from issuance.

Until an amount equal to the net proceeds of the Notes have been fully allocated, such proceeds may be invested according to the Bank's normal liquidity management activities.

Within one year of the issuance of Sustainable Notes, the Bank expects to publish a sustainability bond report (the "**Sustainability Bond Report**") on its website. The Sustainability Bond Report will be updated every year until complete allocation of the proceeds from the relevant Sustainable Notes, and thereafter, as necessary in case of new developments.

The Sustainability Bond Report is expected to contain at least the following:

- (a) Confirmation that the use of proceeds of the relevant Sustainable Notes complies with the Framework
- (b) The amount of proceeds allocated to each Eligible Category
- (c) For each Eligible Category, one or more examples of eligible businesses and eligible projects financed, in whole or in part, by the proceeds obtained from the relevant Sustainable Notes, including their general details (brief description, location, stage — construction or operation)
- (d) The balance of unallocated net proceeds
- (e) Impact reporting elements as described below.

Where feasible, the Sustainability Bond Report will include qualitative and (if reasonably practicable) quantitative environmental and social performance indicators. Performance indicators may change from year to year.

Prior to the first anniversary of the issue of Sustainable Notes by the Bank, the Bank intends to instruct a qualified external reviewer to review the eligible businesses and eligible projects financed by Sustainable Notes issued by the Bank, in order to assess compliance with the Framework. It is expected that this review will be carried out annually until the full allocation of the net proceeds from the relevant Sustainable Notes. It is expected that the Bank will post the external review report on its website.

Pursuant to the Framework a second party opinion has been obtained from an appropriate second party opinion provider. The second party opinion is available on: nbc.ca/content/dam/bnc/a-propos-de-nous/relations-investisseurs/fonds-propres-et-dette/nbc-sustainability-bond-second-opinion.pdf.

ANY WEBSITES INCLUDED OR REFERRED TO IN THIS OFFERING CIRCULAR ARE FOR INFORMATION PURPOSES ONLY AND DO NOT FORM PART OF THIS OFFERING CIRCULAR.

DESCRIPTION OF THE NOTES

General Terms of the Notes

We intend to issue Notes from time to time in one or more series (each, a “**Series**”) having an aggregate amount of up to U.S.\$3,500,000,000.

The specific terms of the Notes of any offering in any Series issued under this Offering Circular will be set forth in the applicable Supplement. This section describes only certain terms that may or may not apply to the Notes that you purchase. As discussed above, we expect to issue additional types of Notes, the terms of which will be described in the applicable Supplement. This Offering Circular may not be used to consummate sales of any Notes unless accompanied by the applicable Supplement or Supplements relating to such Notes.

The Notes will be issued under an indenture dated as of July 10, 2015 (the “**Base Indenture**”), as amended and supplemented by a First Supplemental Indenture dated as of June 9, 2020 (the “**First Supplemental Indenture**”), and, together with the Base Indenture, as may be further amended or supplemented from time to time, the “**Indenture**”) each among the Bank, as Issuer and as Calculation Agent, National Bank of Canada, New York Branch (“**NBCNY**”), as Guarantor, and The Bank of New York Mellon, as Trustee (the “**Trustee**”), as Paying Agent (the “**Paying Agent**”) and as Note Registrar (the “**Note Registrar**”), in respect of any Notes with respect to which it is named as such in the applicable Supplement.

The summaries in this Offering Circular of certain provisions of the Notes, the Guarantee and the Indenture do not purport to be complete and such summaries are subject to the detailed provisions of the Indenture to which reference is hereby made for a full description of such provisions, including the definition of certain terms used, and for other information regarding the Notes and the Guarantee.

A copy of the Indenture can be obtained by writing to us at the following address: 600 De La Gauchetière Street West, 24th Floor, Montréal, Québec, Canada H3B 4L2, Attention: Investor Relations, or by calling us at 1-866-517-5455.

Status of the Notes

The Notes will constitute deposits for purposes of the Bank Act and will constitute legal, valid and binding direct, unconditional, unsubordinated and unsecured obligations of the Bank and will rank equally with all deposit liabilities of the Bank without any preference among themselves (save for any applicable statutory provisions) and equally with all other present and future unsecured and unsubordinated obligations of the Bank, from time to time outstanding except for certain governmental claims. Notes that are Bail-inable Notes (as defined herein) are subject to the Canadian bank resolution powers as discussed under “*Description of the Notes—Canadian Bank Resolution Powers*”.

The Notes will not be deposits insured under either the U.S. Federal Deposit Insurance Act or the *Canada Deposit Insurance Corporation Act* (Canada).

Guarantee

Pursuant to the Guarantee under the Indenture, NBCNY unconditionally and irrevocably guarantees to the holders of the Notes the payments of the amount (if any) due and payable on the Notes at maturity, redemption or acceleration (the “**Redemption Amount**”), together with interest (if any) or other amounts payable on the Notes, if such amounts have not been received by the holders at the time such payment is due and payable (after giving effect to all the applicable cure periods). The Guarantee (i) is a direct, general, unconditional, unsecured and unsubordinated obligation of the Guarantor and ranks equally with all other present and future unconditional, unsecured and unsubordinated obligations of the Guarantor, except those mandatorily preferred by law, (ii) is a continuing guarantee, (iii) is irrevocable and (iv) is a guarantee of payment of the amounts due and payable under the Notes and not of collection. For more information regarding the Guarantee, see “*The Guarantee*.”

Form and Title of Notes

The Notes will be issued as one or more Global Notes registered in the name of a nominee of DTC, and deposited on behalf of the purchaser (or such other account as the purchaser may direct) with The Bank of New York

Mellon as custodian for DTC. Purchasers of Notes will have a book-entry beneficial interest in the Global Notes. The beneficial interest in the Global Notes will be held through the Direct Participants and Indirect Participants (as defined below), including, if applicable, CDS, Euroclear and Clearstream. When we refer to “you” in this Offering Circular, we mean those who invest in the beneficial interest of the Notes being offered by this Offering Circular; when we refer to “your Notes” in this Offering Circular, we mean the Notes in which you hold a direct or indirect interest.

We will issue Notes only as registered Notes, which means that the Note Registrar will keep a register (the “**Register**”) for the registration and registration of transfers of the Notes. Each Note will be numbered serially with an identifying number that will be recorded in the Register. The holder of any Note will (except as otherwise required by law) be treated as its absolute owner for all purposes (whether or not it is overdue and regardless of any notice of ownership, trust or any interest in it, any writing on it, or its theft or loss), and no person will be liable for so treating the holder.

Payments of Interest, Additional Amounts and Redemption Amount

Method of Payment

The Bank will remit to the Paying Agent, in its office in New York, New York, for further remittance to the holders of the physical notes and to DTC for the Global Notes, the Redemption Amount (if any), interest or other amounts payable on the Notes. Upon receipt in full of such amounts by the holders of the physical notes and by DTC with respect to the Global Notes, the Bank and the Guarantor will be discharged from any further obligation with regard to such payments. No person other than the holder of such Global Note shall have any claim against the Bank or, as the case may be, the Guarantor in respect of any payments due on that Global Note.

DTC’s practice is to credit Direct Participants’ (as defined below) accounts on the payment date in accordance with their respective holdings shown on DTC’s records unless DTC has reason to believe that it will not receive payment on the payment date. Payments by Direct Participants and Indirect Participants (as defined below) to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in “street name,” and will be the responsibility of such Participant and not of DTC, the Trustee, the Bank or the Guarantor, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of the Redemption Amount, interest or other amounts payable on the Global Notes to DTC is the responsibility of ours, the Guarantor, or the Trustee, disbursement of such payments to Direct Participants is the responsibility of DTC, and disbursement of such payments to the Beneficial Owners shall be the responsibility of Direct Participants and Indirect Participants through whom such Beneficial Owners own interests in the Global Notes.

Presentation of Physical Notes

Payments of the Redemption Amount (if any), in respect of physical notes, will be made in the manner provided above against surrender (or, in the case of partial payment of any sum due, endorsement) of the physical notes.

Imposition of Exchange Controls and other Limitations

If the Bank reasonably determines that a payment on the Notes cannot be made in the Specified Currency due to: (A) restrictions imposed by the government of such currency or any agency or instrumentality thereof or any monetary authority in such country; or (B) the Specified Currency no longer being used by the government of the country issuing such currency or for the settlement of transactions by public institutions in that country or within the international banking community, then in the case of (A) above, the Bank shall make such payment in U.S. dollars and in the case of (B) above, the Bank at its discretion, shall make such payment either in U.S. dollars or in another currency available to the Bank for such purposes in connection with the Notes (a “**Substitute Currency**”), subject in any case to any applicable laws and regulations. The amount of U.S. dollars or Substitute Currency to be paid in connection with any payment shall be the amount of U.S. dollars or Substitute Currency, as applicable, that could be purchased by the Bank with the amount of the relevant currency payable on the date the payment is due, at the rate for sale in financial transactions of U.S. dollars or Substitute Currency (for delivery in the Financial Center of the Specified Currency two Business Days later) quoted by that bank at 10:00 a.m. local time in the Financial Center of the relevant currency, on the second Business Day prior to the date the payment is due or, if no such rate is available at an appropriate market rate of exchange determined in the reasonable discretion of the Calculation Agent.

Interest

If the applicable Supplement specifies that Notes of any offering in any Series shall bear interest, (“**Interest Paying Notes**”), interest will be payable on each Interest Payment Date, and will bear interest at either:

- a fixed rate specified in the applicable Supplement (a “**Fixed Rate Note**”); or
- a floating rate specified in the applicable Pricing Supplement determined by reference to an interest rate basis, which may be adjusted by a spread (as defined below) (a “**Floating Rate Note**”) determined:
 - (i) on the basis of a reference rate appearing on the agreed screen page of a commercial quotation service;
 - (ii) on the same basis as the floating rate that would have applied if the Issuer had entered into a schedule and confirmation and credit support annex, if applicable, for the relevant Series of Notes in the relevant Specified Currency entered into by the Bank and the holder of such Notes incorporating the ISDA Definitions;
 - (iii) for SOFR Rate Notes (as defined below), on the basis of a base rate determined in accordance with the provisions described under “*Description of the Notes—Interest—Floating Rate Notes—SOFR Rate Notes;*” or
 - (iv) on such other basis as may be agreed between the Bank and the relevant Agent(s),

as set out in the applicable Pricing Supplement. The Margin (if any) relating to such floating rate will be agreed between the Bank and the relevant Agent(s) for each Series of Floating Rate Notes as set out in the applicable Pricing Supplement.

Unless otherwise provided in the applicable Supplement, each Interest Paying Note will bear interest from the relevant Interest Commencement Date or from the most recent date on which interest on that Note has been paid at the fixed or floating rate specified in the applicable Supplement until the Redemption Amount has been paid or made available for payment at maturity, redemption or repayment, as applicable, of the Notes. Interest on the Interest Paying Notes will be payable on each Interest Payment Date (except as described in the applicable Supplement) and at maturity, redemption or repayment, as applicable. Unless otherwise indicated in the applicable Supplement, interest payments in respect of the Interest Paying Notes will equal the amount of interest accrued during the Interest Period to which such Interest Payment Date relates. If the maturity of the Notes of any Series is accelerated, interest will be paid on such Notes through and excluding the related date of accelerated payment.

Unless otherwise specified in the applicable Supplement, the “**record date**” in respect of each Interest Payment Date will be the close of business on the date that is three Business Days preceding such Interest Payment Date.

In respect of each Interest Payment Date, interest will be payable to the person in whose name a Note is registered in the Register at the close of business on the related record date, except that:

- if we fail to pay the interest due on an Interest Payment Date, the defaulted interest will be paid to the person in whose name the Note is registered in the Register at the close of business on the record date we will establish for the payment of defaulted interest; and
- interest payable at maturity, redemption or repayment will be payable to the holders in whose name the Notes are registered in the Register with respect to the Physical Notes and to DTC with respect to the Global Notes.

(a) **Fixed Rate Notes**

Each Fixed Rate Note will bear interest at the rate or rates per annum specified in the applicable Supplement in arrears on the Interest Payment Dates specified in the applicable Supplement.

(b) Floating Rate Notes

Each Floating Rate Note will bear interest at the rate specified in the applicable Supplement in arrears on either:

- the Specified Interest Payment Date(s) in each year specified in the applicable Supplement (each, an “**Interest Payment Date**”); or
- if no Specified Interest Payment Date(s) are specified in the applicable Supplement, each date (each, an “**Interest Payment Date**”) which falls the number of months or other period specified as the “Specified Period” in the applicable Supplement after the preceding Interest Payment Date or, in the case of the first Interest Payment Date, after the Interest Commencement Date.

The Rate of Interest will be specified in, or calculated or determined in accordance with the provisions of, the applicable Supplement.

(i) Screen Rate Determination

Where the “Screen Rate Determination” is specified in the applicable Pricing Supplement, the Rate of Interest for each Interest Period will be determined by the Calculation Agent on the following basis:

- (A) the Calculation Agent will determine the rate for deposits or, as the case may require, the arithmetic mean (rounded, if necessary, to the nearest ten thousandth of a percentage point, 0.00005 being rounded upwards) of the rates for deposits in the relevant currency for a period of the duration of the relevant Interest Period on the Relevant Screen Page as of the Relevant Time on the relevant Interest Determination Date;
- (B) if, on any Interest Determination Date, no such rate for deposits so appears or, as the case may be, if fewer than two such rates for deposits so appear or if the Relevant Screen Page is unavailable, the Calculation Agent will request appropriate quotations and will determine the arithmetic mean (rounded as described above) of the rates at which deposits in the relevant currency are offered by the Reference Banks at approximately the Relevant Time on the Interest Determination Date to prime banks in the London interbank market in the case of LIBOR for a period of the duration of the relevant Interest Period and in an amount that is representative for a single transaction in the relevant market at the relevant time;
- (C) if, on any Interest Determination Date, only two or three rates are so quoted, the Calculation Agent will determine the arithmetic mean (rounded as described above) of the rates so quoted; or
- (D) if fewer than two rates are so quoted, the Calculation Agent will determine the arithmetic mean (rounded as described above) of the rates quoted by four major banks in the Financial Center as selected by the Calculation Agent, at approximately 11.00 a.m. (Financial Center time) on the first day of the relevant Interest Period for loans in the relevant currency to leading European banks for a period for the duration of the relevant Interest Period and in an amount that is representative for a single transaction in the relevant market at the relevant time,

and the Rate of Interest applicable to such Notes during each Interest Period will be the sum of the Margin specified in the applicable Pricing Supplement and the rate or, as the case may be, the arithmetic mean (rounded as described above) of the rates so determined, provided however that if the Calculation Agent is unable to determine a rate or, as the case may be, an arithmetic mean of rates in accordance with the above provisions in relation to any Interest Period, the Rate of Interest applicable to such Notes during such Interest Period will be the sum of the Margin and the rate or, as the case may be, the arithmetic mean (rounded as described above) of the rates determined in relation to such Notes in respect of the last preceding Interest Period.

Benchmark Transition Event for U.S. dollar LIBOR Notes

Notwithstanding the above, with respect to U.S. dollar-denominated LIBOR Floating Rate Notes, if the Issuer or its designee determines on or prior to the relevant Interest Determination Date for U.S. dollar LIBOR Notes that a Benchmark Transition Event and its related Benchmark Replacement Date (each as defined below) have occurred with respect to U.S. dollar LIBOR, then the provisions set forth below under the heading “*Effect of Benchmark*”

Transition Event for U.S. dollar LIBOR Notes,” which we refer to as the benchmark replacement provisions, will thereafter apply to all determinations of the rate of interest payable on such U.S. dollar LIBOR Note.

For the avoidance of doubt, in accordance with the benchmark replacement provisions, after a Benchmark Transition Event and its related Benchmark Replacement Date have occurred, the amount of interest that will be payable for each interest period on the U.S. dollar LIBOR Notes will be an annual rate equal to the sum of the Benchmark Replacement (as defined below) and the applicable margin.

Effect of Benchmark Transition Event for U.S. dollar LIBOR Notes

(a) Benchmark Replacement. If the Issuer or its designee determines that a Benchmark Transition Event and its related Benchmark Replacement Date have occurred prior to the Reference Time in respect of any determination of the Benchmark on any date, the Benchmark Replacement will replace the then-current Benchmark for all purposes relating to the U.S. dollar LIBOR Notes in respect of such determination on such date and all determinations on all subsequent dates.

(b) Benchmark Replacement Conforming Changes. In connection with the implementation of a Benchmark Replacement, the Issuer or its designee will have the right to make Benchmark Replacement Conforming Changes from time to time. No such change shall affect the Trustee’s or the Calculation Agent’s own rights, duties or immunities under the Indenture or otherwise without their consent.

(c) Decisions and Determinations. Any determination, decision or election that may be made by the Issuer or its designee pursuant to the benchmark replacement provisions described herein, including any determination with respect to a tenor, rate or adjustment or of the occurrence or non-occurrence of an event, circumstance or date and any decision to take or refrain from taking any action or any selection:

- will be conclusive and binding absent manifest error, provided that neither the Trustee nor the Calculation Agent shall have any responsibility to determine whether any manifest error has occurred and may conclusively assume that no manifest error has occurred and shall suffer no liability in so assuming;
- if made by the Issuer, will be made in the Issuer’s sole discretion;
- if made by the Issuer’s designee, will be made after consultation with the Issuer, and the designee will not make any such determination, decision or election to which the Issuer reasonably objects; and
- notwithstanding anything to the contrary in the Indenture or the Notes, shall become effective without consent from the holders of the Notes or any other party.

Any determination, decision or election pursuant to the benchmark replacement provisions not made by the Issuer’s designee will be made by the Issuer on the basis as described above. The designee shall have no liability for not making any such determination, decision or election. In addition, the Issuer may designate an entity (which may be its affiliate) to make any determination, decision or election that the Issuer has the right to make in connection with the benchmark replacement provisions set forth above. If the Issuer’s designee is unable to determine whether a Benchmark Transition Event has occurred and/or has not selected the Benchmark Replacement, then, in such case, the Issuer shall make such determination or select the Benchmark Replacement, as the case may be. If the Benchmark Replacement has not yet been determined as of any Interest Determination Date in accordance with the benchmark replacement provisions and the order set forth in the definition of “Benchmark Replacement”, then the interest rate for the next Interest Determination Date will be set equal to the interest rate on the last Interest Determination Date.

Certain Defined Terms. As used herein:

“*Benchmark*” means, initially, U.S. dollar LIBOR; provided that if a Benchmark Transition Event and its related Benchmark Replacement Date have occurred with respect to U.S. dollar LIBOR or the then-current Benchmark, then “*Benchmark*” means the applicable Benchmark Replacement.

“*Benchmark Replacement*” means the Interpolated Benchmark with respect to the then-current Benchmark, plus the Benchmark Replacement Adjustment for such Benchmark; provided that if the Issuer or its designee cannot determine the Interpolated Benchmark as of the Benchmark Replacement Date, then “*Benchmark Replacement*” means the first alternative set forth in the order below that can be determined by the Issuer or its designee, as of the Benchmark Replacement Date:

- (1) the sum of: (a) Term SOFR and (b) the Benchmark Replacement Adjustment;
- (2) the sum of: (a) Compounded SOFR and (b) the Benchmark Replacement Adjustment;
- (3) the sum of: (a) the alternate rate of interest that has been selected or recommended by the Relevant Governmental Body as the replacement for the then-current Benchmark for the applicable Corresponding Tenor and (b) the Benchmark Replacement Adjustment;
- (4) the sum of: (a) the ISDA Fallback Rate and (b) the Benchmark Replacement Adjustment; and
- (5) the sum of: (a) the alternate rate of interest that has been selected by the Issuer or its designee as the replacement for the then-current Benchmark for the applicable Corresponding Tenor giving due consideration to any industry-accepted rate of interest as a replacement for the then-current Benchmark for U.S. dollar-denominated floating rate notes at such time and (b) the Benchmark Replacement Adjustment.

“*Benchmark Replacement Adjustment*” means the first alternative set forth in the order below that can be determined by the Issuer or its designee as of the Benchmark Replacement Date:

- (1) the spread adjustment, or method for calculating or determining such spread adjustment, (which may be a positive or negative value or zero) that has been selected or recommended by the Relevant Governmental Body for the applicable Unadjusted Benchmark Replacement;
- (2) if the applicable Unadjusted Benchmark Replacement is equivalent to the ISDA Fallback Rate, then the ISDA Fallback Adjustment; or
- (3) the spread adjustment (which may be a positive or negative value or zero) that has been selected by the Issuer or its designee giving due consideration to any industry-accepted spread adjustment, or method for calculating or determining such spread adjustment, for the replacement of the then-current Benchmark with the applicable Unadjusted Benchmark Replacement for U.S. dollar-denominated floating rate notes at such time.

“*Benchmark Replacement Conforming Changes*” means, with respect to any Benchmark Replacement, any technical, administrative or operational changes (including changes to the definition of “interest period”, timing and frequency of determining rates and making payments of interest, rounding of amounts or tenors (including changes to the definition of “Corresponding Tenor” solely when such tenor is longer than the Interest Period), and other administrative matters) that the Issuer or its designee decides may be appropriate to reflect the adoption of such Benchmark Replacement in a manner substantially consistent with market practice (or, if the Issuer or its designee decide that adoption of any portion of such market practice is not administratively feasible or if the Issuer or its designee determine that no market practice for use of the Benchmark Replacement exists, in such other manner as the Issuer or its designee determines is reasonably practicable).

“*Benchmark Replacement Date*” means the earliest to occur of the following events with respect to the then-current Benchmark:

- (1) in the case of clause (1) or (2) of the definition of “*Benchmark Transition Event*,” the later of (a) the date of the public statement or publication of information referenced therein and (b) the date on which the administrator of the Benchmark permanently or indefinitely ceases to provide the Benchmark; or
- (2) in the case of clause (3) of the definition of “*Benchmark Transition Event*,” the date of the public statement or publication of information referenced therein.

For the avoidance of doubt, if the event giving rise to the Benchmark Replacement Date occurs on the same day as, but earlier than, the Reference Time in respect of any determination, the Benchmark Replacement Date will be deemed to have occurred prior to the Reference Time for such determination.

“*Benchmark Transition Event*” means the occurrence of one or more of the following events with respect to the then-current Benchmark:

- (1) a public statement or publication of information by or on behalf of the administrator of the Benchmark announcing that such administrator has ceased or will cease to provide the Benchmark, permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide the Benchmark;
- (2) a public statement or publication of information by the regulatory supervisor for the administrator of the Benchmark, the central bank for the currency of the Benchmark, an insolvency official with jurisdiction over the administrator for the Benchmark, a resolution authority with jurisdiction over the administrator for the Benchmark or a court or an entity with similar insolvency or resolution authority over the administrator for the Benchmark, which states that the administrator of the Benchmark has ceased or will cease to provide the Benchmark permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide the Benchmark; or
- (3) a public statement or publication of information by the regulatory supervisor for the administrator of the Benchmark announcing that the Benchmark is no longer representative.

“*Compounded SOFR*” means the compounded average of SOFRs for the applicable Corresponding Tenor, with the rate, or methodology for this rate, and conventions for this rate being established by the Issuer or its designee in accordance with:

- (1) the rate, or methodology for this rate, and conventions for this rate selected or recommended by the Relevant Governmental Body for determining compounded SOFR; provided that:
- (2) if, and to the extent that, the Issuer or its designee determine that Compounded SOFR cannot be determined in accordance with clause (1) above, then the rate, or methodology for this rate, and conventions for this rate that have been selected by the Issuer or its designee giving due consideration to any industry-accepted market practice for U.S. dollar-denominated floating rate notes at such time.

For the avoidance of doubt, the calculation of Compounded SOFR shall exclude the Benchmark Replacement Adjustment and the applicable margin.

“*Corresponding Tenor*” with respect to a Benchmark Replacement means a tenor (including overnight) having approximately the same length (disregarding business day adjustment) as the applicable tenor for the then-current Benchmark.

“*Federal Reserve Bank of New York’s Website*” means the website of the FRBNY at <http://www.newyorkfed.org>, or any successor source.

“*Interpolated Benchmark*” with respect to the Benchmark means the rate determined for the Corresponding Tenor by interpolating on a linear basis between: (1) the Benchmark for the longest period (for which the Benchmark is available) that is shorter than the Corresponding Tenor and (2) the Benchmark for the shortest period (for which the Benchmark is available) that is longer than the Corresponding Tenor.

“*ISDA Definitions*” means the 2006 ISDA Definitions published by ISDA or any successor thereto, as amended or supplemented from time to time, or any successor definitional booklet for interest rate derivatives published from time to time.

“*ISDA Fallback Adjustment*” means the spread adjustment (which may be a positive or negative value or zero) that would apply for derivatives transactions referencing the ISDA Definitions to be determined upon the occurrence of an index cessation event with respect to the Benchmark for the applicable tenor.

“*ISDA Fallback Rate*” means the rate that would apply for derivatives transactions referencing the ISDA Definitions to be effective upon the occurrence of an index cessation date with respect to the Benchmark for the applicable tenor excluding the applicable ISDA Fallback Adjustment.

“*Reference Time*” with respect to any determination of the Benchmark means (1) if the Benchmark is U.S. dollar LIBOR, 11:00 a.m. (London time) on the relevant LIBOR Interest Determination Date, and (2) if the Benchmark is not U.S. dollar LIBOR, the time determined by the Issuer or its designee in accordance with the Benchmark Replacement Conforming Changes.

“*Relevant Governmental Body*” means the Federal Reserve Board and/or the FRBNY, or a committee officially endorsed or convened by the Federal Reserve Board and/or the FRBNY or any successor thereto.

“*SOFR*” with respect to any day means the secured overnight financing rate published for such day by the FRBNY, as the administrator of the benchmark, (or a successor administrator) on the Federal Reserve Bank of New York’s Website.

“*Term SOFR*” means the forward-looking term rate for the applicable Corresponding Tenor based on SOFR that has been selected or recommended by the Relevant Governmental Body.

“*Unadjusted Benchmark Replacement*” means the Benchmark Replacement excluding the Benchmark Replacement Adjustment.

(ii) ***ISDA Rate Notes***

Where “ISDA Determination” is specified in the applicable Supplement as the manner in which the Rate of Interest is to be determined, the Rate of Interest for each Interest Period will be the relevant ISDA Rate plus or minus (as indicated in the applicable Pricing Supplement) the Margin, if any. “**ISDA Rate**” for an Interest Period means a rate equal to the Fixed Rates, Fixed Amounts, Fixed Prices, Floating Rates, Floating Amounts or Floating Prices, as the case may be, or as otherwise specified in the applicable Supplement, as would have applied (regardless of any event of default or termination event or tax event thereunder) if the Bank had entered into a schedule and confirmation and credit support annex, if applicable, in respect of the relevant Series of Notes with the holder of such Note under the terms of an agreement to which the ISDA Definitions applied and under which:

- the Fixed Rate Payer, Fixed Amount Payer, Floating Rate Payer or, as the case may be, Floating Amount Payer is the Bank (as specified in the applicable Supplement);
- the Effective Date is the Interest Commencement Date;
- the Floating Rate Option (which may refer to a Rate Option or a Price Option, specified in the ISDA Definitions) is as specified in the applicable Supplement;
- the Designated Maturity is the period specified in the applicable Supplement;
- the Bank is the Calculation Agent;
- the Calculation Periods are the Interest Periods;
- the Payment Dates are the Interest Payment Dates;
- the relevant Reset Date is either (i) if the applicable Floating Rate Option is based on LIBOR, the first day of that Interest Period or (ii) in any other case, as specified in the applicable Supplement;
- the Calculation Amount is the principal amount of such Note;
- the Day Count Fraction applicable to the calculation of any amount is that specified in the applicable Supplement or, if none is so specified, as may be determined in accordance with the ISDA Definitions;
- the Business Day Convention applicable to any date is that specified in the applicable Supplement or, if none is so specified, as may be determined in accordance with the ISDA Definitions; and

- the other terms are as specified in the applicable Supplement.

For the purposes of this section (b)(ii), “Floating Rate,” “Calculation Agent,” “Floating Rate Option,” “Designated Maturity” and “Reset Date” have the meanings given to those terms in the ISDA Definitions.

(iii) SOFR Rate Notes

Where the applicable Pricing Supplement relates to Notes that bear interest at a rate derived from SOFR, the manner in which the interest rate for such SOFR Rate Note shall be determined shall be as follows, unless otherwise provided for or modified in the applicable Pricing Supplement. The applicable Pricing Supplement shall state and describe that such Note is a SOFR Rate Note, the Base Rate, the Margin, the Interest Periods, the Interest Payment Dates, Business Day Convention, any other terms relating to the particular method of calculating the interest rate for such Note (including any applicable payment delay, lockout or suspension period, lookback or observation shift) and any other terms applicable specifically to such SOFR Rate Note.

Base Rate. The interest rate on each SOFR Rate Note for each Interest Period will be determined by reference to an interest rate basis (a “**Base Rate**”), plus or minus a number of basis points (one basis point equals one-hundredth of a percentage point) (the “**Margin**” or “**Spread**”), if any, until the principal thereof is paid or made available for payment. The applicable Pricing Supplement will designate the Margin and which of the following Base Rates is applicable to the related SOFR Rate Note (each such Base Rate, a “**SOFR Rate**”):

- (a) Compounded SOFR (as defined below) (a “**Compound SOFR Note**”);
- (b) Average SOFR (as defined below) (an “**Average SOFR Note**”);
- (c) Term SOFR (as defined below) (a “**Term SOFR Note**”); or
- (d) such other Base Rate as may be specified in such Pricing Supplement and agreed in advance by the Calculation Agent.

The Base Rate for the Interest Period plus the Spread, if any, are referred to herein as the “**Interest Rate.**” The applicable Pricing Supplement will also specify a maximum Interest Rate, or “ceiling” or “cap,” that the Interest Rate may not exceed, and also a minimum Interest Rate, or “floor,” that the Interest Rate may not fall below. Notwithstanding the previous sentence, the Interest Rate for any Interest Period shall not be less than zero.

Compound SOFR Notes

Unless otherwise provided for or modified in the applicable Pricing Supplement, Compound SOFR Notes will bear interest at a rate per annum equal to Compounded SOFR (as defined below) plus the Spread.

Each “spread” is the number of basis points (one one-hundredth of a percentage point) to be added to the accrued interest compounding factor for an Interest Period.

A. Compound SOFR Notes based on a SOFR Index

The amount of interest accrued and payable on the Compound SOFR Notes for each Interest Period will be calculated by the Calculation Agent on each SOFR Interest Payment Determination Date (as defined below) and will be equal to the outstanding principal amount of such Notes multiplied by the product of:

- (a) the interest rate for the relevant Interest Period
- multiplied by -
- (b) the quotient of the actual number of calendar days in such Observation Period (as defined below) divided by 360.

Notwithstanding the foregoing, in no event will the Interest Rate payable for any Interest Period be less than zero percent.

Unless otherwise specified or modified in the applicable Pricing Supplement, on each Interest Payment Date, accrued interest will be paid for the most recently completed Interest Period. With respect to any Interest Period, the accrued interest compounding factor or “**Compounded SOFR**” means the rate of return computed in accordance with the following formula (with the resulting percentage rounded, if necessary, to the nearest one hundred-thousandth of a percentage point, with 0.000005 being rounded upwards to 0.00001):

$$\left(\frac{SOFR\ Index_{End}}{SOFR\ Index_{Start}} - 1 \right) \times \frac{360}{d}$$

Where:

“*SOFR Index_{Start}*” = The SOFR Index value on the day which is two U.S. Government Securities Business Days (or such number of U.S. Government Securities Business Days as specified in the applicable Pricing Supplement) preceding the first date of the relevant Interest Period;

“*SOFR Index_{End}*” = The SOFR Index value on the SOFR Interest Payment Determination Date relating to the applicable Interest Payment Date (or in the final Interest Period, the maturity date); and

“*d*” is the number of calendar days in the relevant Observation Period.

For purposes of determining Compounded SOFR immediately above, “**SOFR Index**” means, with respect to any U.S. Government Securities Business Day:

- (1) the SOFR Index published for such U.S. Government Securities Business Day as such value appears on the New York Federal Reserve’s Website at 3:00 p.m. (New York time) on such U.S. Government Securities Business Day (the “**SOFR Index Determination Time**”); or
- (2) if the SOFR Index specified in (1) above does not so appear, unless both a Benchmark Transition Event and its related Benchmark Replacement Date have occurred, the SOFR Index as published in respect of the first preceding U.S. Government Securities Business Day for which the SOFR Index was published on the New York Federal Reserve’s Website.

“**SOFR Interest Payment Determination Date**” means the day that is two U.S. Government Securities Business Days (or such number of U.S. Government Securities Business Days as specified in the applicable Pricing Supplement) prior to the Interest Payment Date.

“**Observation Period**” means, in respect of each Interest Period, the period from, and including, the date two U.S. Government Securities Business Days (or such number of U.S. Government Securities Business Days as specified in the applicable Pricing Supplement) preceding the first date in such Interest Period to, but excluding, the date two U.S. Government Securities Business Days (or such number of U.S. Government Securities Business Days as specified in the applicable Pricing Supplement) preceding the Interest Payment Date for such Interest Period.

B. Compound SOFR Notes (without reference to a SOFR Index)

The amount of interest accrued and payable on the Compound SOFR Notes for each Interest Period will be calculated by the Calculation Agent on each SOFR Interest Determination Date (as defined below) and will be equal to the outstanding principal amount of such Notes multiplied by the product of:

- (a) the sum of the accrued interest compounding factor plus the spread for the relevant Interest Period,
- multiplied by -
- (b) the quotient obtained by dividing the actual number of calendar days in such Interest Period by 360.

Notwithstanding the foregoing, in no event will the Interest Rate payable for any Interest Period be less than zero percent.

Unless otherwise specified or modified in the applicable Pricing Supplement, on each Interest Payment Date, accrued interest will be paid for the most recently completed Interest Period. With respect to any Interest Period, the accrued interest compounding factor or “**Compounded SOFR**” means the rate of return of a daily compound interest investment computed in accordance with the following formula (with the resulting percentage rounded, if necessary, to the nearest one hundred-thousandth of a percentage point, with 0.000005 being rounded upwards to 0.00001):

$$\left[\prod_{i=1}^{d_0} \left(1 + \frac{SOFR_i \times n_i}{360} \right) - 1 \right] \times \frac{360}{d}$$

Where:

“ d_0 ”, for any Interest Period, is the number of U.S. Government Securities Business Days in the relevant Interest Period.

“ i ” is a series of whole numbers from one to d_0 , each representing the relevant U.S. Government Securities Business Days in chronological order from, and including, the first U.S. Government Securities Business Day in the relevant Interest Period.

“ $SOFR_i$ ”, for any U.S. Government Securities Business Day “ i ” in the relevant Interest Period, is a reference rate equal to SOFR in respect of that day.

“ n_i ” is the number of calendar days in the relevant Interest Period from, and including, the U.S. Government Securities Business Day “ i ” to, but excluding, the following U.S. Government Securities Business Day.

“ d ” is the number of calendar days in the relevant Interest Period.

“**SOFR Interest Determination Date**” means the day that is the number of U.S. Government Securities Business Days prior to the Interest Payment Date in respect of the relevant Interest Period, as specified in the applicable Pricing Supplement.

In addition to defining the relevant Interest Periods and Interest Payment Dates, the applicable Pricing Supplement shall specify and describe, as applicable, any relevant interest commencement date, interest period end date, interest determination date, index maturity, rate cut-off date, any other terms relating to the particular method of calculating interest on the Compound SOFR Note (including any applicable payment delay, lockout or suspension period, lookback or observation shift) and any other terms applicable specifically to such Compound SOFR Note.

Average SOFR Notes

Unless otherwise provided for or modified in the applicable Pricing Supplement, Average SOFR Notes will bear interest at a rate per annum equal to Average SOFR (as defined below) plus the Spread.

With respect to any Interest Period, unless otherwise specified or modified in the applicable Pricing Supplement, “**Average SOFR**” will be calculated by the Calculation Agent on each SOFR Interest Determination Date (as defined below) as follows (with the resulting percentage being rounded, if necessary, to the nearest one hundred-thousandth of a percentage point, with 0.000005 being rounded upwards to 0.00001):

$$\frac{\sum_{i=1}^{d_0} SOFR_i \times n_i}{d}$$

Where:

“ d_0 ”, for any Interest Period, means the number of U.S. Government Securities Business Days (as defined below) in the relevant Interest Period;

“ i ” means a series of whole numbers from one to d_0 , each representing the relevant U.S. Government Securities Business Days in chronological order from, and including, the first U.S. Government Securities Business Day in the relevant Interest Period;

“*SOFR i* ”, for any U.S. Government Securities Business Day “ i ” in the relevant Interest Period, is a reference rate equal to SOFR in respect of that day.

“ n_i ” is the number of calendar days in the relevant Interest Period from, and including, the U.S. Government Securities Business Day “ i ” to, but excluding, the following U.S. Government Securities Business Day.

“ d ” is the number of calendar days in the relevant Interest Period.

“**SOFR Interest Determination Date**” means the day that is the number of U.S. Government Securities Business Days prior to the Interest Payment Date in respect of the relevant Interest Period, as specified in the applicable Pricing Supplement.

In addition to the Interest Periods and the Interest Payment Dates, the applicable Pricing Supplement shall specify and describe, as applicable, any relevant interest commencement date, interest period end date, interest determination date, index maturity, rate cut-off date, any other terms relating to the particular method of calculating interest on the Average SOFR Note (including any applicable payment delay, lockout or suspension period, lookback or observation shift) and any other terms applicable specifically to such Average SOFR Note.

Term SOFR Notes

Unless otherwise provided for or modified in the applicable Pricing Supplement, Term SOFR Notes will bear interest at a rate per annum equal to Term SOFR (as defined below) (or Specified-Tenor Term SOFR (as defined below)), plus the Spread.

“**Term SOFR**” means the forward-looking term rate for the applicable Corresponding Tenor based on SOFR that has been selected or recommended by the Relevant Governmental Body.

“**Specified-Tenor Term SOFR**” means Term SOFR for the Corresponding Tenor, that is published by the Term SOFR Administrator at the Reference Time for any Interest Period, as determined by the Bank or its designee after giving effect to the Specified-Tenor Term SOFR Conventions.

“**Term SOFR Administrator**” means any entity designated by the Relevant Governmental Body as the administrator of Term SOFR (or any successor administrator).

“**Corresponding Tenor**” means (i) with respect to Term SOFR, three months or such number of months specified in the applicable Pricing Supplement, and (ii) with respect to a Benchmark Replacement, a tenor (including overnight) having approximately the same length (disregarding business day adjustment) as the applicable tenor for the then-current Benchmark.

“**Reference Time**” with respect to any determination of the Benchmark means (i) if the Benchmark is Specified-Tenor Term SOFR, the time determined by the Bank or its designee after giving effect to the Specified-Tenor Term SOFR Conventions, and (ii) if the Benchmark is not the Specified-Tenor Term SOFR, the time determined by the Bank or its designee after giving effect to the Benchmark Replacement Conforming Changes.

“**Specified-Tenor Term SOFR Conventions**” means any determination, decision, or election with respect to any technical, administrative, or operational matter (including with respect to the manner and timing of the publication of Specified-Tenor Term SOFR, or changes to the definition of “interest period,” timing and frequency of determining Specified-Tenor Term SOFR with respect to each interest period and making payments of interest, rounding of amounts or tenors, and other administrative matters) that the Bank or its designee determines may be appropriate to reflect the use of Specified-Tenor Term SOFR as the Benchmark in a manner substantially consistent with market practice (or, if the Bank or its designee determines that adoption of any portion of such market practice is not administratively feasible or if the Bank or its designee determines that no market practice for the use of

Specified-Tenor Term SOFR exists, in such other manner as the Bank or its designee determines is reasonably necessary).

Certain Defined Terms

For purposes of determining Compounded SOFR, Average SOFR or Term SOFR (each as defined above), as applicable, “**SOFR**” means, with respect to any U.S. Government Securities Business Day:

(1) the Secured Overnight Financing Rate in respect of such U.S. Government Securities Business Day as published by the New York Federal Reserve, as the administrator of such rate (or a successor administrator), on the New York Federal Reserve’s Website on or about 5:00 p.m. (New York City time) on the immediately following U.S. Government Securities Business Day; or

(2) if the Secured Overnight Financing Rate in respect of such U.S. Government Securities Business Day does not appear as specified in clause (1), unless both a Benchmark Transition Event and its related Benchmark Replacement Date have occurred, the Secured Overnight Financing Rate in respect of the last U.S. Government Securities Business Day for which such rate was published on the New York Federal Reserve’s Website; or

(3) if a Benchmark Transition Event and its related Benchmark Replacement Date have occurred:

(i) the sum of: (a) the alternate rate of interest that has been selected or recommended by the Relevant Governmental Body as the replacement for the then-current Benchmark for the applicable Corresponding Tenor and (b) the Benchmark Replacement Adjustment; or

(ii) the sum of: (a) the ISDA Fallback Rate and (b) the Benchmark Replacement Adjustment; or

(iii) the sum of: (a) the alternate rate of interest that has been selected by the Bank or its designee as the replacement for the then-current Benchmark for the applicable Corresponding Tenor giving due consideration to any industry-accepted rate of interest as a replacement for the then-current Benchmark for U.S. dollar-denominated floating rate notes at such time and (b) the Benchmark Replacement Adjustment.

In connection with the SOFR definition above and “—*Effect of Benchmark Transition Event*” below, the following definitions will apply:

“**Benchmark**” means, initially, as applicable, Compound SOFR, Average SOFR, Term SOFR or such other Base Rate specified in the applicable Pricing Supplement; *provided that* if a Benchmark Transition Event and its related Benchmark Replacement Date have occurred with respect to such Compound SOFR, Average SOFR, Term SOFR or other Base Rate, as applicable, or the then-current Benchmark, then “**Benchmark**” means the applicable Benchmark Replacement.

“**Benchmark Replacement**” means the first alternative set forth in the order presented in clause (3) of the definition of “**SOFR**” that can be determined by the Bank or its designee as of the Benchmark Replacement Date. In connection with the implementation of a Benchmark Replacement, the Bank or its designee will have the right to make Benchmark Replacement Conforming Changes from time to time.

“**Benchmark Replacement Adjustment**” means the first alternative set forth in the order below that can be determined by the Bank or its designee as of the Benchmark Replacement Date:

(1) the spread adjustment, or method for calculating or determining such spread adjustment, (which may be a positive or negative value or zero) that has been selected or recommended by the Relevant Governmental Body for the applicable Unadjusted Benchmark Replacement;

(2) if the applicable Unadjusted Benchmark Replacement is equivalent to the ISDA Fallback Rate, then the ISDA Fallback Adjustment;

(3) the spread adjustment (which may be a positive or negative value or zero) that has been selected by the Bank or its designee giving due consideration to any industry-accepted spread adjustment, or method for calculating or determining such spread adjustment, for the replacement of the then-current

Benchmark with the applicable Unadjusted Benchmark Replacement for U.S. dollar-denominated floating rate notes at such time.

“Benchmark Replacement Conforming Changes” means, with respect to any Benchmark Replacement, any technical, administrative or operational changes (including changes to the definition of “interest period”, timing and frequency of determining rates and making payments of interest, rounding of amounts or tenors (including changes to the definition of “Corresponding Tenor” solely when such tenor is longer than the Interest Period), and other administrative matters) that the Bank or its designee decides may be appropriate to reflect the adoption of such Benchmark Replacement in a manner substantially consistent with market practice (or, if the Bank or its designee decide that adoption of any portion of such market practice is not administratively feasible or if the Bank or its designee determine that no market practice for use of the Benchmark Replacement exists, in such other manner as the Bank or its designee determines is reasonably practicable).

“Benchmark Replacement Date” means the earliest to occur of the following events with respect to the then-current Benchmark:

- (1) in the case of clause (1) or (2) of the definition of “Benchmark Transition Event,” the later of (a) the date of the public statement or publication of information referenced therein and (b) the date on which the administrator of the Benchmark permanently or indefinitely ceases to provide the Benchmark; or
- (2) in the case of clause (3) of the definition of “Benchmark Transition Event,” the date of the public statement or publication of information referenced therein.

For the avoidance of doubt, if the event giving rise to the Benchmark Replacement Date occurs on the same day as, but earlier than, the Reference Time in respect of any determination, the Benchmark Replacement Date will be deemed to have occurred prior to the Reference Time for such determination.

“Benchmark Transition Event” means the occurrence of one or more of the following events with respect to the then-current Benchmark:

- (1) a public statement or publication of information by or on behalf of the administrator of the Benchmark announcing that such administrator has ceased or will cease to provide the Benchmark, permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide the Benchmark;
- (2) a public statement or publication of information by the regulatory supervisor for the administrator of the Benchmark, the central bank for the currency of the Benchmark, an insolvency official with jurisdiction over the administrator for the Benchmark, a resolution authority with jurisdiction over the administrator for the Benchmark or a court or an entity with similar insolvency or resolution authority over the administrator for the Benchmark, which states that the administrator of the Benchmark has ceased or will cease to provide the Benchmark permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide the Benchmark; or
- (3) a public statement or publication of information by the regulatory supervisor for the administrator of the Benchmark announcing that the Benchmark is no longer representative.

“Business Day” means any day other than a day that is (i) a Saturday or Sunday, (ii) a day on which banking institutions generally in the City of New York, Montreal or Toronto are authorized or obligated by law, regulation or executive order to close, (iii) a day on which transactions in U.S. dollars are not conducted in the City of New York or (iv) a day on which TARGET2 is not operating.

“ISDA Definitions” means the 2006 ISDA Definitions published by the International Swaps and Derivatives Association, Inc. or any successor thereto, as amended or supplemented from time to time, or any successor definitional booklet for interest rate derivatives published from time to time.

“ISDA Fallback Adjustment” means the spread adjustment (which may be a positive or negative value or zero) that would apply for derivatives transactions referencing the ISDA Definitions to be determined upon the occurrence of an index cessation event with respect to the Benchmark for the applicable tenor.

“ISDA Fallback Rate” means the rate that would apply for derivatives transactions referencing the ISDA Definitions to be effective upon the occurrence of an index cessation date with respect to the Benchmark for the applicable tenor excluding the applicable ISDA Fallback Adjustment.

“New York Federal Reserve” means the Federal Reserve Bank of New York.

“New York Federal Reserve’s Website” means the website of the New York Federal Reserve, currently at <http://www.newyorkfed.org>, or any successor source.

“Reference Time” with respect to any determination of the Benchmark means (1) if the Benchmark is Compounded SOFR based on SOFR Index, the SOFR Index Determination Time, (2) if the Benchmark is Compounded SOFR not based on SOFR Index, or Average SOFR, the SOFR Interest Determination Date, (3) if the Benchmark is Term SOFR, the Reference Time defined in “– *Term SOFR Notes*” above, and (4) if the Benchmark is not any of clauses (1) to (3) here, the time determined by the Bank or its designee in accordance with the Benchmark Replacement Conforming Changes.

“Relevant Governmental Body” means the Federal Reserve Board and/or the Federal Reserve Bank of New York, or a committee officially endorsed or convened by the Federal Reserve Board and/or the Federal Reserve Bank of New York or any successor thereto.

“U.S. Government Securities Business Day” means any day except for a Saturday, Sunday or a day on which the Securities Industry and Financial Markets Association (or any successor thereto) recommends that the fixed income departments of its members be closed for the entire day for purposes of trading in U.S. government securities.

“Unadjusted Benchmark Replacement” means the Benchmark Replacement excluding the Benchmark Replacement Adjustment.

Effect of a Benchmark Transition Event

(a) *Benchmark Replacement.* If the Bank or its designee determines on or prior to the relevant Reference Time that a Benchmark Transition Event and its related Benchmark Replacement Date have occurred with respect to the then-current Benchmark, the Benchmark Replacement will replace the then-current Benchmark for all purposes relating to the SOFR Notes in respect of all determinations on such date and for all determinations on all subsequent dates.

(b) *Benchmark Replacement Conforming Changes.* In connection with the implementation of a Benchmark Replacement, the Bank or its designee will have the right to make Benchmark Replacement Conforming Changes from time to time. No such change shall affect the Trustee’s or the Calculation Agent’s own rights, duties or immunities under the Indenture or otherwise without their consent.

(c) *Decisions and Determinations.* Any determination, decision or election that may be made by the Bank or its designee pursuant to the benchmark replacement provisions described herein and pursuant to “–*Compounded SOFR*”, “–*Average SOFR*” or “–*Term SOFR*” above, including any determination with respect to a tenor, rate or adjustment or of the occurrence or non-occurrence of an event, circumstance or date and any decision to take or refrain from taking any action or any selection:

- will be conclusive and binding absent manifest error, provided that neither the Trustee nor the Calculation Agent shall have any responsibility to determine whether any manifest error has occurred and may conclusively assume that no manifest error has occurred and shall suffer no liability in so assuming;
- if made by the Bank, will be made in the Bank’s sole discretion;
- if made by the Bank’s designee, will be made after consultation with the Bank, and the designee will not make any such determination, decision or election to which the Bank reasonably objects; and

- notwithstanding anything to the contrary in the Indenture or the SOFR Rate Notes, shall become effective without consent from the holders of the SOFR Rate Notes or any other party.

Any determination, decision or election pursuant to the benchmark replacement provisions not made by the Issuer's designee will be made by the Issuer on the basis as described above. The designee shall have no liability for not making any such determination, decision or election. In addition, the Issuer may designate an entity (which may be its affiliate) to make any determination, decision or election that the Issuer has the right to make in connection with the benchmark replacement provisions set forth above. If the Issuer's designee is unable to determine whether a Benchmark Transition Event has occurred and/or has not selected the Benchmark Replacement, then, in such case, the Issuer shall make such determination or select the Benchmark Replacement, as the case may be. If the Benchmark Replacement has not yet been determined as of any Interest Determination Date in accordance with the benchmark replacement provisions and the order set forth in the definition of "Benchmark Replacement", then the interest rate for the next Interest Determination Date will be set equal to the interest rate on the last Interest Determination Date.

(c) Maximum or Minimum Interest Rate

If any Maximum or Minimum Interest Rate is specified in the applicable Supplement, then the Rate of Interest shall in no event be greater than the maximum or be less than the minimum so specified. In addition, the interest rate on Floating Rate Notes will in no event be higher than the maximum rate permitted by New York law, as the same may be modified by United States law of general application.

(d) Accrual of Interest After the Due Date

Interest will cease to accrue as from the due date for redemption thereof unless upon due presentation or surrender thereof (if required), payment in full of the Redemption Amount is improperly withheld or refused or default is otherwise made in the payment thereof. In such event, interest shall continue to accrue on the principal amount in respect of which payment has been improperly withheld or refused or default has been made (as well after as before any demand or judgment) at the Rate of Interest then applicable or such other rate as may be specified for this purpose in the applicable Supplement if permitted by applicable law ("the **Default Rate**") until the date on which, upon due presentation or surrender of the relevant Note (if required), the relevant payment is made or, if earlier (except where presentation or surrender of the relevant Note is not required as a precondition of payment), the seventh day after the date on which, the Trustee having received the funds required to make such payment, notice is given to the holders of the Notes in accordance with the section "Notices" below that the Trustee has received the required funds (except to the extent that there is failure in the subsequent payment thereof to the relevant holder).

(e) Interest Amount(s), Calculation Agent and Reference Banks

As soon as practicable after the Relevant Time on each Interest Determination Date (or such other time on such date as the Calculation Agent may be required to calculate any Redemption Amount, obtain any quote or make any determination or calculation) the Calculation Agent will determine the Rate of Interest and calculate the amount(s) of interest payable (the "**Interest Amount(s)**") in the manner specified in (f) below, calculate the Redemption Amount, obtain such quote or make such determination or calculation, as the case may be, and cause the Rate of Interest and the Interest Amounts for each Interest Period and the relevant Interest Payment Date or, as the case may be, the Redemption Amount to be notified to the Trustee and the holders of the relevant Series of Notes in accordance with the section "Notices" below as soon as possible after their determination or calculation but in no event later than the fourth Business Day thereafter. The Rate of Interest and Interest Amounts so notified may subsequently be amended (or appropriate alternative arrangements made by way of adjustment) without notice in the event of an extension or shortening of the Interest Period. If the maturity of the Notes of any Series is accelerated, interest will be paid on such Notes through and excluding the related date of accelerated payment. The determination of each Rate of Interest, Interest Amount and Redemption Amount, the obtaining of each quote and the making of each determination or calculation by the Calculation Agent shall (in the absence of manifest error) be final and binding upon holders of the relevant Series of Notes and neither the Calculation Agent nor any Reference Bank shall have any liability to the holders in respect of any determination, calculation, quote or rate made or provided by it.

The Bank will procure that there shall at all times be such Reference Banks as may be required for the purpose of determining the Rate of Interest applicable to the Notes of any relevant Series.

(f) Calculations and Adjustments

The amount of interest payable in respect of any Note for any period shall be calculated by applying the Rate of Interest to the Calculation Amount, and, in each case, multiplying such sum by the Day Count Fraction, save that (i) if the applicable Supplement specifies a specific amount in respect of such period, the amount of interest payable in respect of such Note for such Interest Period will be equal to such specified amount and (ii) in the case of Fixed Rate Notes, the interest shall be calculated on such basis as may be specified in the applicable Supplement.

For the purposes of any calculations referred to herein (unless otherwise specified in the applicable Supplement), (a) all percentages resulting from such calculations will be rounded, if necessary, to the nearest one hundred-thousandth of a percentage point (with 0.000005 per cent. being rounded up to 0.00001 per cent.), (b) all Japanese Yen amounts used in or resulting from such calculations will be rounded downwards to the next lower whole Japanese Yen amount and (c) all amounts denominated in any other currency used in or resulting from such calculations will be rounded to the nearest two decimal places in such currency, with 0.005 being rounded upwards.

If a Benchmark Transition Event and its related Benchmark Replacement Date occur with respect to U.S. dollar LIBOR at any time when U.S. dollar LIBOR Notes are outstanding, then the foregoing provisions under “Interest—Floating Rate Notes” above concerning the calculation and payment of interest on the U.S. dollar LIBOR Notes will be modified in accordance with the benchmark replacement provisions described above under “*Description of the Notes—Interest—Floating Rate Notes—Screen Rate Determination—Benchmark Transition Event for U.S. dollar LIBOR Notes.*”

(g) Definitions

Except as otherwise specifically defined in “*Description of the Notes—Interest*” (including in “*—SOFR Rate Notes*” with respect to SOFR Rate Notes), the following terms shall have the meanings indicated below:

“**Banking Day**” means, in respect of any city, a day on which commercial banks are open for general business (including dealings in foreign exchange and foreign currency deposits) in that city.

“**Bloomberg Screen**” means, when used in connection with a designated page and any designated information, the display page so designated on the Bloomberg service (or such other page as may replace that page on that service for the purpose of displaying such information).

“**Business Day**” means (i) in relation to Notes payable in other than euro, a day (other than a Saturday or Sunday) on which commercial banks and foreign exchange markets are open for general business (including dealings in foreign exchange and foreign currency deposits) and settle payments in the relevant currency in the Financial Center(s) specified in the applicable Supplement or (ii) in relation to Notes payable in euro, a day (other than a Saturday or Sunday) which is a TARGET Business Day (as defined below) and on which commercial banks and foreign exchange markets are open for general business (including dealings in foreign exchange and foreign currency deposits) in the Financial Center(s) specified in the applicable Supplement.

“**Business Day Convention**” means a convention for adjusting any date if it would otherwise fall on a day that is not a Business Day and the following Business Day Conventions, where specified in the applicable Supplement in relation to any date applicable to any Notes, shall have the following meanings:

(a) “**Following Business Day Convention**” means that such date shall be postponed to the first following day that is a Business Day;

(b) “**Modified Following Business Day Convention**” or “**Modified Business Day Convention**” means that such date shall be postponed to the first following day that is a Business Day unless that day falls in the next calendar month in which case that date will be the first preceding day that is a Business Day;

(c) “**Preceding Business Day Convention**” means that such date shall be brought forward to the first preceding day that is a Business Day; and

(d) “**FRN Convention**” or “**Eurodollar Convention**” means that each such date shall be the date which numerically corresponds to the preceding such date in the calendar month which is the number of months

specified in the applicable Supplement after the calendar month in which the preceding such date occurred, provided that:

- (i) if there is no such numerically corresponding day in the calendar month in which any such date should occur, then such date will be the last day which is a Business Day in that calendar month;
- (ii) if any such date would otherwise fall on a day which is not a Business Day, then such date will be the first following day which is a Business Day unless that day falls in the next calendar month, in which case it will be the first preceding day which is a Business Day; and
- (iii) if the preceding such date occurred on the last day in a calendar month which was a Business Day, then all subsequent such dates will be the last day which is a Business Day in the calendar month which is the specified number of months after the calendar month in which the preceding such date occurred.

“**CMS Rate**,” as may be used in the applicable Supplement, measures the fixed rate of interest payable on a hypothetical fixed-for-floating U.S. dollar interest rate swap transaction with a maturity of specified years set forth in the applicable Supplement. In such a hypothetical swap transaction, the fixed rate of interest, payable semi-annually on the basis of a 360-day year consisting of twelve 30-day months, is exchangeable for a floating 3-month LIBOR-based payment stream that is payable quarterly on the basis of the actual number of days elapsed during a quarterly period in a 360-day year.

If, on any Interest Determination Date, the CMS Rate is not quoted on the applicable Reuters Screen ISDAFIX3 page, or any page substituted for that page, then the CMS Rate will be a percentage determined on the basis of the mid-market semi-annual swap rate quotations provided by three banks chosen by the Calculation Agent at approximately 11:00 a.m., New York City time, on that date. For this purpose, the semi-annual swap rate means the mean of the bid and offered rates for the semi-annual fixed leg, calculated on the basis of a 360-day year consisting of twelve 30-day months, of a fixed-for-floating U.S. dollar interest rate swap transaction with a term equal to the term of the CMS Rate, commencing on the applicable date and in a representative amount with an acknowledged dealer of good credit in the swap market, where the floating leg, calculated on the actual number of days in a 360-day year, is equivalent to LIBOR, as quoted on the Reuters Screen LIBOR01 page at 11:00 a.m., New York City time, with a designated maturity of three months. The Calculation Agent will request the principal New York City office of each of the three banks chosen by it to provide a quotation of its rate. If at least three quotations are provided, the rate for the relevant Interest Determination Date will be the arithmetic mean of the quotations. If two quotations are provided, the rate for the relevant Interest Determination Date will be the arithmetic mean of the two quotations. If only one quotation is provided, the rate for the relevant Interest Determination Date will equal that one quotation. If no quotations are available, then the CMS Rate will be the rate the Calculation Agent, in its sole discretion, determines to be fair and reasonable under the circumstances at approximately 11:00 a.m., New York City time, on the relevant Interest Determination Date.

Notwithstanding the previous paragraph, with respect to Floating Rate Notes linked to the CMS Rate, if (i) on any Interest Determination Date, the CMS Rate is not quoted on the applicable Reuters Screen ISDAFIX3 page, or any page substituted for that page, and (ii) the Issuer or its designee determines, on or prior to such Interest Determination Date, that a Benchmark Transition Event and its related Benchmark Replacement Date (each as defined above under “— Benchmark Transition Event for U.S. dollar LIBOR Notes”) have occurred with respect to U.S. dollar LIBOR, then the floating leg of the CMS Rate will thereafter be calculated under the provisions set forth above under “— Benchmark Transition Event for U.S. dollar LIBOR Notes — Effect of a Benchmark Transition Event for U.S. dollar LIBOR Notes.”

“**Day Count Fraction**” means, in respect of the calculation of an amount for any period of time (each such period an “**Accrual Period**”), such day count fraction as may be specified in the applicable Supplement and:

- (a) if “**Actual/Actual**” or “**Actual/Actual (ISDA)**” is so specified, means the actual number of days in the Accrual Period divided by 365 (or, if any portion of the Accrual Period falls in a leap year, the sum of (A) the actual number of days in that portion of the Accrual Period falling in a leap year divided by 366 and (B) the actual number of days in that portion of the Accrual Period falling in a non-leap year divided by 365);

(b) if “**Actual/365 (Fixed)**” is so specified, means the actual number of days in the Accrual Period divided by 365;

(c) if “**Actual/360**” is so specified, means the actual number of days in the Accrual Period divided by 360;

(d) if “**30E/360**” or “**Eurobond Basis**” is specified in the applicable Supplement, the number of days in the Interest Period divided by 360, calculated on a formula basis as follows:

$$\text{Day Count Fraction} = \frac{[360 \times (Y2 - Y1)] + [30 \times (M2 - M1)] + (D2 - D1)}{360}$$

where:

“Y1” is the year, expressed as a number, in which the first day of the Interest Period falls;

“Y2” is the year, expressed as a number, in which the day immediately following the last day included in the Interest Period falls;

“M1” is the calendar month, expressed as a number, in which the first day of the Interest Period falls;

“M2” is the calendar month, expressed as a number, in which the day immediately following the last day included in the Interest Period falls;

“D1” is the first calendar day, expressed as a number, of the Interest Period, unless such number would be 31, in which case D1 will be 30; and

“D2” is the calendar day, expressed as a number, immediately following the last day included in the Interest Period, unless such number would be 31, in which case D2, will be 30.

(e) if “**30/360**,” “**360/360**” or “**Bond Basis**” is specified in the applicable Supplement, the number of days in the Interest Period divided by 360, calculated on a formula basis as follows:

$$\text{Day Count Fraction} = \frac{[360 \times (Y2 - Y1)] + [30 \times (M2 - M1)] + (D2 - D1)}{360}$$

where:

“Y1” is the year, expressed as a number, in which the first day of the Interest Period falls;

“Y2” is the year, expressed as a number, in which the day immediately following the last day included in the Interest Period falls;

“M1” is the calendar month, expressed as a number, in which the first day of the Interest Period falls;

“M2” is the calendar month, expressed as number, in which the day immediately following the last day included in the Interest Period falls;

“D1” is the first calendar day, expressed as a number, of the Interest Period, unless such number would be 31, in which case D1 will be 30; and

“D2” is the calendar day, expressed as a number, immediately following the last day included in the Interest Period, unless such number would be 31 and D1 is greater than 29, in which case D2 will be 30;

(f) if “**30E/360 (ISDA)**” is so specified, means the number of days in the Accrual Period divided by 360, calculated on a formula basis as follows:

$$\text{Day Count Fraction} = \frac{[360 \times (Y2 - Y1)] + [30 \times (M2 - M1)] + (D2 - D1)}{360}$$

where:

“Y1” is the year, expressed as a number, in which the first day of the Accrual Period falls;

“Y2” is the year, expressed as a number, in which the day immediately following the last day included the Accrual Period falls;

“M1” is the calendar month, expressed as a number, in which the first day of the Accrual Period falls;

“M2” is the calendar month, expressed as a number, in which the day immediately following the last day included in the Accrual Period falls;

“D1” is the first calendar day, expressed as a number, of the Accrual Period, unless (i) that day is the last day of February or (ii) such number would be 31, in which case D1 will be 30; and

“D2” is the calendar day, expressed as a number, immediately following the last day included in the Accrual Period, unless (i) that day is the last day of February but not the stated maturity date or (ii) such number would be 31, in which case D2 will be 30; and

(g) if “**Actual/Actual (ICMA)**” or “**Act/Act (ICMA)**” is specified in the applicable Supplement, a fraction equal to “number of days accrued/number of days in year,” as such terms are used in Rule 251 of the statutes, by-laws, rules and recommendations of the International Capital Market Association (the “**ICMA Rule Book**”), calculated in accordance with Rule 251 of the ICMA Rule Book as applied to non U.S. dollar denominated straight and convertible bonds issued after December 31, 1998, as though the interest coupon on a bond were being calculated for a coupon period corresponding to the Interest Period.

“**Determination Date**” means such dates as specified in the applicable Supplement.

“**Determination Period**” means the period from and including a Determination Date in any year to but excluding the next Determination Date (including, where either the Interest Commencement Date or the final Interest Payment Date is not a Determination Date, the period commencing on the first Determination Date prior to, and ending on the first Determination Date falling after, such date).

“**Financial Center**” means such financial center or centers as may be specified in relation to the relevant currency for the purposes of the definition of “Business Day” in the ISDA Definitions or indicated in the applicable Supplement or, in the case of Notes denominated in euro, such financial center or centers as the Calculation Agent may select.

“**Interest Commencement Date**” means the date of issue (the “**Issue Date**”) of the Notes (as specified in the applicable Supplement) or such other date as may be specified as such in the applicable Supplement.

“**Interest Determination Date**” means, in respect of any Interest Period, the date falling such number (if any) of Banking Days in such city or cities as may be specified in the applicable Supplement prior to the first day of such Interest Accrual Period, or if none is specified:

(a) in the case of Notes denominated in Pounds Sterling or in another currency if so specified in the applicable Supplement, the first day of such Interest Period; or

(b) in any other case, the date falling two London Banking Days prior to the first day of such Interest Accrual Period.

“**Interest Payment Date**” means the date or dates specified as such in, or determined in accordance with the provisions of, the applicable Supplement, as the same may be adjusted in accordance with the Business Day Convention, if any, specified in the applicable Supplement or if the Business Day Convention is the FRN Convention and an interval of a number of calendar months is specified in the applicable Supplement as being the Interest Period, each of such dates as may occur in accordance with the FRN Convention at such specified period of calendar months

following the Issue Date of the Notes (in the case of the first Interest Payment Date) or the previous Interest Payment Date (in any other case).

“Interest Period” means each successive period beginning on and including an Interest Payment Date and ending on but excluding the next succeeding Interest Payment Date, provided always that the first Interest Period shall commence on and include the Interest Commencement Date and the final Interest Period shall end on but exclude the stated maturity.

“Interest Period End Date” means the date or dates specified as such in, or determined in accordance with the provisions of, the applicable Supplement, as the same may be adjusted in accordance with the Business Day Convention, if any, specified in the applicable Supplement or, if the Business Day Convention is the FRN Convention and an interval of a number of calendar months is specified in the applicable Supplement as the Interest Accrual Period, such dates as may occur in accordance with the FRN Convention at such specified period of calendar months following the Interest Commencement Date (in the case of the first Interest Period End Date) or the previous Interest Period End Date (in any other case) or, if none of the foregoing is specified in the applicable Supplement, means the date or each of the dates which correspond with the Interest Payment Date(s) in respect of the Notes.

“ISDA Definitions” means the 2006 ISDA Definitions (as amended, supplemented and updated as at the date of issue of the Notes of the relevant Series (as specified in the applicable Supplement) as published by ISDA) unless otherwise specified in the applicable Supplement.

“Rate of Interest” means the rate or rates (expressed as a percentage per annum) or amount or amounts (expressed as a price per unit of relevant currency) of interest payable in respect of the Notes specified in, or calculated or determined in accordance with the provisions of, the applicable Supplement.

“Reference Banks” means such banks as may be specified in the applicable Supplement as the Reference Banks, or, if none are specified, “Reference Banks” has the meaning given in the ISDA Definitions, mutatis mutandis.

“Relevant Time” means the time as of which any rate is to be determined as specified in the applicable Supplement (which in the case of LIBOR means London time) or, if none is specified, at which it is customary to determine such rate.

“Reuters Screen” means, when used in connection with a designated page and any designated information, the display page so designated on the Reuters Market 3000 (or such other page as may replace that page on that service for the purpose of displaying such information).

“Reuters Screen Page” means the Reuters Screen as specified in the applicable Supplement or, if none is specified, what is determined by the Calculation Agent to be customary for such rate.

“Screen Rate Determination” means determination of the interest rate for Floating Rate Notes by reference to the relevant screen page for the applicable reference rate, as specified in the applicable Supplement.

“TARGET Business Day” means, a day in which the Trans-European Automated Real-Time Gross Settlement Express Transfer (TARGET) System is open.

Payments of Additional Amounts

All payments in respect of the Notes shall be made free and clear of, and without withholding or deduction for or on account of, any present or future taxes, duties, assessments or governmental charges of whatever nature imposed, levied, collected, withheld or assessed unless such withholding or deduction is required by law.

In the event that any amounts are required to be deducted or withheld for, or on behalf of, Canada or any province or territory thereof, the Bank shall pay such additional amount as may be necessary, in order that each holder of a Note, after deduction or withholding of such taxes, duties, assessments or governmental charges, will receive the full amount then due and payable that would have been received by such holder had no deduction or withholding been required, provided that no such additional amounts shall be payable with respect to any Note:

- (a) held by or on behalf of a holder who is liable to such taxes, duties, assessments or governmental charges in respect of such Note by reason of his being connected with Canada or any province or territory thereof other than by the mere holding of such Note; or
- (b) to, or to a third party on behalf of, a holder in respect of whom such tax, duty, assessment or governmental charge is required to be withheld or deducted by reason of the holder or any other person entitled to payments under the Notes being a person with whom the Bank is not dealing at arm's length (within the meaning of the *Income Tax Act* (Canada)), or being a person who is, or does not deal at arm's length with any person who is a "specified shareholder" of the Bank for the purposes of the thin capitalization rules in the *Income Tax Act* (Canada); or
- (c) presented for payment more than 30 days after the date on which the payment in respect of the Notes first became due and payable or the date on which payment thereof is duly provided for, whichever occurs later, except to the extent that the holder thereof would have been entitled to such additional amount on presenting the same for payment on the thirtieth such day; or
- (d) if such tax or governmental charge is on account of an estate, inheritance, gift, sale, transfer, personal property or similar tax or governmental charge; or
- (e) to, or to a third party on behalf of, a holder who is liable for such taxes, duties, assessments or other governmental charges by reason of such holder's failure to comply with any certification, identification, documentation or other reporting requirement concerning the nationality, residence, identity or connection with Canada or any province or territory thereof, if (i) compliance is required by law as a precondition to, exemption from, or reduction in the rate of, the tax, duty, assessment or other governmental charge and (ii) the Bank has given holders at least 30 days' notice that holders will be required to provide such certification, identification, documentation or other requirement;
- (f) to a holder who is a fiduciary or partnership or other than the sole beneficial owner of such payment to the extent a beneficiary or settlor with respect to such fiduciary or a member of such partnership or beneficial owner would not have been entitled to the additional amounts had such beneficiary, settler, member or beneficial owner held its interest in the Note directly;
- (g) for any withholding or deduction imposed or levied pursuant to an agreement described in Section 1471(b) of the U.S. Internal Revenue Code of 1986, as amended (the "**Code**") or otherwise imposed pursuant to Sections 1471 through 1474 of the Code and any regulations or agreements thereunder, official interpretations thereof, or law implementing an intergovernmental approach thereto; or
- (h) if such tax, duty, assessment or governmental charge is in respect of any amount that is "participating debt interest" (within the meaning of the *Income Tax Act* (Canada)).

At least 30 days prior to each date on which any payment under or with respect to the Notes is due and payable (unless such obligation to pay additional amounts arises after the 30th day prior to the date on which payment under or with respect to the Notes is due and payable, in which case it will be promptly thereafter), if the Bank will be obligated to pay additional amounts with respect to such payment, the Bank will deliver to the Trustee an officer's certificate stating that such additional amounts will be payable and the amounts so payable and setting forth such other information as is necessary to enable the Trustee to pay such additional amounts to the holders of such Notes on the payment date.

Redemption and Repurchase

(a) Redemption at Maturity

Unless previously redeemed, or repurchased and cancelled, each Note shall be redeemed at the amount specified in the applicable Supplement in the Specified Currency on the Final Maturity Date (the "**Final Redemption Amount**").

(b) Optional Early Redemption by the Bank

Unless otherwise indicated in the applicable Supplement, the Notes will not be redeemable prior to their stated maturity date. If so provided for in the applicable Supplement, the Bank may, having given not less than 10 nor more than 45 days' notice to the holders of Notes (with a copy to the Trustee) in accordance with "Notices" below, which notices shall be irrevocable and shall specify the date fixed for redemption, redeem the Notes then outstanding, in whole or in part, on any optional redemption date and at the optional redemption amounts specified in, or determined in the manner specified in, the applicable Supplement together, if appropriate, with interest accrued to, but excluding, the relevant optional redemption date. Any such redemption must be of a nominal amount equal to the minimum redemption amount or a higher redemption amount, in each case as specified in the applicable Supplement.

In the case of a partial redemption of Notes, the Notes to be redeemed ("**Redeemed Notes**") will be selected individually by lot, pro rata or such other method as the Trustee shall deem fair and appropriate, in the case of Redeemed Notes represented by certificated Notes, and in accordance with the rules of the Depository in the case of Redeemed Notes represented by a Global Note, not more than 30 days prior to the date fixed for redemption (such date of selection the "**Selection Date**"). In the case of Redeemed Notes represented by certificated Notes, a list of the serial numbers of such Redeemed Notes will be published in accordance with "Notices" below, not less than 15 days prior to the date fixed for redemption. No exchange of the relevant Global Note will be permitted during the period from and including the Selection Date to and including the date fixed for redemption pursuant to this section and notice to that effect shall be given by the Bank to the holders of Notes in accordance with "Notices" below, at least ten days prior to the Selection Date.

In respect of any Note, any notice given by the Bank pursuant to this clause shall be void and of no effect in relation to that Note in the event that, prior to the giving of such notice by the Bank, the holder of such Note had already delivered a Put Notice in relation to that Note in accordance with the provisions of "*Optional Early Redemption by Holder*" below.

Additional information regarding an optional early redemption by the Bank with respect to a Series of Notes will be set forth in the related Supplement.

(c) Optional Early Redemption by Holder

Unless otherwise specified in the applicable Supplement, the Notes will not be redeemable by the holder(s) prior to their stated maturity date. If so provided for in the applicable Supplement for Notes of any offering in any Series, the applicable Supplement for such Notes will indicate that upon the holder of any Note giving to the Bank in accordance with "Notices" below not less than 15 nor more than 30 days' notice, the Bank will, upon the expiration of such notice, redeem, subject to and in accordance with the terms specified in the applicable Supplement, in whole, but not in part, such Note on the optional redemption date and at the optional redemption amount together, if appropriate, with interest accrued to but excluding the optional redemption date.

If a Note is in certificated form and held outside the Depository, to exercise the right to require redemption of such Note, the holder of such Note must deliver such Note at the specified office of the Trustee at any time during normal business hours of such Trustee falling within the notice period, a duly completed and signed notice of exercise in the form obtainable from any specified office of the Trustee (a "**Put Notice**") and in which the holder must specify a bank account, or, if payment is required to be made by check, an address, to which payment is to be made under this clause, accompanied by the Note or evidence satisfactory to the Trustee concerned that the Note will, following delivery of the Put Notice, be held to its order or under its control. If the Note is represented by a Global Note or is in certificated form and held through a Depository, to exercise the right to require redemption of such Note, the holder of the Note must, within the notice period, give notice to the Trustee of such exercise in accordance with the standard procedures of the Depository, which may include notice being given on his instruction by a Depository or any nominee for them to the Trustee by electronic means, in a form acceptable to the Depository from time to time and, if a Note is represented by a Global Note, at the same time present or procure the presentation of the relevant Global Note to the Trustee for notation accordingly.

Any Put Notice given by a holder of any Note pursuant to this paragraph shall be (i) irrevocable except if prior to the due date of redemption an Event of Default shall have occurred and be continuing, in which event such holder, at his option, may elect by notice to the Bank to withdraw the notice given pursuant to this paragraph and instead to declare such Note forthwith due and payable or deliverable pursuant to the provisions of "*Events of*

Default” and (ii) void and of no effect in relation to such Note in the event that, prior to the giving of such Put Notice by the relevant holder (A) such Note constituted a Redeemed Note, or (B) the Bank had notified the Noteholders of its intention to redeem all of the Notes in a Series then outstanding, in each case pursuant to “— *Optional Early Redemption by the Bank*” above.

(d) *Special Requirements for Optional Redemption of Global Notes*

If Notes of any offering in any series are represented by a Global Note, the Depository or the Depository’s nominee will be the holder of the Global Note and therefore will be the only entity that can exercise a right to redemption, if applicable. In order to ensure that the Depository’s nominee will timely exercise a right to redemption of a particular Global Note, as provided in “— *Optional Early Redemption by Holder*” above, the beneficial owner of the Notes represented by such Global Note must instruct the broker or other Direct or Indirect Participant through which it holds an interest in the Global Note to notify the Depository of its desire to exercise a right to repayment. Different firms have different cut-off times for accepting instructions from their customers and, accordingly, each Beneficial Owner should consult the broker or other Direct or Indirect Participant through which it holds an interest in a Global Note in order to ascertain the cut-off time by which an instruction must be given in order for timely notice to be delivered to the Depository.

(e) *Mandatory Early Redemption*

Unless otherwise indicated in the applicable Supplement, the Notes will not be subject to mandatory redemption prior to maturity. If so provided in the applicable Supplement for Notes of any offering in any Series, such Notes will be redeemable, in whole and not in part, on mandatory early redemption dates prior to their specified maturity date or upon the occurrence of certain events in such manner as specified in the applicable Supplement. The applicable Supplement will also provide the applicable mandatory Redemption Amount, which may be fixed at the time of sale of such Notes, or the method of calculating the payment amount for which such Notes will be redeemed.

(f) *Redemption for Taxation Reasons*

The Bank will have the right to redeem the Notes in whole, but not in part, at any time (in the case of Notes other than Floating Rate Notes) or on any Interest Payment Date (in the case of Floating Rate Notes), following our determination that a Tax Event (as defined herein) has occurred that would require us to pay additional amounts on the Notes of any Series pursuant to “*Payments of Additional Amounts*” above, unless at the time there is available to us the opportunity to eliminate the Tax Event by taking some ministerial action, such as filing a form or making an election, or pursuing some other similar reasonable measure that in our sole judgment has or will cause no adverse effect on us or any of our subsidiaries or affiliates and will involve no material cost, in which event we will pursue that measure in lieu of redemption.

If the Bank’s redemption right arises under such circumstances, the Bank may, by giving to the holders of the Notes not more than 60 nor less than 30 days’ notice in accordance with “*Notices*” below, which notices shall be irrevocable and shall specify the date fixed for redemption, redeem all, but not some only, of the Notes. The Bank shall give each such notice to the Trustee in writing at least 15 days before the date such notice is mailed to each Holder of the Notes, unless the Trustee consents to a shorter period. If the Bank redeems the Notes in these circumstances, the redemption price of each Note will be equal to 100% of the principal amount of such Note plus accrued but unpaid interest on such Note to the date of redemption.

“**Tax Event**” means that there has been:

- an amendment to or change in the laws or regulations of Canada or any province or territory thereof;
- a judicial decision interpreting, applying or clarifying those laws or regulations; or
- an administrative pronouncement or action that represents an official position, including a clarification of an official position, of the governmental authority or regulatory body making the administrative pronouncement or taking any action,

which amendment or change is adopted or which proposed change, decision, pronouncement or action is announced or which action or clarification occurs on or after the issue date of the Notes or, in the event that the Bank has

amalgamated merged, consolidated or sold substantially all of its assets after such date, the most recent effective date of such merger, consolidation or asset sale, following which any payment on the Notes is, or will be, subject to withholding or deduction in respect of any taxes, assessments or other governmental charges that did not apply prior to such amendment, change, proposed change, decision, pronouncement or action.

(g) TLAC Disqualification Event Redemption

If a TLAC Disqualification Event (as defined herein) is specified in the applicable Pricing Supplement, we may, at our option, with the prior approval of the Superintendent of Financial Institutions, redeem all but not less than all of the particular Bail-inable Notes prior to their stated maturity date after the occurrence of the TLAC Disqualification Event at the time and at the redemption price or prices specified in that Pricing Supplement, together with unpaid interest accrued thereon to, but excluding, the date fixed for redemption.

A “**TLAC Disqualification Event**” means OSFI has advised the Bank in writing that the Bail-inable Notes will no longer be recognized in full as TLAC under the TLAC Guideline as interpreted by the Superintendent of Financial Institutions, provided that a TLAC Disqualification Event will not occur where the exclusion of the Bail-inable Notes from the Bank’s TLAC requirements is due to the remaining maturity of the Bail-inable Notes being less than any period prescribed by any relevant eligibility criteria applicable as of the issue date of the Bail-inable Notes.

(h) Approval of Redemption, Repurchases and Defeasance; Amendments and Modifications

Where the redemption, repurchase or any defeasance or covenant defeasance with respect to Bail-inable Notes would result in the Bank not meeting the TLAC requirements applicable to it pursuant to the TLAC Guideline or is made as a result of a TLAC Disqualification Event, that redemption, repurchase, defeasance or covenant defeasance will be subject to the prior approval of the Superintendent of Financial Institutions.

Where an amendment, modification or other variance that can be made to the Indenture or the Bail-inable Notes would affect the recognition of those Bail-inable Notes by the Superintendent of Financial Institutions as TLAC, that amendment, modification or variance will require the prior approval of the Superintendent of Financial Institutions.

(i) Illegality

In the event that the Bank determines in good faith that (i) the performance of the Bank’s obligations under the Notes or (ii) any arrangements made to hedge the Bank’s obligations under the Notes has or will become, in whole or in part, unlawful, illegal or otherwise contrary to any present or future law, rule, regulation, judgment, order or directive of any governmental, administrative, legislative, judicial or regulatory authority or powers, or any change in the interpretation thereof that is applicable to the Bank, it may, at its discretion, by giving, at any time, not less than 10 nor more than 30 calendar days’ notice to Noteholders (which notice shall be revocable at the Bank’s option), elect that such Notes be redeemed, in whole but not in part, on the date specified by the Bank, at their principal amount together, if applicable, with interest accrued to (but excluding) the date fixed for redemption.

(j) Repurchases

The Bank or its affiliates may purchase the Notes at any price in the open market or otherwise. Notes so purchased by the Bank may, at its discretion, be held or resold or surrendered to the Trustee for cancellation.

Exchange and Replacement of Notes

The following description concerning the transfer, exchange and replacement of Notes will only apply to physical notes issued to the holders or to Notes evidenced by Global Notes in the event that the use of DTC’s book-entry system is discontinued pursuant to the terms of the Indenture and such Notes are delivered in definitive form to the owners thereof.

The Notes may be transferred or exchanged for Notes of a like aggregate principal amount in any authorized denominations and otherwise of the same terms as such Notes so transferred or exchanged. The transfer of any Notes may be registered only upon the Register and only upon surrender of such Notes to the Trustee. Each Note surrendered for registration of transfer or for exchange shall (if so required by the Trustee or the Bank) be duly endorsed, or be accompanied by a written instrument of transfer with such evidence of due authorization and guarantee of signature

as may reasonably be required by the Trustee or the Bank in form satisfactory to the Trustee or the Bank, duly executed by the holder thereof or his attorney duly authorized in writing. In the event any Note becomes mutilated, destroyed, stolen or lost, the Trustee shall authenticate and deliver a replacement Note of like tenor and principal amount in exchange or replacement therefor in accordance with the provisions therefor in the Indenture.

The manner of transferring ownership interests in Global Notes while such Notes are in DTC's book-entry system is described below under "*Book-Entry Clearing Systems.*"

Merger and Similar Events

The Indenture provides that the Bank will not amalgamate with, consolidate with or merge with or into any other Person (defined in the Indenture to mean any individual, partnership, corporation, business trust, joint stock company, limited liability company, trust, unincorporated association, joint venture, governmental entity or other entity of whatever nature) or sell, lease or convey all or substantially all of its assets to any other Person, unless (i) either the Bank shall be the continuing entity, or the successor entity or the Person which acquires by sale, lease or conveyance substantially all the assets of the Bank (if other than the Bank) shall be an entity organized under the laws of Canada or any province thereof or the laws of the United States of America or any State thereof or the District of Columbia and shall expressly assume the due and punctual payment of the Redemption Amount of and interest on all the Notes according to their tenor, and the due and punctual performance and observance of all of the covenants and conditions of the Indenture to be performed or observed by the Bank, by supplemental indenture in form satisfactory to the Trustee, executed and delivered to the Trustee by such entity, and (ii) the Bank, such Person or such successor entity, as the case may be, shall not, immediately after such amalgamation, merger or consolidation, or such sale, lease or conveyance, be in default in the performance of any such covenant or condition. The Indenture further provides that upon any amalgamation, consolidation, merger or transfer of all or substantially all of the assets of the Bank, the Person formed by or surviving such consolidation or merger (if other than the Bank), or the Person to which such amalgamation, consolidation, merger or transfer is made, shall succeed to, and be substituted for, and may exercise every right and power of the Bank under the Indenture with the same effect as if such Person had been named as the Bank therein.

If the conditions described above are satisfied, the Bank will not need to obtain the approval of the holders of the Notes in order to amalgamate, merge or consolidate or to sell its assets. Also, these conditions will apply only if the Bank wishes to amalgamate, merge or consolidate with another entity or sell substantially all of its assets to another entity. The Bank will not need to satisfy these conditions if the Bank enters into other types of transactions, including any transaction in which the Bank acquires the stock or assets of another entity, any transaction that involves a change of control, but in which the Bank does not amalgamate, merge or consolidate and any transaction in which the Bank sells less than substantially all of its assets. It is possible that this type of transaction may result in a reduction in the Bank's credit ratings, may negatively affect its operating results or may impair its financial condition. Holders of Notes, however, will have no approval right with respect to any transaction of this type.

Events of Default and Remedies; Waiver of Past Defaults

Events of Default and Remedies

Under the Indenture, for Notes of a Series issued on or after the date of the First Supplemental Indenture, an "**Event of Default**" means any of the following:

- We default in the payment of the principal of, or interest on, any Note of that Series and, in each case, the default continues for a period of 30 business days;
- Certain bankruptcy, insolvency or reorganization events occur in Canada with respect to the Bank as issuer; or
- Any other Event of Default provided with respect to Notes of that Series.

An Event of Default regarding one series of debt securities will not cause an Event of Default regarding any other series of debt securities. For purposes of this section "*— Events of Default and Remedies,*" with respect to debt securities issued on or after the date of the First Supplemental Indenture, "series" refers to debt securities having

identical terms, except as to issue date, principal amount and, if applicable, the date from which interest begins to accrue. A Bail-in Conversion will not constitute a default or an Event of Default under the Indenture.

Under the Indenture, upon the occurrence and continuance of an Event of Default with respect to any Series of Notes, unless the Redemption Amount for such Series has already become due and payable, either the Trustee or the holders of at least a majority in aggregate principal amount of the Notes of such Series by notice in writing to the Bank (and to the Trustee if given by the holders of the Notes), may declare the entire Redemption Amount of all Notes then outstanding and interest accrued thereon (if any), or any other amounts payable, to be due and payable, and upon any such declaration, the same shall become immediately due and payable.

The Indenture provides that if an Event of Default occurs with respect to any Series of Notes, has not been waived and is continuing, the Trustee may in its discretion, and at the direction of the holders of at least a majority of the outstanding aggregate principal amount of such Series of Notes will, proceed to protect and enforce its rights and the rights of the holders of such Notes by such appropriate judicial proceedings as the Trustee shall deem most effectual to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in the Indenture or in aid of the exercise of any power granted in the Indenture, or to enforce any other proper remedy. Any money collected by the Trustee upon exercise of the remedies under the Indenture or, after an Event of Default, any money or other property distributable in respect of the Bank's obligations under the Indenture, will be applied first, to the payment of any costs and expenses of the Trustee incurred in the enforcement of the affected Notes, second, to payment of the Redemption Amount (if any), interest (if any) or other amounts payable on the outstanding affected Notes and third, to payment of the remainder, if any, to the Bank or any other Person lawfully entitled thereto.

The Indenture further provides that if an Event of Default under the Indenture shall have occurred and be continuing, the Trustee shall, within 30 calendar days after a responsible officer of the Trustee obtains written notice of the occurrence of such Event of Default, give notice of such Event of Default to the Bank, as well as to the holders of the Notes of each Series, in the manner provided in the Indenture; provided, however, that notwithstanding the foregoing, except in the case of a default by the Bank in the payment of the Redemption Amount (if any), interest (if any) or other amounts payable on the Notes at maturity (whether at the stated maturity or by declaration of acceleration, call for redemption at our option or otherwise), the Trustee shall not be required to give such notice to the holder of the Notes of any Series if the Trustee in good faith shall have decided that the default is not materially prejudicial to the holders of the Notes of such Series and shall have so advised the Bank in writing. Where a notice of the occurrence of an Event of Default has been given to the holders of the Notes of any Series pursuant to the Indenture provision described in the preceding sentence and the Event of Default is thereafter cured, the Trustee shall give notice that the Event of Default is no longer continuing to the holders of the affected Notes within 30 calendar days after it becomes aware that the Event of Default has been cured.

Holders or beneficial owners of Bail-inable Notes may only exercise, or direct the exercise of, the rights described in this section if the Governor in Council (Canada) has not made an order under Canadian bank resolution powers pursuant to subsection 39.13(1) of the CDIC Act in respect of the Bank. Notwithstanding the exercise of those rights, Bail-inable Notes will continue to be subject to Bail-in Conversion until repaid in full.

By its acquisition of an interest in any Bail-inable Note, each holder or beneficial owner of that Note, is deemed to waive any and all claims, in law and/or in equity, against the Trustee, for, agrees not to initiate a suit against the Trustee in respect of, and agrees that the Trustee will not be liable for, any action that the Trustee takes, or abstains from taking, in either case in accordance with the Bail-in Regime.

Waiver of Past Defaults

The Indenture provides that, with respect to any Series of Notes, the Trustee may, and at the direction of the holders of at least a majority of the aggregate principal amount of the Notes of each applicable Series (voting as a single class), on behalf of the holders of the Notes of such Series, waive any past event which is, or after notice or passage of time or both would be, an Event of Default (a "**Default**") and its consequences, except a Default in the payment of the Redemption Amount, interest or any other amounts (unless such Default has been cured and a sum (in cash or Notes) sufficient to pay such amounts has been deposited with the Trustee) or a Default in respect of a provision of the Indenture which pursuant to the terms thereof cannot be modified or amended without the consent of each holder of the Notes of the affected Series as is specified below in "*— Modifications of Indenture and the Terms of the Notes and the Guarantee; Supplemental Indentures.*"

Discharge

The Indenture will cease to be of further effect with respect to the Notes of any Series, except as to rights of registration of transfer and exchange, substitution of mutilated or defaced Notes, rights of holders to receive Redemption Amount, interest or other amounts payable under the Notes, rights and immunities of the Trustee and rights of holders with respect to property deposited pursuant to the following provisions, if at any time:

- the Bank has paid the Redemption Amount, interest or other amounts payable under the Notes of such Series;
- the Bank has delivered all Notes to the Trustee for cancellation of such Series; or
- where the Notes of such Series have become due and payable but have not been delivered to the Trustee for cancellation, or the Notes are by their terms to become due and payable within one year or are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption, the Bank has irrevocably deposited or caused to be deposited with the Trustee as trust funds the entire amount to pay all of the amounts payable on Notes of such Series on each date that amounts are due and payable.

The Trustee, on demand of the Bank accompanied by an officers' certificate and an opinion of counsel and at the cost and expense of Bank, will execute proper instruments acknowledging such satisfaction of and discharging the Indenture.

All Notes that are redeemed or purchased for cancellation by the Bank may forthwith be cancelled and accordingly may not be re-issued or resold and the obligations of the Bank in respect of any such Notes shall be discharged.

Any defeasance or covenant defeasance with respect to Bail-inable Notes that would result in the Bank not meeting the TLAC requirements applicable to it pursuant to the TLAC Guideline will be subject to the prior approval of the Superintendent of Financial Institutions.

Modifications of Indenture and the Terms of the Notes and the Guarantee; Supplemental Indentures

With respect to each Series of Notes, the Bank and the Trustee may, with the consent of the holders of not less than a majority in aggregate principal amount of the Notes of such Series, modify and amend the provisions of such Notes, including to grant waivers of future compliance or past default by the Bank. However, no such amendment or modification will apply to Notes of such Series without the consent of each holder affected thereby with respect to the following matters:

- (a) change the stated maturity date of, the Redemption Amount of, or of any installment of Redemption Amount of or interest on, any Note;
- (b) reduce the Redemption Amount of, interest on, or any other amounts due under the Notes;
- (c) change the currency or currency unit of payment of the Notes;
- (d) change the method by which amounts of payment of Redemption Amount, interest or other amounts are determined on the Notes;
- (e) impair the right of a holder to institute suit for the payment of or, if the Notes provide, any right of repayment at the option of the holder of the Notes;
- (f) change the status of the Notes so as to subordinate principal or interest thereon;
- (g) change the place of payments on the Notes; or
- (h) reduce the percentage of Notes of any Series, the consent of the holders of which is required for any modification.

The Indenture also permits the Bank and the Trustee to amend the Indenture in certain circumstances without the consent of the holders of the Notes of any Series to evidence our merger, to replace the Trustee, and for certain other purposes. In addition, no consent of the holders of the Notes is or will be required for any modification, amendment or supplement requested by the Bank to:

- provide security or collateral for the Notes;
- evidence any merger or succession of another entity to the Bank;
- add to the Bank's covenants for the benefit of the holders;
- cure any ambiguity in any provision, or correct any defective provision, of any Series of Notes;
- change the terms and conditions of the Notes of any Series or the Indenture in any manner which shall be necessary or desirable so long as any such change does not, and will not, in the sole opinion of the Bank, adversely affect the rights or interest of any holder of such Series;
- modify the restrictions on, and procedures for, resale and other transfers of the Notes of any Series pursuant to law, regulations or practice relating to the resale or transfer of restricted securities generally;
- evidence the acceptance of appointment of a successor to any agent; or
- establish a new Series of Notes or additional Notes.

The Bank may at any time ask for written consent or call a meeting of the holders of the Notes of a Series to seek their approval of the modification of or amendment to, or obtain a waiver of, any provision of the Notes of such Series. This meeting will be held at the time and place determined by the Bank and specified in a notice of such meeting furnished to the holders of the relevant Series of Notes, which notice must be given at least 30 days and not more than 60 days prior to such meeting.

If at any time the holders of at least 10% in aggregate principal amount of the Notes of any Series request the Trustee to call a meeting of the holders of the Notes of such Series for any purpose, by written request setting forth in reasonable detail the action proposed to be taken at the meeting, the Trustee will call the meeting for such purpose. This meeting will be held at the time and place determined by the Trustee and specified in a notice of such meeting furnished to the holders of the Notes of such Series. This notice must be given at least 30 days and not more than 60 days prior to such meeting.

Holders who hold a majority in aggregate principal amount of the Notes of the relevant Series will constitute a quorum at a meeting of the holders of such Notes. In the absence of a quorum, a meeting may be adjourned for a period of at least 20 days and not more than 45 days. At the reconvening of a meeting adjourned for lack of quorum, there shall be no quorum required. Notice of the reconvening of any meeting may be given only once, but must be given at least ten days and not more than 15 days prior to such meeting.

At any meeting that is duly convened, holders of at least a majority in aggregate principal amount of the Notes of the relevant Series represented and voting at the meeting whether in person or by proxy thereunto duly authorized in writing, and, in absence of a meeting, holders holding at least a majority in aggregate principal amount of such Notes and providing written consents, may approve the modification or amendment of, or a waiver of compliance for, any provision of the Notes except for specified matters requiring the consent of each holder, as set forth above. Modifications, amendments or waivers made at such a meeting will be binding on all current and future holders of such Notes.

Where an amendment, modification or other variance that can be made to the Indenture would affect the recognition of any Bail-Inable Notes by the Superintendent of Financial Institutions as TLAC, that amendment, modification or variance will require the prior approval of the Superintendent of Financial Institutions.

Trustee, Paying Agent and Authenticating Agent

The Indenture contains provisions regarding the appointment and removal of the Trustee, the Paying Agent and an Authenticating Agent. The Indenture provides that the Trustee may at any time resign and be discharged of its

responsibilities under the Indenture and of its responsibilities created by the Notes upon 60 days' prior written notice to the Bank and that the Bank may remove the Trustee at any time, for such good and reasonable cause as shall be determined in its sole discretion. If the Trustee resigns or is removed or shall become incapable of acting, or shall be adjudged bankrupt or insolvent, or if a receiver, liquidator or conservator of the Trustee, or of its property, shall be appointed, or if any public officer shall take charge or control of the Trustee, or of its property or affairs, or if a vacancy exists in the office of the Trustee for any reason, the Bank shall promptly appoint a successor Trustee. The Indenture further provides that the Trustee shall act as the Registrar and shall maintain at an office in the Borough of Manhattan, The City of New York.

The Indenture provides that the Trustee shall act as the Paying Agent with respect to the Notes, upon the terms and subject to the conditions set forth in the Indenture. The Indenture provides that the Bank may at any time vary or terminate the appointment of the Paying Agent and appoint a replacement Paying Agent or approve any change in the location of the Paying Agent. In addition, until all outstanding Notes have been delivered to the Trustee for cancellation or monies sufficient to make all such payments on all outstanding Notes have been made available for payment and either paid or returned to the Bank as provided in the Indenture and in the Notes, the Bank will maintain a Paying Agent in the Borough of Manhattan, The City of New York. If the Bank fails to appoint or maintain another entity as Paying Agent (when required pursuant to the Indenture), the Trustee shall act as the Paying Agent. The Bank shall require any Paying Agent other than the Trustee to agree in writing that it will hold in trust for the benefit of the holders or the Trustee all money and other property held by it for any payment due in respect of the Notes and will notify the Trustee of any default by the Bank in making any such payment.

The Indenture provides that the Trustee may appoint an Authenticating Agent or Agents with respect to the Notes which shall be authorized to act on behalf of the Trustee to authenticate, deliver, redeliver or endorse the Notes upon original issue or upon exchange, registration of transfer thereof or in replacement of mutilated, destroyed, stolen or lost certificates, and Notes so authenticated shall be entitled to the benefits of the Indenture and shall be valid and obligatory for all purposes as if authenticated by the Trustee under the Indenture.

The Trustee shall be under no liability for interest on any money or other property received by it under the Indenture except as otherwise agreed with the Bank.

The Bank of New York Mellon is initially serving as the Trustee for the Notes. The Bank of New York Mellon is also initially serving as trustee under our indenture dated as of June 13, 2012 and our indenture as of November 1, 2012, each for our debt securities that rank equally with the Notes. Consequently, if an actual or potential event of default occurs with respect to any of the Notes or such other debt securities, the Trustee may be considered to have a conflicting interest for purposes of the Trust Indenture Act of 1939. In that case, the Trustee may be required to resign under one or more of the indentures, and we would be required to appoint a successor trustee. For this purpose, a "potential" event of default means an event that would be an event of default if the requirements for giving us default notice or for the default having to exist for a specific period of time were disregarded.

Notices

The Indenture provides that, except as otherwise expressly provided therein, where notice to holders of Notes of any event is required to be given under the Indenture, such notice shall be sufficiently given if in writing and mailed, first-class postage prepaid, to each holder (or, in the case of joint holders, to the first holder named in the Register) affected by such event, at the address of each such holder as it appears in the Register, not later than the latest date (if any), and not earlier than the earliest date (if any), prescribed for the giving of such notice. In case by reason of the suspension of regular mail service or by reason of any other cause it shall be impracticable to give such notice to holders by mail, then such notification as shall be made with the approval of the Trustee shall constitute a sufficient notification for every purpose under the Indenture.

Notwithstanding the foregoing, the Indenture provides that, in the case of Global Notes, there may be substituted for such mailing of notice the delivery of the relevant notice to DTC for communication by it to the Direct Participants (as defined below) through whom the holders of interests in the relevant Global Notes hold their interests. Any notice shall be deemed to have been given on the date of the mailing of such notice.

Special Provisions Related to Bail-inable Notes

The Indenture provides for certain provisions applicable to Bail-inable Notes. The relevant Pricing Supplement will describe the specific terms of Bail-inable Notes we may issue and specify whether or not your Note is a Bail-inable Note.

Subject to certain exceptions discussed under “— Canadian Bank Resolution Powers,” including for certain structured notes, senior debt issued on or after September 23, 2018, with an initial or amended term to maturity (including explicit or embedded options) greater than 400 days, that is unsecured or partially secured and that has been assigned a CUSIP or ISIN or similar identification number, is subject to conversion in whole or in part by means of a transaction or series of transactions and in one or more steps into common shares of the Bank or any of its affiliates under the Bail-in Regime.

By its acquisition of any interest in any Bail-inable Note, each holder or beneficial owner of that debt security is deemed to (i) agree to be bound, in respect of the Bail-inable Notes, by the CDIC Act, including the conversion of the Bail-inable Notes, in whole or in part by means of a transaction or series of transactions and in one or more steps into common shares of the Bank or any of its affiliates under subsection 39.2(2.3) of the CDIC Act and the variation or extinguishment of the Bail-inable Notes in consequence, and by the application of the laws of the Province of Québec and the federal laws of Canada applicable therein in respect of the operation of the CDIC Act with respect to the Bail-inable Notes; (ii) attorn and submit to the jurisdiction of the courts in the Province of Québec with respect to the CDIC Act and those laws; (iii) acknowledge and agree that the terms referred to in clauses (i) and (ii) above, are binding on that holder or beneficial owner despite any provisions in the Indenture or the Bail-inable Notes, any other law that governs the Bail-inable Notes and any other agreement, arrangement or understanding between that holder or beneficial owner and the Bank with respect to the Bail-inable Notes, and (iv) have represented and warranted to the Bank that the Bank has not directly or indirectly provided financing to it for the express purpose of investing in Bail-inable Notes.

Holder and beneficial owners of Bail-inable Notes will have no further rights in respect of their Bail-inable Notes to the extent those Bail-inable Notes are converted in a Bail-in Conversion, other than those provided under the Bail-in Regime, and by its acquisition of an interest in any Bail-inable Note, each holder or beneficial owner of that Note is deemed to irrevocably consent to the converted portion of the principal amount of that Note and any accrued and unpaid interest thereon being deemed paid in full by the Bank by the issuance of common shares of the Bank (or, if applicable, any of its affiliates) upon the occurrence of a Bail-in Conversion, which Bail-in Conversion will occur without any further action on the part of that holder or beneficial owner or the trustee; provided that, for the avoidance of doubt, this consent will not limit or otherwise affect any rights that holders or beneficial owners may have under the Bail-in Regime.

Each holder or beneficial owner of a Bail-inable Note that acquires an interest in the Bail-inable Note in the secondary market and any successors, assigns, heirs, executors, administrators, trustees in bankruptcy and legal representatives of any holder or beneficial owner is deemed to acknowledge, accept, agree to be bound by and consent to the same provisions specified herein to the same extent as the holders or beneficial owners that acquired an interest in the Bail-inable Notes upon their initial issuance, including, without limitation, with respect to the acknowledgement and agreement to be bound by and consent to the terms of the Bail-inable Notes related to the Bail-in Regime.

Holder and beneficial owners of Bail-inable Notes will not be entitled to exercise, or direct the exercise of, any set-off or netting rights with respect to their Bail-inable Notes.

Canadian Bank Resolution Powers

General

Under Canadian bank resolution powers, the CDIC may, in circumstances where the Bank has ceased, or is about to cease, to be viable, assume temporary control or ownership of the Bank and may be granted broad powers by one or more Orders, including the power to sell or dispose of all or a part of the assets of the Bank, and the power to carry out or cause the Bank to carry out a transaction or a series of transactions the purpose of which is to restructure the business of the Bank. As part of the Canadian bank resolution powers, certain provisions of the Bail-in Regime provide for a bank recapitalization regime for banks designated by the Superintendent of Financial Institutions as D-SIBs, which include the Bank.

The expressed objectives of the Bail-in Regime include reducing government and taxpayer exposure in the unlikely event of a failure of a D-SIB, reducing the likelihood of such a failure by increasing market discipline and reinforcing that bank shareholders and creditors are responsible for the D-SIBs' risks and not taxpayers, and preserving financial stability by empowering the CDIC to quickly restore a failed D-SIB to viability and allow it to remain open and operating, even where the D-SIB has experienced severe losses.

Under the CDIC Act, in circumstances where the Superintendent of Financial Institutions is of the opinion that the Bank has ceased, or is about to cease, to be viable and viability cannot be restored or preserved by exercise of the Superintendent of Financial Institutions' powers under the Bank Act, the Superintendent of Financial Institutions, after providing the Bank with a reasonable opportunity to make representations, is required to provide a report to CDIC. Following receipt of the Superintendent of Financial Institutions' report, CDIC may request the Minister of Finance for Canada (the "**Minister of Finance**") to recommend that the Governor in Council (*Canada*) make an Order and, if the Minister of Finance is of the opinion that it is in the public interest to do so, the Minister of Finance may recommend that the Governor in Council (*Canada*) make, and on that recommendation, the Governor in Council (*Canada*) may make, one or more of the following Orders:

- vesting in CDIC, the shares and subordinated debt of the Bank specified in the Order, which we refer to as a "**Vesting Order**";
- appointing CDIC as receiver in respect of the Bank, which we refer to as a "**Receivership Order**";
- if a Receivership Order has been made, directing the Minister of Finance to incorporate a federal institution designated in the Order as a bridge institution wholly owned by CDIC and specifying the date and time as of which the Bank's deposit liabilities are assumed, which we refer to as a "**Bridge Bank Order**;" or
- if a Vesting Order or Receivership Order has been made, directing CDIC to carry out a conversion, by converting or causing the Bank to convert, in whole or in part by means of a transaction or series of transactions and in one or more steps the shares and liabilities of the Bank that are subject to the Bail-in Regime into common shares of the Bank or any of its affiliates, which we refer to as a "**Conversion Order**."

Following a Vesting Order or Receivership Order, CDIC will assume temporary control or ownership of the Bank and will be granted broad powers under that Order, including the power to sell or dispose of all or a part of the assets of the Bank, and the power to carry out or cause the Bank to carry out a transaction or a series of transactions the purpose of which is to restructure the business of the Bank.

Under a Bridge Bank Order, CDIC has the power to transfer the Bank's insured deposit liabilities and certain assets and other liabilities of the Bank to a bridge institution. Upon the exercise of that power, any assets and liabilities of the Bank that are not transferred to the bridge institution would remain with the Bank, which would then be wound up. In such a scenario, any liabilities of the Bank, including any outstanding Notes (whether or not such Notes are Bail-inable Notes), that are not assumed by the bridge institution could receive only partial or no repayment in the ensuing wind-up of the Bank.

Upon the making of a Conversion Order, prescribed shares and liabilities under the Bail-in Regime that are subject to that Conversion Order will, to the extent converted, be converted into common shares of the Bank or any of its affiliates, as determined by CDIC. Subject to certain exceptions discussed below, senior debt issued on or after September 23, 2018, with an initial or amended term to maturity (including explicit or embedded options) greater than 400 days, that is unsecured or partially secured and that has been assigned a CUSIP or ISIN or similar identification number are subject to a Bail-in Conversion. Shares, other than common shares, and subordinated debt of the Bank will also be subject to a Bail-in Conversion, unless they are non-viability contingent capital.

Shares and liabilities which would otherwise be bail-inable but were issued before September 23, 2018 will not be subject to a Bail-in Conversion unless, in the case of any such liability, including any notes, the terms of that liability are amended to increase the principal amount or to extend the term to maturity on or after September 23, 2018, and that liability, as amended, meets the requirements to be subject to a Bail-in Conversion. Covered bonds, derivatives and certain structured notes (as such terms are used in the Bail-in Regime) are expressly excluded from a Bail-in Conversion. To the extent that any notes constitute structured notes (as such term is used under the Bail-in

Regime) they will not be Bail-inable Notes. As a result, claims of some creditors whose claims would otherwise rank equally with those of the holders holding Bail-inable Notes would be excluded from a Bail-in Conversion and thus the holders and beneficial owners of Bail-inable Notes will have to absorb losses even when these other creditors do not as a result of the Bail-in Conversion. The terms and conditions of the Bail-in Conversion will be determined by CDIC in accordance with and subject to certain requirements discussed below.

We do not intend to re-open a previous issue of a series of Notes where such re-opening would have the effect of making the relevant Notes of such series subject to Bail-in Conversion.

Bail-in Conversion

Under the Bail-in Regime there is no fixed and pre-determined conversion ratio for the conversion of the Bail-inable Notes, or other shares or liabilities of the Bank that are subject to a Bail-in Conversion, into common shares of the Bank or any of its affiliates nor are there specific requirements regarding whether liabilities subject to a Bail-in Conversion are converted into shares of the Bank or any of its affiliates. CDIC determines the timing of the Bail-in Conversion, the portion of bail-inable shares and liabilities to be converted and the terms and conditions of the conversion, subject to parameters set out in the Bail-in Regime. Those parameters include that:

- in carrying out a Bail-in Conversion, CDIC must take into consideration the requirement in the Bank Act for banks to maintain adequate capital;
- CDIC must use its best efforts to ensure that shares and liabilities subject to a Bail-in Conversion are only converted after all subordinate ranking shares and liabilities that are subject to a Bail-in Conversion and any subordinate non-viability contingent capital instruments have been previously converted or are converted at the same time;
- CDIC must use its best efforts to ensure that the converted part of the liquidation entitlement of a share subject to a Bail-in Conversion, or the converted part of the principal amount and accrued and unpaid interest of a liability subject to a Bail-in Conversion, is converted on a pro rata basis for all shares or liabilities subject to a Bail-in Conversion of equal rank that are converted during the same restructuring period;
- holders of shares and liabilities that are subject to a Bail-in Conversion must receive a greater number of common shares per dollar of the converted part of the liquidation entitlement of their shares, or the converted part of the principal amount and accrued and unpaid interest of their liabilities, than holders of any subordinate shares or liabilities subject to a Bail-in Conversion that are converted during the same restructuring period or of any subordinate non-viability contingent capital that is converted during the same restructuring period;
- holders of shares or liabilities subject to a Bail-in Conversion of equal rank that are converted during the same restructuring period must receive the same number of common shares per dollar of the converted part of the liquidation entitlement of their shares or the converted part of the principal amount and accrued and unpaid interest of their liabilities; and
- holders of shares or liabilities subject to a Bail-in Conversion must receive, if any non-viability contingent capital of equal rank to the shares or liabilities is converted during the same restructuring period, a number of common shares per dollar of the converted part of the liquidation entitlement of their shares, or the converted part of the principal amount and accrued and unpaid interest of their liabilities, that is equal to the largest number of common shares received by any holder of the non-viability contingent capital per dollar of that capital.

Compensation Regime

The CDIC Act provides for a compensation process for holders of Bail-inable Notes who immediately prior to the making of an Order, directly or through an intermediary, own Bail-inable Notes that are converted in a Bail-in Conversion. While this process applies to successors of those holders it does not apply to assignees or transferees of the holder following the making of the Order and does not apply if the amounts owing under the relevant Bail-inable Notes are paid in full.

Under the compensation process, the compensation to which such holders are entitled is the difference, to the extent it is positive, between the estimated liquidation value and the estimated resolution value of the relevant Bail-inable Notes. The liquidation value is the estimated value the Bail-inable Noteholders would have received if an order under the *Winding-up and Restructuring Act* (Canada) had been made in respect of the Bank, as if no Order had been made and without taking into consideration any assistance, financial or otherwise, that is or may be provided to the Bank, directly or indirectly, by CDIC, the Bank of Canada, the Government of Canada or a province of Canada, after any order to wind up the Bank has been made.

The resolution value in respect of relevant Bail-inable Notes is the aggregate estimated value of the following: (a) the relevant Bail-inable Notes, if they are not held by CDIC and they are not converted, after the making of an Order, into common shares under a Bail-in Conversion; (b) common shares that are the result of a Bail-in Conversion after the making of an Order; (c) any dividend or interest payments made, after the making of the Order, with respect to the relevant Bail-inable Notes to any person other than CDIC; and (d) any other cash, securities or other rights or interests that are received or to be received with respect to the relevant Bail-inable Notes as a direct or indirect result of the making of the Order and any actions taken in furtherance of the Order, including from CDIC, the Bank, the liquidator of the Bank, if the Bank is wound up, the liquidator of a CDIC subsidiary incorporated or acquired by order of the Governor in Council for the purposes of facilitating the acquisition, management or disposal of real property or other assets of the Bank that CDIC may acquire as the result of its operations that is liquidated or the liquidator of a bridge institution if the bridge institution is wound up.

In connection with the compensation process, CDIC is required to estimate the liquidation value and the resolution value in respect of the portion of converted Bail-inable Notes and is required to consider the difference between the estimated day on which the liquidation value would be received and the estimated day on which the resolution value is, or would be, received.

CDIC must, within a reasonable period following a Bail-in Conversion, make an offer of compensation by notice to the relevant holders that held Bail-inable Notes equal to, or in value estimated to be equal to, the amount of compensation to which such holders are entitled or provide a notice stating that such holders are not entitled to any compensation. In either case such offer or notice is required to include certain prescribed information, including important information regarding the rights of such holders to seek to object and have the compensation to which they are entitled determined by an assessor (a Canadian Federal Court judge) where holders of liabilities representing at least 10% of the principal amount and accrued and unpaid interest of the liabilities of the same class object to the offer or absence of compensation. The period for objecting is limited (45 days following the day on which a summary of the notice is published in the *Canada Gazette*) and failure by holders holding a sufficient principal amount plus accrued and unpaid interest of affected Bail-inable Notes to object within the prescribed period will result in the loss of any ability to object to the offered compensation or absence of compensation, as applicable. CDIC will pay the relevant holders the offered compensation within 135 days after the date on which a summary of the notice is published in the *Canada Gazette* if the offer of compensation is accepted, or the holder does not notify CDIC of acceptance or objection to the offer or if the holder objects to the offer but the 10% threshold described above is not met within the aforementioned 45-day period.

Where an assessor is appointed, the assessor could determine a different amount of compensation payable, which could either be higher or lower than the original amount. The assessor is required to provide holders, whose compensation it determines, notice of its determination. The assessor's determination is final and there are no further opportunities for review or appeal. CDIC will pay the relevant holders the compensation amount determined by the assessor within 90 days of the assessor's notice.

By its acquisition of an interest in any Bail-inable Note, each holder or beneficial owner of that note is deemed to be bound by a Bail-in Conversion and so will have no further rights in respect of its Bail-inable Notes to the extent those Bail-inable Notes are converted in a Bail-in Conversion, other than those provided under the Bail-in Regime.

A similar compensation process to the one set out above applies, in certain circumstances, where as a result of CDIC's exercise of bank resolution powers, notes are assigned to an entity which is then wound-up.

TLAC Guideline

In connection with the Bail-in Regime, the TLAC Guideline applies to and establishes standards for D-SIBs, including the Bank. Under the TLAC Guideline, beginning November 1, 2021, the Bank is required to maintain a

minimum capacity to absorb losses composed of unsecured external long-term debt that meets the prescribed criteria or regulatory capital instruments to support recapitalization in the event of a failure. Bail-inable Notes and regulatory capital instruments that meet the prescribed criteria will constitute TLAC of the Bank.

In order to comply with the TLAC Guideline, our Indenture provides for terms and conditions for the Bail-inable Notes necessary to meet the prescribed criteria and qualify at their issuance as TLAC instruments of the Bank under the TLAC Guideline. Those criteria include the following:

- the Bank cannot directly or indirectly have provided financing to any person for the express purpose of investing in the Bail-inable Notes;
- the Bail-inable Note is not subject to set-off or netting rights;
- the Bail-inable Note must not provide rights to accelerate repayment of principal or interest payments outside of bankruptcy, insolvency, wind-up or liquidation, except that events of default relating to the non-payment of scheduled principal and/or interest payments will be permitted where they are subject to a cure period of no less than 30 business days and clearly disclose to investors that: (i) acceleration is only permitted where an Order has not been made in respect of the Bank; and (ii) notwithstanding any acceleration, the instrument continues to be subject to a Bail-in Conversion prior to its repayment;
- the Bail-inable Note may be redeemed or purchased for cancellation only at the initiative of the Bank and, where the redemption or purchase would lead to a breach of the Bank's TLAC requirements, that redemption or purchase would be subject to the prior approval of the Superintendent of Financial Institutions;
- the Bail-inable Note does not have credit-sensitive dividend or coupon features that are reset periodically based in whole or in part on the Bank's credit standing; and
- where an amendment or variance of the Bail-inable Note's terms and conditions would affect its recognition as TLAC, that amendment or variance will only be permitted with the prior approval of the Superintendent of Financial Institutions.

Role of Calculation Agent

The Calculation Agent will make all determinations regarding the reference rate, the amount payable on your Notes, and any other required determinations. Absent manifest error, all determinations of the Calculation Agent will be final and binding on you and us, without any liability on the part of the Calculation Agent.

Unless otherwise specified in the applicable Supplement, the Bank or one of its affiliates will be the Calculation Agent. We may change the Calculation Agent for your Notes at any time in our discretion without notice and the Calculation Agent may resign as Calculation Agent at any time upon 60 days' written notice to the Bank.

Additional Issuances

The Bank from time to time without the consent of the relevant Noteholders may create and issue additional Series of Notes having terms and conditions the same as (or the same in all respects except for the Issue Date, Interest Commencement Date and the Issue Price) Notes of an existing Series. These additional Notes shall be consolidated and form a single Series with the outstanding Notes of the existing Series.

Governing Law; Consent to Jurisdiction and Service of Process; Immunity

The Indenture, the Notes and the Guarantee will be governed and construed in accordance with the laws of the State of New York, except that by its acquisition of an interest in any Bail-inable Note, each holder or beneficial owner of that Note agrees to be bound, in respect of the Bail-inable Notes, by the CDIC Act, including the Bail-in Conversion, and by the application of the federal laws of Canada or of a province thereof in respect of the operation of the CDIC Act with respect to the Bail-inable Notes, and attorns to the jurisdiction of the courts in the Province of Québec with respect to actions, suits and proceedings arising out of or relating to the operation of the CDIC Act and the laws of the Province of Québec and the federal laws of Canada applicable therein in respect of the Indenture and the Bail-inable Notes.

The Bank has consented to the jurisdiction of the courts of the State of New York and the U.S. courts located in the Borough of Manhattan in New York City with respect to any action that may be brought in connection with the Notes, except those actions subject to the jurisdiction of the courts in the Province of Québec as provided in the paragraph above. The Bank has appointed National Bank of Canada, New York Branch (The Park Avenue Tower, 65 East 55th Street, 8th Floor, New York, NY 10022) as its agent upon whom process may be served in any action brought against the Bank in any U.S. or New York State court.

The Bank and its properties are currently not entitled to any sovereign or other immunity and the Bank has agreed that, to the extent that it may hereafter become entitled to any such immunity, it waives such immunity with respect to matters arising out of or in connection with the Notes.

Each of the Bank, the Trustee and the Guarantor has, pursuant to the Indenture, waived any right to trial by jury in any legal proceedings relating to the Notes. By your acceptance of a Note, you are also deemed to waive any such right to trial by jury in any legal proceedings relating to the Notes.

THE GUARANTEE

Neither the Notes nor the Guarantee are insured or guaranteed by the Federal Deposit Insurance Corporation or any other governmental agency or authority in the United States, Canada or elsewhere.

Pursuant to the Guarantee, NBCNY unconditionally and irrevocably guarantees to the holders of the Notes the Redemption Amount, together with interest (if any) or other amounts payable on the Notes, if such amounts have not been received by the holders at the time such payment is due and payable (after giving effect to all the applicable cure periods). Under the terms of the Guarantee, the Guarantor has waived diligence, presentment, demand, protest and notice of any kind with respect to the Guarantee. The Guarantor has also waived any requirement that the holders of the Notes exhaust any rights or take any action against the Bank in respect of the obligations covered by the Guarantee. The Guarantee provides that in the event of a default in payment of any amounts due and payable to the holders in respect of the Notes, the holders may institute legal proceedings directly against the Guarantor to enforce the Guarantee without first proceeding against the Bank.

The Guarantee (i) is a direct, general, unconditional, unsecured and unsubordinated obligation of the Guarantor and ranks equally with all other present and future unconditional, unsecured and unsubordinated obligations of the Guarantor, except those mandatorily preferred by law, (ii) is a continuing guarantee, (iii) is irrevocable and (iv) is a guarantee of payment of the amounts due and payable under the Notes and not of collection. The Guarantee shall not be discharged except by the payment of all amounts due and payable under the Notes. The Guarantee provides that it will remain in full force and effect or shall be reinstated if at any time any payment by the Bank on the Notes, in whole or in part, is rescinded or must otherwise be returned by any holder of the Notes upon the bankruptcy, insolvency, reorganization or similar proceeding involving the Bank, all as though such payment had not been made. ***The Guarantee, however, does not obligate the Guarantor or any other party to make a secondary market in the Notes or to make or guarantee any payments with respect to any secondary market transactions.***

The Indenture provides that the Guarantee will be governed by, and construed in accordance with, the laws of the State of New York, United States of America.

BOOK-ENTRY CLEARANCE SYSTEMS

The information set out below is subject to any change in or reinterpretation of the rules, regulations and procedures of the Clearing Systems currently in effect. The information in this section concerning the Clearing Systems has been obtained from sources that the Bank and the Guarantor believe to be reliable, but none of the Bank, the Guarantor, the Trustee nor any Agent takes any responsibility for the accuracy thereof. Investors wishing to use the facilities of any of the Clearing Systems are advised to confirm the continued applicability of the rules, regulations and procedures of the relevant Clearing System. None of the Bank, the Guarantor nor any other party to the Indenture will have any responsibility or liability for any aspect of the records relating to, or payments made on account of beneficial ownership interests in the Notes held through the facilities of any Clearing System or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

Book-Entry Systems

DTC

DTC will act as securities depository for the Notes. The Notes will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's nominee) or such other name as may be requested by an authorized representative of DTC.

DTC has advised the Bank that it is a limited purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code and a "clearing agency" registered pursuant to Section 17A of the Exchange Act. DTC holds and provides asset servicing for securities that its participants ("**Direct Participants**") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities through electronic computerized book-entry transfers and pledges between Direct Participants' accounts, thereby eliminating the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("**DTCC**"). DTCC is the holding company for DTC and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("**Indirect Participants**"). The rules applicable to its DTC and its participants are on file with the SEC. More information about DTC can be found at www.dtcc.com. We are not incorporating by reference into this document the website or any material it includes.

Purchases of the Notes under the DTC system must be made by or through Direct Participants, which will receive a credit for the Notes on DTC's records. The ownership interest of each actual purchaser of each Note ("**Beneficial Owner**") is in turn to be recorded on the Direct Participant's and Indirect Participant's records. Beneficial Owners will not receive written confirmation from DTC of their purchase, but Beneficial Owners are expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Notes are to be accomplished by entries made on the books of Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Notes, except in the event that use of the book-entry system for the Notes is discontinued.

To facilitate subsequent transfers, all of the Notes deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co. or such other nominee as may be requested by an authorized representative of DTC. The deposit of the Notes with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Notes; DTC's records reflect only the identity of the Direct Participants to whose accounts such Notes are credited, which may or may not be the Beneficial Owners. The Direct Participants and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices shall be sent to DTC. If less than all of the Notes within an issue are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such issue to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Notes unless authorized by a Direct Participant in accordance with DTC's Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Bank as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Notes are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal and interest payments on the Notes will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts, upon DTC's receipt of funds and corresponding detail information from the Bank or the Paying Agent, on the payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC or its nominee, the Paying Agent, the Bank, the Guarantor, the Trustee or the Agents, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of redemption proceeds, distributions, and dividend payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the Bank or the relevant Agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct Participants and Indirect Participants.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the Bank believes to be reliable, but the Bank takes no responsibility for the accuracy thereof.

Book-Entry Ownership of and Payments in Respect of the Notes

The Bank may apply to DTC in order to have the Notes represented by a Global Note accepted in its book-entry settlement system. Upon the issue of any such Global Note, DTC or its custodian will credit, on its internal book-entry system, the respective nominal amounts of the individual beneficial interests represented by such Global Note to the accounts of persons who have accounts with DTC. Such accounts initially will be designated by or on behalf of the relevant Agent. Ownership of beneficial interests in such a Global Note will be limited to Direct Participants or Indirect Participants, including, the respective depositories of CDS, Euroclear and Clearstream, Luxembourg. Ownership of beneficial interests in a Global Note accepted by DTC will be shown on, and the transfer of such ownership will be effected only through, records maintained by DTC or its nominee (with respect to the interests of Direct Participants) and the records of Direct Participants (with respect to interests of Indirect Participants).

Payments of principal and interest in respect of a Global Note accepted by DTC will be made to the order of DTC or its nominee as the registered holder of such Note.

The Bank expects DTC to credit accounts of Direct Participants on the applicable payment date in accordance with their respective holdings as shown in the records of DTC unless DTC has reason to believe that it will not receive payment on such payment date. The Bank also expects that payments by Participants to beneficial owners of Notes will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers, and will be the responsibility of such Participant and not the responsibility of DTC, the Trustee, the Paying Agent, the Registrar, the Bank, the Guarantor or the Agents. Payment of principal, premium, if any, and interest, if any, on Notes to DTC is the responsibility of the Bank, and the Guaranteed Amounts in respect thereof are obligations of the Guarantor under the Guarantee.

Transfers of Notes Represented by Global Notes

Transfers of any interests in Notes represented by a Global Note within CDS, DTC, Euroclear and Clearstream, Luxembourg will be effected in accordance with the customary rules and operating procedures of the relevant clearing system. The laws in some States within the United States require that certain persons take physical delivery of securities in definitive form. Consequently, the ability to transfer Notes represented by a Global Note to such persons may depend upon the ability to exchange such Notes for Notes in definitive form. Similarly, because DTC can only act on behalf of Direct Participants in the DTC system who in turn act on behalf of Indirect Participants, the ability of a person having an interest in Notes represented by a Global Note accepted by DTC to pledge such Notes

to persons or entities that do not participate in the DTC system or otherwise to take action in respect of such Notes may depend upon the ability to exchange such Notes for Notes in definitive form. The ability of any holder of Notes represented by a Global Note accepted by DTC to resell, pledge or otherwise transfer such Notes may be impaired if the proposed transferee of such Notes is not eligible to hold such Notes through a direct or indirect participant in the DTC system.

Subject to compliance with the transfer restrictions applicable to the Notes described under “*Plan of Distribution and Conflicts of Interest*,” cross-market transfers between DTC, on the one hand, and directly or indirectly through CDS, Clearstream, Luxembourg or Euroclear accountholders, on the other, will be effected by the relevant clearing system in accordance with its rules and through action taken by the Registrar, the Paying Agent and any custodian (“**Custodian**”) with whom the relevant Global Notes have been deposited.

Cross-market transfers between accountholders in CDS, Euroclear or Clearstream, Luxembourg and DTC participants will need to have an agreed settlement date between the parties to such transfer. Because there is no direct link between DTC, on the one hand, and CDS, Euroclear and Clearstream, Luxembourg, on the other, transfers of interests in the relevant Global Notes will be effected through the Registrar, the Paying Agent and the Custodian receiving instructions (and, where appropriate, certification) from the transferor and arranging for delivery of the interests being transferred to the credit of the designated account for the transferee. In the case of cross-market transfers, settlement between CDS, Euroclear or Clearstream, Luxembourg accountholders and DTC participants cannot be made on a delivery versus payment basis. The Notes will be delivered on a free delivery basis and arrangements for payment must be made separately.

DTC, CDS, Euroclear and Clearstream, Luxembourg have each published rules and operating procedures designed to facilitate transfers of beneficial interests in Global Notes among participants and accountholders of DTC, CDS, Euroclear and Clearstream, Luxembourg. However, they are under no obligation to perform or continue to perform such procedures, and such procedures may be discontinued or changed at any time. None of the Trustee, the Bank, the Guarantor, the Paying Agent or any Agent will be responsible for any performance by DTC, CDS, Euroclear or Clearstream, Luxembourg or their respective direct or indirect participants or accountholders of their respective obligations under the rules and procedures governing their operations and none of them will have any liability for any aspect of the records relating to or payments made on account of beneficial interests in the Notes represented by Global Notes or for maintaining, supervising or reviewing any records relating to such beneficial interests.

Bail-in Conversion

Upon a Bail-in Conversion, the Bank will provide a written notice to DTC and the holders of Bail-inable Notes through DTC as soon as practicable regarding such Bail-in Conversion. We will also deliver a copy of such notice to the trustee for information purposes.

By its acquisition of an interest in any Bail-inable Note, each holder or beneficial owner of that Note is deemed to have authorized, directed and requested DTC and any direct participant in DTC or other intermediary through which it holds such Bail-inable Note to take any and all necessary action, if required, to implement the Bail-in Conversion or other action pursuant to the Bail-in Regime with respect to the Bail-inable Note as it may be imposed on it, without any further action or direction on the part of that holder or beneficial owner, the trustee or the paying agent.

TAXATION

Canada

The following summary describes the principal Canadian federal income tax considerations under the *Income Tax Act* (Canada) (the “**Act**”) and the regulations thereunder generally applicable to a holder of Notes who acquires Notes, including entitlements to all payments thereunder, as a beneficial owner pursuant to this Offering Circular, and who, for purposes of the application of the Act and any applicable income tax treaty or convention, at all relevant times, is not resident and is not deemed to be resident in Canada, deals at arm’s length with the Bank and any Canadian resident (or deemed Canadian resident) to whom the holder disposes or is deemed to have disposed of the Notes, does not use or hold and is not deemed to use or hold Notes in or in the course of carrying on a business in Canada, is not a “specified shareholder” of the Bank and is not a person who does not deal at arm’s length with a specified shareholder of the Bank for purposes of subsection 18(5) of the Act and is not an insurer carrying on an insurance business in Canada and elsewhere (a “**Non-resident Holder**”).

This summary is based upon the provisions of the Act and the regulations thereunder in force on the date hereof, proposed amendments to the Act and the regulations thereunder in a form publicly announced prior to the date hereof by or on behalf of the Minister of Finance (Canada) (the “**Proposed Amendments**”) and Canadian counsel’s understanding of the current administrative and assessing practices and policies published in writing by the Canada Revenue Agency prior to the date hereof. This summary assumes that all Proposed Amendments will be enacted in the form proposed. There can be no assurance that the Proposed Amendments will be enacted as proposed or at all. This summary does not take into account or anticipate any other changes in law or administrative and assessing practices and policies, whether by legislative, governmental or judicial action or interpretation, nor does it take into account other federal or provincial, territorial or foreign income tax legislation or considerations. Subsequent developments could have a material effect on the following description.

Canadian federal income tax considerations applicable to Notes may be described more particularly when such Notes are offered (and then only to the extent material) in a Supplement related thereto if they are not addressed by the comments following and, in that event, the following will be superseded thereby to the extent indicated in such Supplement. These Canadian federal income tax considerations may also be supplemented, amended and/or replaced in a Supplement.

Interest paid or credited or deemed to be paid or credited by the Bank on a Note or by the Guarantor pursuant to the Guarantee (including amounts on account or in lieu of payment of, or in satisfaction of, interest and amounts paid at maturity in excess of the principal amount and interest deemed to be paid in certain cases involving the assignment or other transfer of a Note to a resident in Canada) to a Non-resident Holder will not be subject to Canadian withholding tax unless any portion of such interest (other than on a “prescribed obligation” described below) is contingent or dependent on the use of or production from property in Canada or is computed by reference to revenue, profit, cash flow, commodity price or any other similar criterion or by reference to dividends paid or payable to shareholders on any class of shares of a corporation (“**Participating Debt Interest**”). A “prescribed obligation” is a debt obligation the terms or conditions of which provide for an adjustment to any amount payable in respect of the obligation for a period during which the obligation was outstanding which adjustment is determined by reference to a change in the purchasing power of money where no amount payable in respect of such obligation, other than an amount determined by reference to a change in the purchasing power of money, is contingent or dependent upon any of the criteria described in the definition of Participating Debt Interest. If any interest paid or credited or deemed to be paid or credited on a Note is to be Participating Debt Interest, the Canadian non-resident withholding tax implications of the issuance of such Notes will be described particularly in the relevant Supplement for such Notes.

There should be no other taxes on income (including taxable capital gains) payable in respect of a Note or interest, discount, or premium thereon by a Non-resident Holder.

The foregoing summary is of a general nature only, and is not intended to be, nor should it be considered to be, legal or tax advice to any particular Non-resident Holder. Non-resident Holders should therefore consult their own tax advisers with respect to their particular circumstances.

United States Federal Income Taxation

The following summary discusses certain U.S. federal income tax consequences of the ownership and disposition of the Notes. Except as specifically noted below, this discussion applies only to:

- Notes purchased on original issuance at their “issue price” (as defined below)
- Notes held as capital assets for U.S. federal income tax purposes; and
- U.S. holders (as defined below).

This discussion does not describe all of the tax consequences that may be relevant in light of a holder’s particular circumstances, nor does it address any aspect of U.S. state and local, or non-U.S., tax laws. In particular, this discussion does not describe all of the tax consequences that may be relevant to holders subject to special rules, such as:

- financial institutions;
- insurance companies;
- tax-exempt organizations;
- real estate investment trusts;
- regulated investment companies;
- dealers in securities or foreign currencies;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons holding Notes as part of a hedging transaction, “straddle,” conversion transaction or other integrated transaction;
- persons that purchase or sell securities as part of a wash sale for tax purposes;
- persons that actually or constructively own 10% or more of our stock, by vote or value;
- persons liable for alternative minimum tax or Medicare contribution tax;
- persons subject to special tax accounting rules under Section 451(b) of the Code;
- certain former citizens or residents of the United States;
- U.S. holders whose functional currency is not the U.S. dollar; or
- partnerships or other entities classified as partnerships for U.S. federal income tax purposes.

This summary is based on the Code, administrative pronouncements, judicial decisions and final, temporary and proposed U.S. Treasury Regulations, changes to any of which subsequent to the date of this Offering Circular may affect the tax consequences described below. Persons considering the purchase of the Notes should consult the applicable Supplement for any additional discussion regarding U.S. federal income taxation and should consult their tax advisers with regard to the application of the U.S. federal tax laws to their particular situations as well as any tax consequences arising under the laws of any U.S. state and local, or non-U.S. taxing jurisdiction.

As used herein, the term “**U.S. holder**” means a beneficial owner of a Note that is for U.S. federal income tax purposes:

- a citizen or individual resident of the United States;

- a corporation (or other entity classified as a corporation) created or organized in or under the laws of the United States or of any state thereof;
- a trust if (i) a U.S. court can exercise primary supervision over the trust's administration and one or more U.S. persons are authorized to control all substantial decisions of the trust, or (ii) the trust has a valid election in place under U.S. Treasury Regulations to be treated as a U.S. person for U.S. federal income tax purposes; or
- an estate whose income is subject to U.S. federal income taxation regardless of its source.

If an entity that is classified as a partnership for U.S. federal income tax purposes holds Notes, the U.S. federal income tax treatment of a partner will generally depend on the status of the partner and upon the activities of the partnership. Partners of partnerships holding Notes should consult with their tax advisers.

Characterization of the Notes

Subject to the discussion below regarding Bail-inable Notes, the Bank generally intends to treat Notes issued under the Program as debt for U.S. federal income tax purposes, unless otherwise indicated in the applicable Supplement. The tax treatment of Notes to which a treatment other than as debt may apply may be discussed in the applicable Supplement. The following disclosure applies only to Notes that are treated as debt for U.S. federal income tax purposes.

There is no authority that specifically addresses the U.S. federal income tax treatment of an instrument such as the Bail-inable Notes. While the Bank intends to treat the Bail-inable Notes as debt for U.S. federal income tax purposes, the IRS could assert an alternative tax treatment of the Bail-inable Notes for U.S. federal income tax purposes, for example, that the Bail-inable Notes should be considered as equity for U.S. federal income tax purposes. There can be no assurance that any alternative tax treatment, if successfully asserted by the IRS, would not have adverse U.S. federal income tax consequences to a U.S. holder of Bail-inable Notes. However, treatment of the Bail-inable Notes as equity for U.S. federal income tax purposes should not result in inclusions of income with respect to the Bail-inable Notes that are materially different than the U.S. federal income tax consequences if the Bail-inable Notes are treated as debt for U.S. federal income tax purposes. In particular, if the Bail-inable Notes are treated as equity for U.S. federal income tax purposes, it is unclear whether interest payments on the Bail-inable Notes that are treated as dividends for U.S. federal income tax purposes would be eligible to be treated as "qualified dividend income" for U.S. federal income tax purposes (which are generally taxed at preferential rates). Accordingly, it is likely that amounts treated as dividends would be taxed at ordinary income tax rates.

You should consult your own tax advisers regarding the appropriate characterization of, and U.S. federal income tax and other tax consequences of investing in, the Notes.

Payments of Stated Interest

Interest paid on a Note will be taxable to a U.S. holder as ordinary interest income at the time it accrues or is received in accordance with the holder's method of accounting for U.S. federal income tax purposes, provided that the interest is "qualified stated interest" (as defined below). Interest income earned by a U.S. holder with respect to a Note will constitute foreign source income for U.S. federal income tax purposes, which may be relevant in calculating the holder's foreign tax credit limitation. The rules regarding foreign tax credits are complex and prospective investors should consult their tax advisers about the application of such rules to them in their particular circumstances. Special rules governing the treatment of interest paid with respect to original issue discount Notes, certain Notes that have a variable interest rate, short-term Notes and foreign currency Notes are described under "*Taxation – United States Federal Income Taxation – Original Issue Discount*," "*– Variable Rate Debt Instruments*," "*– Short-Term Notes*" and "*– Foreign Currency Notes*."

Original Issue Discount

A Note that has an "issue price" that is less than its "stated redemption price at maturity" will be considered to have been issued at an original issue discount for U.S. federal income tax purposes (and will be referred to as an "**original issue discount Note**") unless the Note satisfies a *de minimis* threshold (as described below) or is a short-term Note (as defined below). The "**issue price**" of a Note generally will be the first price at which a substantial

amount of the Notes are sold to the public (which does not include sales to bond houses, brokers or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers). The “**stated redemption price at maturity**” of a Note generally will equal the sum of all payments required to be made under the Note other than payments of “qualified stated interest.” “**Qualified stated interest**” is stated interest unconditionally payable (other than in debt instruments of the issuer) at least annually during the entire term of the Note and equal to the outstanding principal balance of the Note multiplied by a single fixed rate of interest. In addition, qualified stated interest includes, among other things, stated interest on a “variable rate debt instrument” (as defined below). If the terms of Notes that mature more than one year from their date of issuance provide for certain contingencies that affect the timing and amount of payments (including Notes with a variable rate or rates that do not qualify as “variable rate debt instruments” for purposes of the original issue discount rules) they will be “contingent payment debt instruments” for U.S. federal income tax purposes. The proper U.S. federal income tax treatment of “contingent payment debt instruments” may be more fully described in the applicable Supplement.

If the difference between a Note's stated redemption price at maturity and its issue price is less than a *de minimis* amount, i.e., 1/4 of 1 percent of the stated redemption price at maturity multiplied by the number of complete years to maturity (or, if the Note is an installment obligation as defined for these purposes, the weighted average maturity), the Note will not be considered to have original issue discount. U.S. holders of Notes with a *de minimis* amount of original issue discount generally will include this original issue discount in income, as capital gain, on a pro rata basis as principal payments are made on the Note.

A U.S. holder of original issue discount Notes will be required to include any qualified stated interest payments in income in accordance with the holder's method of accounting for U.S. federal income tax purposes. U.S. holders of original issue discount Notes that mature more than one year from their date of issuance will be required to include original issue discount in income for U.S. federal tax purposes as it accrues in accordance with a constant yield method based on a compounding of interest, regardless of whether cash attributable to this income is received.

A U.S. holder may make an election to include in gross income all interest that accrues on any Note (including stated interest, acquisition discount, original issue discount, *de minimis* original issue discount, market discount, *de minimis* market discount and unstated interest, as adjusted by any amortizable bond premium or acquisition premium) in accordance with a constant yield method based on the compounding of interest, and may revoke such election only with the permission of the U.S. Internal Revenue Service (“IRS”) (a “**constant yield election**”). Generally, a constant yield election will apply only to the Note for which a U.S. holder makes it; however, if the Note has amortizable bond premium, the U.S. holder would be deemed to have made an election discussed below under “*Taxation – United States Federal Income Taxation – Acquisition Premium and Amortizable Bond Premium*” to apply amortizable bond premium against interest for all debt instruments with amortizable bond premium, other than debt instruments the interest on which is excludible from gross income, that the U.S. holder holds as of the beginning of the taxable year to which the election applies or any taxable year thereafter. Additionally, if a U.S. holder makes this election for a Note with market discount, the U.S. holder would be treated as having made the election discussed below under “*Taxation – United States Federal Income Taxation – Market Discount*” to include market discount in income currently over the life of all debt instruments with market discount that the U.S. holder acquires on or after the first day of the first taxable year to which the election applies. A U.S. holder may not revoke any election to apply the constant-yield method to all interest on a Note or the deemed elections with respect to debt instruments with amortizable bond premium or market discount without the consent of the IRS.

The Bank may have an unconditional option to redeem, or U.S. holders may have an unconditional option to require the Bank to redeem, a Note prior to its stated maturity date. Under applicable regulations, if the Bank has an unconditional option to redeem a Note prior to its stated maturity date, this option will be presumed to be exercised if, by utilizing any date on which the Note may be redeemed as the maturity date and the amount payable on that date in accordance with the terms of the Note as the stated redemption price at maturity, the yield on the Note would be lower than its yield to maturity. If the U.S. holders have an unconditional option to require the Bank to redeem a Note prior to its stated maturity date, this option will be presumed to be exercised if making the same assumptions as those set forth in the previous sentence, the yield on the Note would be higher than its yield to maturity. If this option is not in fact exercised, the Note would be treated solely for purposes of calculating original issue discount as if it were retired and then reissued, on the presumed exercise date for an amount equal to the Note's adjusted issue price on that date. The adjusted issue price of an original issue discount Note is defined as the sum of the issue price of the Note and the aggregate amount of previously accrued original issue discount, less any prior payments other than payments of qualified stated interest.

Variable Rate Debt Instruments

A Note will generally be a “**variable rate debt instrument**” if: (i) the issue price does not exceed the total noncontingent principal payments by more than the lesser of: (a) 0.015 multiplied by the product of the total noncontingent principal payments and the number of complete years to maturity from the issue date (or, in the case of an installment obligation, the weighted average maturity), or (b) 15 percent of the total noncontingent principal payments, and (ii) the Note provides for stated interest, compounded or paid at least annually, only at: (a) one or more “qualified floating rates,” (b) a single fixed rate and one or more “qualified floating rates,” (c) a single “objective rate,” or (d) a single fixed rate and a single “objective rate” that is a “qualified inverse floating rate.”

A Note will have a variable rate that is a “**qualified floating rate**” if: (i) variations in the value of the rate can reasonably be expected to measure contemporaneous variations in the cost of newly borrowed funds in the currency in which the Note is denominated, or (ii) the rate is equal to such a rate multiplied by either: (a) a fixed multiple that is greater than 0.65 but not more than 1.35, or (b) a fixed multiple greater than 0.65 but not more than 1.35, increased or decreased by a fixed rate, and (iii) the value of the rate on any date during the term of the Note is set no earlier than three months prior to the first day on which that value is in effect and no later than one year following that first day.

If a Note provides for two or more qualified floating rates that are within 0.25 percentage points of each other on the issue date or can reasonably be expected to have approximately the same values throughout the term of the Note, the qualified floating rates together constitute a single qualified floating rate.

A Note will not have a qualified floating rate, however, if the rate is subject to certain restrictions (including caps, floors, governors, or other similar restrictions) unless, in general, such restrictions are fixed throughout the term of the Note or are not reasonably expected to significantly affect the yield on the Note.

A Note will have a variable rate that is a single “**objective rate**” if: (i) the rate is not a qualified floating rate, (ii) the rate is determined using a single, fixed formula that is based on objective financial or economic information that is not within the control of or unique to the circumstances of the issuer or a related party, and (iii) the value of the rate on any date during the term of the Note is set no earlier than three months prior to the first day on which that value is in effect and no later than one year following that first day.

A Note will not have a variable rate that is an objective rate, however, if it is reasonably expected that the average value of the rate during the first half of the Note’s term will be either significantly less than or significantly greater than the average value of the rate during the final half of the Note’s term.

An objective rate as described above is a “**qualified inverse floating rate**” if: (i) the rate is equal to a fixed rate minus a qualified floating rate, and (ii) the variations in the rate can reasonably be expected to inversely reflect contemporaneous variations in the qualified floating rate.

A Note will also have a single qualified floating rate or an objective rate if interest on the Note is stated at a fixed rate for an initial period of one year or less followed by either a qualified floating rate or an objective rate for a subsequent period, and either: (i) the fixed rate and the qualified floating rate or objective rate have values on the issue date of the Note that do not differ by more than 0.25 percentage points, or (ii) the value of the qualified floating rate or objective rate on the issue date of the Note is intended to approximate the fixed rate (a “**single fixed rate for an initial period**”).

In general, if a Note provides for annual stated interest, unconditionally payable in cash or property (other than debt instruments of the issuer), at a single qualified floating rate or objective rate, or one of those rates after a single fixed rate for an initial period, all stated interest on the Note is qualified stated interest. In this case, the amount of original issue discount, if any, is determined by using, in the case of a qualified floating rate or qualified inverse floating rate, the value as of the issue date of the qualified floating rate or qualified inverse floating rate, or, for any other objective rate, a fixed rate that reflects the yield reasonably expected for the Note. The qualified stated interest allocable to an accrual period is adjusted if the interest actually paid during an accrual period exceeds or is less than the interest assumed to be paid during the accrual period under this paragraph.

If a Note does not provide for stated interest at a single qualified floating rate or a single objective rate, and also does not provide for interest payable at a fixed rate other than a single fixed rate for an initial period, a U.S. holder

generally must determine the interest and original issue discount accruals on the Note by: (i) determining a fixed rate substitute for each variable rate provided under the variable rate debt instrument, (ii) constructing the equivalent fixed rate debt instrument, using the fixed rate substitute described above, (iii) determining the amount of qualified stated interest and original issue discount with respect to the equivalent fixed rate debt instrument, and (iv) adjusting for actual variable rates during the applicable accrual period.

In determining the fixed rate substitute for each variable rate provided under the variable rate debt instrument, U.S. holder will use the value of each variable rate as of the issue date or, for an objective rate that is not a qualified inverse floating rate, a rate that reflects the reasonably expected yield on the Note.

If a Note provides for stated interest either at one or more qualified floating rates or at a qualified inverse floating rate and also provides for stated interest at a single fixed rate other than at a single fixed rate for an initial period, a U.S. holder generally must determine interest and original issue discount accruals by using the method described in the second preceding paragraph. However, a Note will be treated, for purposes of the first three steps of the determination, as if the Note had provided for a qualified floating rate, or a qualified inverse floating rate, rather than the fixed rate. The qualified floating rate, or qualified inverse floating rate, that replaces the fixed rate must be such that the fair market value of the Note as of the issue date approximates the fair market value of an otherwise identical debt instrument that provides for the qualified floating rate, or qualified inverse floating rate, rather than the fixed rate.

Short-Term Notes

A Note that matures one year or less from its date of issuance (a “**short-term Note**”) will be treated as being issued at a discount and none of the interest paid on the Note will be treated as qualified stated interest. In general, a cash method U.S. holder of a short-term Note is not required to accrue the discount for U.S. federal income tax purposes unless it elects to do so, but may be required to include any stated interest in income as the interest is received. Holders who so elect and certain other holders, including those who report income on the accrual method of accounting for U.S. federal income tax purposes, are required to include the discount in income as it accrues on a straight-line basis, unless another election is made to accrue the discount according to a constant yield method based on daily compounding. The discount that such holders are required to include in income generally is the amount of original issue discount (the excess of the stated redemption price at maturity over the Note’s issue price) unless a holder elects instead to accrue the amount by which the stated redemption price at maturity exceeds the holder’s basis in the Note. In the case of a U.S. holder who is not required and who does not elect to include the discount in income currently, any gain realized on the sale, exchange, retirement, or other disposition of the short-term Note will be ordinary income to the extent of the original issue discount accrued on a straight-line basis (or, if elected, according to a constant yield method based on daily compounding) through the date of sale, exchange, retirement, or other disposition. In addition, those U.S. holders will be required to defer deductions for any interest paid on indebtedness incurred to purchase or carry short-term Notes in an amount not exceeding the accrued discount until the accrued discount is included in income.

Market Discount

If a U.S. holder purchases a Note (other than a short-term Note) for an amount that is less than its stated redemption price at maturity or, in the case of an original issue discount Note, its adjusted issue price (generally, the sum of its issue price and any previously accrued OID), the amount of the difference will be treated as market discount for U.S. federal income tax purposes, unless this difference is less than a specified *de minimis* amount, i.e., 1/4th of 1 percent of the stated redemption price at maturity multiplied by the number of complete years to maturity.

A U.S. holder will be required to treat any principal payment (or, in the case of an original issue discount Note, any payment that does not constitute qualified stated interest) on, or any gain on the sale, exchange, retirement or other disposition of a Note, including dispositions in certain nonrecognition transactions, as ordinary income to the extent of the market discount accrued on the Note at the time of the payment or disposition unless this market discount has been previously included in income by the U.S. holder pursuant to an election by the holder to include market discount in income as it accrues, or pursuant to a constant yield election by the holder as described under “*Taxation – United States Federal Income Taxation – Original Issue Discount*” above. In addition, the U.S. holder may be required to defer, until the maturity of the Note or its earlier sale, exchange, retirement, or other disposition (including certain

nontaxable transactions), the deduction of all or a portion of the interest expense on any indebtedness incurred or maintained to purchase or carry such Note.

If a U.S. holder makes a constant yield election (as described under “*Taxation – United States Federal Income Taxation – Original Issue Discount*”) for a Note with market discount, such election will result in a deemed election for all debt instruments with market discount acquired by the holder on or after the first day of the first taxable year to which such election applies.

Acquisition Premium and Amortizable Bond Premium

A U.S. holder who purchases a Note for an amount that is greater than the Note's adjusted issue price but less than or equal to the sum of all amounts payable on the Note after the purchase date other than payments of qualified stated interest will be considered to have purchased the Note at an acquisition premium. Under the acquisition premium rules, the amount of original issue discount that the U.S. holder must include in its gross income with respect to the Note for any taxable year will be reduced by the portion of acquisition premium properly allocable to that year.

If a U.S. holder purchases a Note for an amount that is greater than the amount payable at maturity (defined to include all amounts payable on the Note after the purchase date through maturity other than payments of qualified stated interest), the holder will be considered to have purchased the Note with amortizable bond premium equal in amount to the excess of the purchase price over the amount payable at maturity. The holder may elect to amortize this premium, using a constant yield method, over the remaining term of the Note. If the Note may be redeemed at the Bank's option prior to maturity after the holder has acquired it, the amount of amortizable bond premium is determined by substituting the call date for the maturity date and the call price for the amount payable at maturity if the substitution results in a smaller amount of premium attributable to the period before the redemption date. A holder who elects to amortize bond premium must reduce his tax basis in the Note by the amount of the premium amortized in any year. An election to amortize bond premium applies to all taxable debt obligations then owned and thereafter acquired by the holder and may be revoked only with the consent of the IRS.

If a U.S. holder makes a constant yield election (as described under “*Taxation – United States Federal Income Taxation – Original Issue Discount*”) for a Note with amortizable bond premium, such election will result in a deemed election to amortize bond premium for all of the holder's debt instruments with amortizable bond premium.

Sale, Exchange or Retirement of the Notes

Upon the sale, exchange, retirement, or other disposition of a Note, a U.S. holder will recognize taxable gain or loss equal to the difference between the amount realized on the sale, exchange, retirement, or other disposition and the holder's adjusted tax basis in the Note. A U.S. holder's adjusted tax basis in a Note generally will equal the acquisition cost of the Note increased by the amount of original issue discount and market discount included in the Holder's gross income and decreased by the amount of any payment received from the Bank other than a payment of qualified stated interest. Gain or loss, if any, will generally be U.S. source income for purposes of computing a U.S. holder's foreign tax credit limitation. For these purposes, the amount realized does not include any amount attributable to accrued interest or market discount on the Note. Amounts attributable to accrued interest are treated as interest as described under “*Taxation – United States Federal Income Taxation – Payments of Stated Interest*.”

Except as described below, gain or loss realized on the sale, exchange, retirement, or other disposition of a Note will generally be capital gain or loss and will be long-term capital gain or loss if at the time of sale, exchange, retirement, or other disposition the Note has been held for more than one year. Exceptions to this general rule apply to the extent of any accrued market discount or, in the case of a short-term Note, to the extent of any accrued discount not previously included in the holder's taxable income. See “*Taxation – United States Federal Income Taxation – Original Issue Discount*” and “*– Market Discount*.” In addition, other exceptions to this general rule apply in the case of foreign currency Notes. See “*Taxation – United States Federal Income Taxation – Foreign Currency Notes*.”

Foreign Currency Notes

The following discussion summarizes certain U.S. federal income tax consequences to a U.S. holder of the ownership and disposition of Notes that are denominated in a specified currency other than the U.S. dollar or the payments of interest or principal on which are payable in a currency other than the U.S. dollar (“**foreign currency Notes**”).

The rules applicable to foreign currency Notes could require some or all gain or loss on the sale, exchange, retirement, or other disposition of a foreign currency Note to be recharacterized as ordinary income or loss. The rules applicable to foreign currency Notes are complex and may depend on the holder's particular U.S. federal income tax situation. For example, various elections are available under these rules, and whether a holder should make any of these elections may depend on the holder's particular U.S. federal income tax situation. U.S. holders are urged to consult their own tax advisers regarding the U.S. federal income tax consequences of the ownership and disposition of foreign currency Notes.

A U.S. holder who uses the cash method of accounting and who receives a payment of qualified stated interest in a foreign currency with respect to a foreign currency Note will be required to include in income the U.S. dollar value of the foreign currency payment (determined on the date the payment is received) regardless of whether the payment is in fact converted to U.S. dollars at the time, and this U.S. dollar value will be the U.S. holder's tax basis in the foreign currency. A cash method holder who receives a payment of qualified stated interest in U.S. dollars pursuant to an option available under such Note will be required to include the amount of this payment in income upon receipt.

With respect to interest that must be included in a U.S. holder's income on an accrual basis (including, for example, where the interest is original issue discount or the U.S. holder uses the accrual method of accounting), the U.S. holder will be required to include in income the U.S. dollar value of the amount of interest income (reduced by acquisition premium and amortizable bond premium, to the extent applicable) that has accrued and is otherwise required to be taken into account with respect to a foreign currency Note during an accrual period. The U.S. dollar value of the accrued income will be determined by translating the income at the average rate of exchange for the accrual period or, with respect to an accrual period that spans two taxable years, at the average rate for the partial period within the taxable year. Alternatively, the U.S. holder may elect to translate interest income (including original issue discount) into U.S. dollars at the spot rate on the last day of the interest accrual period (or, in the case of a partial accrual period, the spot rate on the last day of the taxable year) or, if the date of receipt is within five business days of the last day of the interest accrual period, the spot rate on the date of receipt. A U.S. holder that makes this election must apply it consistently to all debt instruments from year to year and cannot change the election without the consent of the IRS. The U.S. holder will recognize ordinary income or loss with respect to accrued interest income on the date the income is actually received. The amount of ordinary income or loss recognized will equal the difference between the U.S. dollar value of the foreign currency payment received (determined on the date the payment is received) in respect of the accrual period (or, where a holder receives U.S. dollars, the amount of the payment in respect of the accrual period) and the U.S. dollar value of interest income that has accrued during the accrual period (as determined above).

Original issue discount, market discount, acquisition premium and amortizable bond premium on a foreign currency Note are to be determined in the relevant foreign currency. Where the U.S. holder elects to include market discount in income currently, the amount of market discount will be determined for any accrual period in the relevant foreign currency and then translated into U.S. dollars on the basis of the average rate in effect during the accrual period. Exchange gain or loss realized with respect to such accrued market discount shall be determined in accordance with the rules relating to accrued interest described above.

If an election to amortize bond premium is made, amortizable bond premium taken into account on a current basis shall reduce interest income in units of the relevant foreign currency. Exchange gain or loss is realized on amortized bond premium with respect to any period by treating the bond premium amortized in the period in the same manner as on the sale, exchange, retirement, or other disposition of the foreign currency Note. Any exchange gain or loss will be ordinary income or loss as described below. If the election is not made, any loss realized on the sale, exchange, retirement, or other disposition of a foreign currency Note with amortizable bond premium by a U.S. holder who has not elected to amortize the premium will be a capital loss to the extent of the bond premium.

A U.S. holder's tax basis in a foreign currency Note, and the amount of any subsequent adjustment to the holder's tax basis, will be the U.S. dollar value amount of the foreign currency amount paid for such foreign currency Note, or of the foreign currency amount of the adjustment, determined on the date of the purchase or adjustment. A U.S. holder who purchases a foreign currency Note with previously owned foreign currency will recognize ordinary income or loss in an amount equal to the difference, if any, between such U.S. holder's tax basis in the foreign currency and the U.S. dollar fair market value of the foreign currency Note on the date of purchase.

Gain or loss realized upon the sale, exchange, retirement, or other disposition of a foreign currency Note that is attributable to fluctuations in currency exchange rates will be ordinary income or loss which will not be treated as interest income or expense. Gain or loss attributable to fluctuations in exchange rates will equal the difference between (i) the U.S. dollar value of the foreign currency principal amount of the Note, determined on the date the payment is received or the Note is disposed of, and (ii) the U.S. dollar value of the foreign currency principal amount of the Note, determined on the date the U.S. holder acquired the Note. Payments received attributable to accrued interest will be treated in accordance with the rules applicable to payments of interest on foreign currency Notes described above. The foreign currency gain or loss will be recognized only to the extent of the total gain or loss realized by the holder on the sale, exchange, retirement, or other disposition of the foreign currency Note. The source of the foreign currency gain or loss will be determined by reference to the residence of the holder or the “qualified business unit” of the holder on whose books the Note is properly reflected. Any gain or loss realized by these holders in excess of the foreign currency gain or loss will be capital gain or loss except to the extent of any accrued market discount or, in the case of a short-term Note, to the extent of any discount not previously included in the holder's income. Holders should consult their own tax adviser with respect to the tax consequences of receiving payments in a currency different from the currency in which payments with respect to such Note accrue.

A U.S. holder will have a tax basis in any foreign currency received on the sale, exchange, retirement, or other disposition of a foreign currency Note equal to the U.S. dollar value of the foreign currency, determined at the time of sale, exchange, retirement, or other disposition. A U.S. holder that is a cash method taxpayer who buys or sells a foreign currency Note is required to translate units of foreign currency paid or received into U.S. dollars at the spot rate on the settlement date of the purchase or sale. Accordingly, no exchange gain or loss will result from currency fluctuations between the trade date and the settlement date of the purchase or sale. A U.S. holder that is an accrual method taxpayer may elect the same treatment for all purchases and sales of foreign currency obligations provided that the Notes are traded on an established securities market. This election cannot be changed without the consent of the IRS. Any gain or loss realized by a U.S. holder on a sale or other disposition of foreign currency (including its exchange for U.S. dollars or its use to purchase foreign currency Notes) will be ordinary income or loss.

Backup Withholding and Information Reporting

Information returns may be filed with the IRS in connection with payments on the Notes and the proceeds from a sale, exchange, retirement, or other disposition of the Notes. A U.S. holder may be subject to U.S. backup withholding on these payments if it fails to provide its tax identification number to the paying agent and comply with certain certification procedures or otherwise establish an exemption from backup withholding. The amount of any backup withholding from a payment to a U.S. holder will be allowed as a credit against the holder's U.S. federal income tax liability and may entitle them to a refund, provided that the required information is furnished to the IRS.

Additionally, individual U.S. holders may be required to report to the IRS certain information with respect to their beneficial ownership of the Notes. Investors who fail to report required information could be subject to substantial penalties. Certain information reporting requirements are described more fully below under “*Taxation — United States Federal Income Taxation — Information with Respect to Foreign Financial Assets*” and “*Reportable Transactions*.”

Information with Respect to Foreign Financial Assets

Owners of “specified foreign financial assets” with an aggregate value in excess of \$50,000 (and in some circumstances a higher threshold) may be required to file an information report with respect to such assets with their tax returns. “Specified foreign financial assets” include any financial accounts maintained by foreign financial institutions, as well as any of the following, but only if they are held for investment and not held in accounts maintained by financial institutions: (i) stocks and securities issued by non-U.S. persons, (ii) financial instruments and contracts that have non-United States issuers or counterparties, and (iii) interests in foreign entities. The Notes may be subject to these rules. Holders are urged to consult their tax advisors regarding the application of these rules to their ownership of the Notes.

Reportable Transactions

A U.S. holder that participates in a “reportable transaction” will be required to disclose its participation to the IRS. The scope and application of these rules is not entirely clear. A U.S. holder may be required to treat a foreign currency exchange loss from the Notes as a reportable transaction if the loss exceeds \$50,000 in a single taxable year

if the U.S. holder is an individual or trust, or higher amounts for other U.S. holders. In the event the acquisition, ownership or disposition of Notes constitutes participation in a “reportable transaction” for purposes of these rules, a U.S. holder will be required to disclose its investment by filing Form 8886 with the IRS. Prospective purchasers should consult their tax advisers regarding the application of these rules to the acquisition, ownership or disposition of Notes.

Foreign Account Tax Compliance Act

FATCA imposes a reporting regime and a 30% withholding tax with respect to certain payments to any non-U.S. financial institution (a “**foreign financial institution**,” or “**FFI**” (as defined by FATCA)) that does not become a “**Participating FFI**” by entering into an agreement with the IRS to, among other things, provide the IRS with certain information in respect of its account holders and investors or is not otherwise exempt from or in deemed compliance with FATCA.

This withholding regime will apply to “foreign passthru payments” (a term not yet defined) no earlier than the date that is two years after the date on which final U.S. Treasury regulations defining the term foreign passthru payment are published in the Federal Register. In the case of “foreign passthru payments,” this withholding would potentially apply to payments in respect of any Notes that are not “grandfathered obligations.” A grandfathered obligation includes any obligation that is executed on or before the date that is six months after the date on which final U.S. Treasury regulations defining the term foreign passthru payment are filed with the Federal Register, and such obligation is not materially modified after such date. If any Notes are treated as grandfathered obligations, and additional Notes of the same series issued later in time are not treated as grandfathered obligations, there may be negative consequences for the existing earlier issued Notes, including a negative impact on market price.

If an amount in respect of FATCA withholding were to be deducted or withheld from interest, principal or other payments made in respect of the Notes, neither the Bank nor any paying agent nor any other person would be required to pay additional amounts as a result of the deduction or withholding. As a result, investors may receive less interest or principal than expected.

The U.S. federal income tax discussion set forth above is included for general information only and may not be applicable depending upon your particular situation. You should consult your own tax advisers with respect to the tax consequences to you of the acquisition, ownership and disposition of the Notes, including the tax consequences under U.S. state and local, non-U.S., and other tax laws and the possible effects of changes in U.S. federal or other tax laws.

ERISA AND CERTAIN OTHER U.S. BENEFIT PLAN CONSIDERATIONS

The U.S. Employee Retirement Income Security Act of 1974, as amended (“**ERISA**”), imposes certain requirements on “employee benefit plans” (as defined in Section 3(3) of ERISA) subject to ERISA, including entities such as collective investment funds and separate accounts whose underlying assets include the assets of such plans (collectively, “**ERISA Plans**”) and on those persons who are fiduciaries with respect to ERISA Plans. Each fiduciary of an ERISA Plan should consider the fiduciary standards of ERISA in the context of the plan’s particular circumstances before authorizing an investment in the Notes. Accordingly, among other factors, the fiduciary should consider whether the investment would satisfy the prudence and diversification requirements of ERISA and would be consistent with the documents and instruments governing the plan.

Section 406 of ERISA and Section 4975 of the U.S. Internal Revenue Code of 1986, as amended (the “**Code**”), prohibit certain transactions involving the assets of an ERISA Plan (as well as those plans that are not subject to ERISA but which are subject to Section 4975 of the Code, such as individual retirement accounts and entities whose underlying assets include the assets of such plans (together with ERISA Plans, “**Plans**”)) and certain persons (referred to as “**parties in interest**” or “**disqualified persons**”) having certain relationships to such Plans, unless a statutory or administrative exemption is applicable to the transaction. Prohibited transactions within the meaning of Section 406 of ERISA or Section 4975 of the Code may arise if any Notes are acquired by a Plan with respect to which any of the Bank, the Guarantor, the Trustee, the Agents or any of their respective affiliates are a party in interest or a disqualified person. A violation of these prohibited transaction rules could result in an excise tax or other liabilities under ERISA and/or Section 4975 of the Code for such persons.

Certain exemptions from the prohibited transaction provisions of Section 406 of ERISA and Section 4975 of the Code may be applicable, however, depending in part on the type of Plan fiduciary making the decision to acquire Notes and the circumstances under which such decision is made. Those exemptions include prohibited transaction class exemption (“**PTCE**”) 96-23 (for certain transactions determined by in-house asset managers), PTCE 95-60 (for certain transactions involving insurance company general accounts), PTCE 91-38 (for certain transactions involving bank collective investment funds), PTCE 90-1 (for certain transactions involving insurance company separate accounts), and PTCE 84-14 (for certain transactions determined by independent qualified asset managers). In addition, Section 408(b)(17) of ERISA and Section 4975(d)(20) of the Code provide a statutory exemption for certain transactions with a person that is a party in interest or disqualified person solely by reason of providing services to Plans or being an affiliate of such a service provider (the “**Service Provider Exemption**”).

There can be no assurance that any exemption will be available with respect to any particular transaction involving the Notes, or that, if an exemption is available, it will cover all aspects of any particular transaction.

Because the Bank, the Guarantor, the Trustee, the Agents, or any of their respective affiliates may be considered a party in interest with respect to many Plans, the Notes may not be purchased, held or disposed of by any Plan, unless such purchase, holding or disposition is eligible for exemptive relief under an applicable statutory, class or individual prohibited transaction exemption, including relief available under PTCE 96-23, 95-60, 91-38, 90-1, or 84-14 or the Service Provider Exemption.

Governmental plans (as defined in Section 3(32) of ERISA), while not subject to the fiduciary responsibility provisions of ERISA or the provisions of Section 4975 of the Code, may nevertheless be subject to local, state or other laws that are substantially similar to Title I of ERISA or Section 4975 of the Code (“**Similar Law**”). Governmental and certain church plans are also subject to the prohibited transaction rules in Section 503(b) of the Code. Fiduciaries of any such plans should consult with their counsel before purchasing any Notes.

By its purchase of any Notes (or any interest in a Note), each purchaser (whether in the case of the initial purchase or in the case of a subsequent transferee) will be deemed to have represented and agreed that either (i) it is not and for so long as it holds a Note (or any interest therein) will not be a Plan or a plan subject to Similar Law, or (ii) its acquisition, holding and disposition of the Notes will not, in the case of a Plan, constitute or result in a non-exempt prohibited transaction under Section 406 of ERISA or Section 4975 of the Code because the conditions for relief under an applicable statutory, class or individual prohibited transaction exemption are satisfied or, in the case of a plan subject to Similar Law, will not result in a violation of any such Similar Law.

The foregoing discussion is general in nature and not intended to be all-inclusive. If you are a Plan or other plan fiduciary who proposes to cause a Plan or other plan to purchase any Notes, you should consult with your counsel

and other advisers regarding the applicability of the fiduciary responsibility and prohibited transaction provisions of ERISA and Section 4975 of the Code and Similar Law to such an investment, and to confirm that such investment will not constitute or result in a prohibited transaction or any other violation of an applicable requirement of ERISA, the Code or Similar Law. The sale of Notes to a Plan or other plan is in no respect a representation by the Bank, the Guarantor, the Trustee or the Agents that such an investment meets all relevant requirements with respect to investments by Plans or other plans generally or any particular Plan or other plan, or that such an investment is appropriate for Plans or other plans generally or any particular Plan or other plan.

PLAN OF DISTRIBUTION AND CONFLICTS OF INTEREST

The Notes being offered pursuant to this Offering Circular are being offered on a periodic basis for sale by the Bank and the Guarantor through NBCFI and each Agent appointed from time to time by the Bank and the Guarantor under and in accordance with the terms of the Distribution Agreement, dated June 9, 2020, as it may be amended or supplemented from time to time (the “Distribution Agreement”). The Bank and the Guarantor will pay the applicable Agent a commission which will equal the percentage of the principal amount of any such Note sold through such Agent. The Bank and the Guarantor may sell Notes to an Agent, as principal, at a discount from the principal amount thereof, and such Agent may later resell such Notes to investors and other purchasers at varying prices related to prevailing market prices at the time of sale as determined by such Agent. The Bank and the Guarantor may also sell Notes directly to, and may solicit and accept offers to purchase directly from, investors on their own behalf in those jurisdictions where they are authorized to do so. The Notes being offered pursuant to this Offering Circular will be offered in accordance with the provisions of the Distribution Agreement.

In addition, the Agents may offer the Notes they have purchased as principal to other Agents. The Agents may sell Notes to any Agent at a discount. Unless otherwise indicated in the applicable Supplement, any Note sold to an Agent as principal will be purchased by such Agent at a price equal to 100% of the principal amount thereof less a percentage equal to the commission applicable to any agency sale of a Note of identical term, and may be resold by such Agent to investors and other purchasers from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale or may be resold to certain dealers as described above. After the initial offering of Notes to be resold to investors and other purchasers on a fixed offering price basis, the offering price, concession and discount may be changed.

NBCFI, a broker-dealer affiliate of the Bank, is a member of the FINRA. If NBCFI participates as Agent in the distribution of certain Notes, offerings of those Notes will conform to the requirements of Rule 5121 applicable to FINRA members, and NBCFI may not make sales of those Notes to any of its discretionary accounts without the prior written approval of the account holder.

The Bank and the Guarantor reserve the right to withdraw, cancel or modify the offer made hereby without notice and may reject orders in whole or in part whether placed directly with the Bank and the Guarantor or through an Agent. Each Agent will have the right, in its discretion reasonably exercised, to reject any offer to purchase Notes received by it, in whole or in part.

In connection with an offering of Notes purchased by one or more Agents as principal on a fixed offering price basis, such Agent(s) will be permitted to over-allot or engage in transactions that stabilize the price of Notes. These transactions may consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of Notes. If the Agent creates or the Agents create, as the case may be, a short position in Notes, that is, if it sells or they sell Notes in an aggregate principal amount exceeding that set forth in the applicable Supplement, such Agent(s) may reduce that short position by purchasing Notes in the open market. In general, purchases of Notes for the purpose of stabilization or to reduce a short position could cause the price of Notes to be higher than it might be in the absence of such purchases. Such stabilization if commenced, may be discontinued at any time and must be brought to an end after a limited period. Such stabilization, if any, shall be in compliance with all laws.

The Agents may impose a penalty bid. This occurs when a particular Agent repays to the Agents a portion of the commission received by it because the other Agents have repurchased Notes sold by or for the account of such Agent in stabilizing or short covering transactions.

None of the Bank, the Guarantor or any of the Agents makes any representation or prediction as to the direction or magnitude of any effect that the transactions described in the immediately preceding paragraph may have on the price of Notes. In addition, none of the Bank, the Guarantor or any of the Agents make any representation that the Agents will engage in any such transactions or that such transactions, once commenced, will not be discontinued without notice.

The Agents may from time to time purchase and sell Notes in the secondary market, but they are not obligated to do so, and there can be no assurance that there will be a secondary market for the Notes or liquidity in the secondary market if one develops. From time to time, the Agents may make a market in the Notes.

The Bank may use this Offering Circular in the initial sale of any Note. In addition, NBCFI or any other affiliate of the Bank may use this Offering Circular in a market-making transaction in any Note after its initial sale. This Offering Circular will be used in a market-making transaction unless the Bank or its Agent informs the purchaser otherwise in a confirmation of sale.

Each Agent participating in the offering of the Notes will represent and agree that it will comply with all applicable laws and regulations in force in any jurisdiction in which it purchases, offers, sells, or delivers the securities or possesses or distributes the applicable Supplement or this Offering Circular and will obtain any consent, approval, or permission required by it for the purchase, offer, or sale by it of the securities under the laws and regulations in force in any jurisdiction to which it is subject to in which it makes purchase, offers, or sales of the securities, and the Bank shall not have responsibility for the Agent's compliance with the applicable laws and regulations or obtaining any required consent, approval, or permission. The Bank and the Guarantor have agreed to indemnify the several Agents against and to make contributions relating to certain liabilities, including liabilities under the Securities Act.

The Agents 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, principal investment, hedging, financing and brokerage activities. In the ordinary course of their various business activities, the Agents 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 (which may include bank loans and/or credit default swaps) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. In addition, certain of the Agents and their affiliates have engaged, and may in the future engage, in investment banking and/or commercial banking transactions with, and may perform services for, the Bank in the ordinary course of business without regard to the Bank, the Guarantor, the Trustee or the holders of the Notes. Certain of the Agents or their respective affiliates that have a lending relationship with us routinely hedge their credit exposure to us consistent with their customary risk management policies. A typical such hedging strategy would include these Agents or their respective affiliates hedging such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities, including potentially the Notes offered hereby. Any such credit default swaps or short positions could adversely affect future trading prices of the Notes. The Agents and their respective affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Selling Restrictions

The selling restrictions below may be modified by the agreement of the Bank and the Guarantor and the relevant Agents, including following a change in a relevant law, regulation or directive. Any such modification will be set out in a Supplement issued in respect of the issue of Notes to which it relates. No action has been taken in any country or jurisdiction by the Bank, the Guarantor or the Agents that would permit a public offering of any of the Notes, or possession or distribution of any offering material in relation thereto, in any country or jurisdiction where action for that purpose is required.

Each Agent has agreed and each further Agent appointed by the Bank and the Guarantor will be required to agree (to the best of its knowledge and belief) to comply with all applicable securities laws and regulations in each jurisdiction in which it purchases, offers, sells or delivers Notes or has in its possession or distributes the Offering Circular or any other offering material, in all cases at its own expense.

Persons into whose hands the Offering Circular, any Supplement or other offering materials in respect of the Notes comes are, and each Noteholder is, required by the Bank, the Guarantor and the Agents to comply with all applicable laws and regulations in each country or jurisdiction in or from which they purchase, offer, sell or deliver Notes or have in their possession or distribute such offering material, in all cases at their own expense.

Canada

The Bank confirms that the Notes may be offered, sold or distributed by National Bank of Canada Financial Inc., or other Agents if approved by the Bank, in each case in such provinces of Canada as are agreed with the Bank and in compliance with any applicable securities laws in Canada. Each Agent (other than National Bank of Canada

Financial Inc.) has represented and agreed that it will not, directly or indirectly, offer, sell or deliver, any of the Notes in or from Canada or to any resident in Canada without the consent of the Bank.

Each Agent has agreed not to distribute or deliver this Offering Circular, or any other offering material relating to the Notes, in Canada in contravention of the securities laws of Canada or any province or territory thereof.

United States of America

Purchasers of Notes in the United States are advised to consult legal counsel prior to making any purchase, offer, sale, resale, pledge or other transfer of Notes.

The Notes have not been registered with the SEC under the Securities Act and are offered and sold pursuant to an exemption from registration under Section 3(a)(2) of the Securities Act.

Each purchaser of the Notes or person wishing to acquire an interest in a Global Note will be required to acknowledge, represent and agree as follows:

- (a) that either (i) it is not and for so long as it holds a Note (or any interest therein) will not be a Plan or a plan subject to Similar Law, or (ii) its acquisition, holding and disposition of the Notes will not, in the case of a Plan, constitute or result in a non-exempt prohibited transaction under Section 406 of ERISA or Section 4975 of the Code because the conditions for relief under an applicable statutory, class or individual prohibited transaction exemption are satisfied or, in the case of such a plan subject to Similar Law, will not result in a violation of any such Similar Law; and
- (b) that the Bank and others will rely upon the truth and accuracy of the foregoing acknowledgements, representations and agreements and agrees that if any of such acknowledgements, representations or agreements made by it are no longer accurate, it shall promptly notify the Bank; and if it is acquiring any Notes as a fiduciary or agent for one or more accounts it represents that it has sole investment discretion with respect to each such account and that it has full power to make the foregoing acknowledgements, representations and agreements on behalf of each such account.

European Economic Area

Each Agent has represented and agreed that it has not offered, sold or otherwise made available and will not offer, sell or otherwise make available the Notes to any retail investor in the European Economic Area or in the United Kingdom. Consequently no key information document required by the PRIIPs Regulation for offering or selling the Notes or otherwise making the Notes available to retail investors in the European Economic Area has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the European Economic Area or in the United Kingdom may be unlawful under the PRIIPs Regulation. For the purposes of this provision:

- (a) the expression “retail investor” means a person who is one (or more) of the following:
 - (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, “**MiFID II**”); or
 - (ii) a customer within the meaning of Directive (EU) 2016/97 (as amended or superseded) 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 Regulation (EU) 2017/1129 (the “**Prospectus Regulation**”);
- (b) the expression “offer” includes the communication in any form and by any means of sufficient information on the terms of the offer and the Notes to be offered so as to enable an investor to decide to purchase or subscribe the Notes; and
- (c) the expression “PRIIPs Regulation” means Regulation (EU) No 1286/2014.

Each person in a Member State or in the United Kingdom who receives any communication in respect of, or who acquires any Notes under, the offers contemplated by this Offering Circular and the applicable Supplement will be deemed to have represented, warranted and agreed to and with each Agent and the Bank that: (i) it and any person on whose behalf it acquires the Notes is a Qualified Investor and (ii) it is not a retail investor (as described above).

References to Regulations or Directives include, in relation to the United Kingdom, those Regulations or Directives as they form part of United Kingdom domestic law by virtue of the European Union (Withdrawal) Act 2018 or have been implemented in United Kingdom domestic law, as appropriate.

Selling Restrictions addressing additional United Kingdom Securities Laws

Each Agent has represented, warranted and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) received by it in connection with the issue or sale of any Notes in circumstances in which Section 21(1) of the FSMA does not apply to the Guarantor or, in the case of the Bank, would not, if the Bank was not an authorized person, apply to the Bank; and
- (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to any Notes in, from or otherwise involving the United Kingdom.

Hong Kong

In relation to Notes issued by the Bank, each Agent has represented and agreed that

- (a) it has not offered or sold and will not offer or sell in the Hong Kong Special Administrative Region of the People's Republic of China ("**Hong Kong**"), by means of any document, any Notes (except for Notes which are a "structured product" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong (the "**SFO**")) other than (i) to "professional investors" as defined in the SFO and any rules made under the SFO, or (ii) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong (the "**CO**") or which do not constitute an offer to the public within the meaning of the CO; and
- (b) it has not issued or had in its possession for the purposes of issue, and will not issue or have in its possession for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation, or document relating to the Notes, which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to the Notes that are or are intended to be disposed of (i) only to persons outside Hong Kong or (ii) only to "professional investors" as defined in the SFO and any rules made under the SFO.

Japan

The Notes have not been and will not be registered under the Financial Instruments and Exchange Act of Japan (Law No. 25 of 1948, as amended, the "**FIEA**") and each Agent has represented and agreed that it will not offer or sell any Notes, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (as defined under Item 5, Paragraph 1, Article 6 of the Foreign Exchange and Foreign Trade Control Law (Law No. 228 of 1949, as amended)), or to others for re-offering or resale, directly or indirectly, in Japan or to, or for the benefit of, a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEA and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

Each Agent has represented and agreed, and each additional Agent appointed under the Program will be required to represent and agree, that this Offering Circular has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, each Agent has represented and agreed, and each additional Agent appointed under the Program will be required to represent and agree, that it has not offered or sold any Notes or caused the Notes

to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this Offering Circular or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of any Notes, whether directly or indirectly, to any person in Singapore other than (a) to an institutional investor pursuant to Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the “**Securities and Futures Act**”), (b) to a relevant person under Section 275(1) of the Securities and Futures Act or to any person pursuant to Section 275(1A) of the Securities and Futures Act and in accordance with the conditions specified in Section 275 of the Securities and Futures Act, or (c) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the Securities and Futures Act.

Where the Notes are subscribed or purchased under Section 275 of the Securities and Futures Act by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the Securities and Futures Act)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the Securities and Futures Act) of that corporation or the beneficiaries’ rights and interest (howsoever described) in that trust shall not be transferable for 6 months after that corporation or that trust has acquired the Notes pursuant to an offer under Section 275 of the Securities and Futures Act except:

- (i) to an institutional investor under Section 274 or to a relevant person pursuant to Section 275(1A) of the Securities and Futures Act and in accordance with the conditions specified in Section 275 of the Securities and Futures Act; or
- (ii) where no consideration is or will be given for the transfer;
- (iii) where the transfer is by operation of law
- (iv) as specified in Section 276(7) of the Securities and Futures Act; or
- (v) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

Singapore Securities and Futures Act Product Classification – Solely for the purposes of its obligations pursuant to sections 309B(1)(a) and 309B(1)(c) of the SFA, the Bank has determined, and hereby notifies all relevant persons (as defined in Section 309A of the SFA) that the Notes are prescribed capital markets products (as defined in Section 309B(10) of the SFA) and excluded investment products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Switzerland

This Offering Circular does not constitute an issue prospectus pursuant to Article 652a or Article 1156 of the Swiss Code of Obligations and the Notes will not be listed on the SIX Swiss Exchange. Therefore, this Offering Circular may not comply with the disclosure standards of the listing rules (including any additional listing rules or prospectus schemes) of the SIX Swiss Exchange. Accordingly, the Notes may not be offered to the public in or from Switzerland, but only to a selected and limited circle of investors who do not subscribe to the Notes with a view to distribution. Any such investors will be individually approached by the Agents from time to time.

LIMITATIONS ON ENFORCEMENT OF U.S. LAWS AGAINST THE BANK, ITS MANAGEMENT AND OTHERS

We are a Canadian chartered bank. Many of our directors and executive officers and some of the experts named in this document, are resident outside the United States, and a substantial portion of our assets and all or a substantial portion of the assets of such persons are located outside the United States. As a result, it may be difficult for investors to effect service of process within the United States upon such persons to enforce against them judgments of the courts of the United States predicated upon, among other things, the civil liability provisions of the federal securities laws of the United States. In addition, it may be difficult for investors to enforce, in original actions brought in courts in jurisdictions located outside the United States, among other things, civil liabilities predicated upon such securities laws.

We have been advised by our Canadian counsel, McCarthy Tétrault LLP, that a judgment of a United States court predicated solely upon civil liability of a compensatory nature under such laws would probably be enforceable under applicable Canadian law if the United States court in which the judgment was obtained has a basis for jurisdiction in the matter that was recognized by a Canadian court for such purposes and if the other relevant criteria for the recognition of foreign judgments have been fulfilled. We have also been advised by such counsel, however, that there is some residual doubt whether an original action could be brought successfully in Canada predicated solely upon such civil liabilities.

INDEPENDENT AUDITOR AND PRESENTATION OF FINANCIAL RESULTS

The consolidated financial statements of the Bank as of October 31, 2019 and 2018 and for the years ended October 31, 2019 and 2018 incorporated by reference into this Offering Circular have been audited by Deloitte LLP, our independent auditor, as stated in their report incorporated by reference therein.

Unless the context otherwise requires, references herein to “2019,” when used in connection with a discussion of our 2019 Annual Report, means our fiscal year ended October 31, 2019. We refer to prior fiscal years in a corresponding manner.

The audited consolidated financial statements contained in our 2019 Annual Report and the unaudited interim condensed consolidated financial statements contained in our 2020 Second Quarterly Report were prepared in accordance with International Financial Reporting Standards issued by the International Accounting Standards Board (“IFRS”). IFRS differs in certain respects from U.S. Generally Accepted Accounting Principles.

Due to rounding, the numbers presented throughout this Offering Circular may not add up precisely, and percentages may not precisely reflect absolute figures.

LEGAL MATTERS

The validity of the Notes under New York law will be passed upon for us by our United States counsel, Mayer Brown LLP, New York, New York. McCarthy Tétrault LLP, Montréal, Québec will pass upon certain matters for us under Canadian law.

Up to U.S.\$3,500,000,000 Structured Notes

**unconditionally and irrevocably guaranteed as to payments by
NATIONAL BANK OF CANADA, NEW YORK BRANCH**

OFFERING CIRCULAR

June 9, 2020