

**Pricing Supplement to Short Form Base Shelf Prospectus dated January 30, 2018,  
the Prospectus Supplement thereto dated January 30, 2018 and  
the Prospectus Supplement thereto dated January 30, 2018**

*No securities regulatory authority has expressed an opinion about these securities and it is an offence to claim otherwise.*

*This pricing supplement together with the short form base shelf prospectus dated January 30, 2018, the prospectus supplement dated January 30, 2018 and the prospectus supplement dated January 30, 2018, to which it relates, as amended or supplemented, and each document incorporated by reference into such prospectus, constitutes a public offering of these securities only in those jurisdictions where they may be lawfully offered for sale and therein only by persons permitted to sell such securities.*

*The securities to be issued hereunder have not been, and will not be, registered under the United States Securities Act of 1933, as amended and, subject to certain exceptions, may not be offered, sold or delivered, directly or indirectly, in the United States of America or for the account or benefit of U.S. persons.*



**Royal Bank of Canada  
Senior Note Program  
Index Linked Securities  
Maximum \$20,000,000 (200,000 Securities)  
RBC LiONS™ S&P/TSX 60 Accelerator Barrier Securities,  
Series 9  
Due January 31, 2025  
Non-Principal Protected Securities**

**January 14, 2019**

Royal Bank of Canada (the “**Bank**”) is offering up to \$20,000,000 of RBC LiONS™ S&P/TSX 60 Accelerator Barrier Securities, Series 9 (which we refer to as the “**Securities**” for the purpose of this pricing supplement only and not for the purpose of the “base shelf prospectus” as defined below), designed for investors who are seeking an investment product with exposure to the large-cap segment of the Canadian equity market. Payment at maturity on the Securities will be based on the price performance of the S&P/TSX 60 Index (the “**Index**”). In the case of positive price performance only, payment at maturity on the Securities will be subject to the Participation Rate (defined herein). In the case of a negative price performance, if the Final Index Level (defined herein) is below the Barrier Level (defined herein), then some, or substantially all, of the Principal Amount (defined herein) invested could be lost at maturity. See “Suitability for Investment” in this pricing supplement (the “**pricing supplement**”).

The initial estimated value of the Securities as of January 9, 2019 was \$93.25 per Security, which is less than the price to the public and is not an indication of the actual profit to the Bank or its affiliates. The actual value of the Securities at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount. We describe our determination of the initial estimated value in more detail below. See “Risk Factors” and “Preparation of Initial Estimated Value”.

The Securities are described in this pricing supplement delivered together with our short form base shelf prospectus dated January 30, 2018 (the “**base shelf prospectus**”), the prospectus supplement establishing our Senior Note Program dated January 30, 2018 (the “**program supplement**”) and a prospectus supplement which generally describes index linked securities that we may offer under our Senior Note Program dated January 30, 2018 (the “**product supplement**”).

**The Securities are not fixed income securities and are not designed to be alternatives to fixed income or money market instruments. The Securities are structured products that possess downside risk.**

**The Securities will not constitute deposits insured under the *Canada Deposit Insurance Corporation Act*.**

**An investment in the Securities involves risks. An investment in the Securities is not the same as a direct investment in the securities that comprise the index to which the Securities are linked and investors have no rights with respect to the securities underlying such index. The Securities are considered to be “specified derivatives” under applicable Canadian securities laws. If you purchase Securities, you will be exposed to changes in the level of the Index and fluctuations in interest rates, among other factors. Index levels are volatile and an investment in the Securities may be considered to be speculative. Since the Securities are not principal protected and the Principal Amount will be at risk, you could lose substantially all of your investment. See “Risk Factors”.**

Price: \$100 per Security

Minimum Subscription: \$5,000 (50 Securities)

	Price to public	Selling Commissions and Dealer’s fee <sup>(1)</sup>	Net proceeds to the Bank
Per Security	\$100.00	\$4.25	\$95.75
Total <sup>(2)</sup>	\$20,000,000	\$850,000	\$19,150,000

(1) A commission of 4.25% of the Principal Amount of Securities issued under this offering will be paid to the Dealers (defined below) for further payment to representatives, including representatives employed by the Dealers, whose clients purchase the Securities. An agency fee will also be paid, from the Bank’s own funds, to Laurentian Bank Securities Inc. in an amount up to 0.15% of the Principal Amount of the Securities issued under this offering for acting as independent agent.

(2) Reflects the maximum offering size of the Securities. **There is no minimum amount of funds that must be raised under this offering. This means that the issuer could complete this offering after raising only a small proportion of the offering amount set out above.**

The Securities are offered severally by RBC Dominion Securities Inc. (“**RBC DS**”) and Laurentian Bank Securities Inc. (collectively, the “**Dealers**”) as agents under a dealer agreement dated January 30, 2018, as amended or supplemented from time to time. **RBC DS is our wholly owned subsidiary. Consequently, we are a related and connected issuer of RBC DS within the meaning of applicable securities legislation.** See “Dealers” in this pricing supplement and “Plan of Distribution” in the program supplement.

The Securities will not be listed on any stock exchange. Securities may be resold using the Fundserv network at a price determined at the time of sale by the Calculation Agent (defined herein), which price may be lower than the Principal Amount of such Securities. The Securities will also be subject to specified early trading charges, depending on when the Securities are sold. There is no assurance that a secondary market for the Securities will develop or be sustained. See “Secondary Market for Securities”, “Description of the Securities—Calculation Agent” and “Risk Factors” in the program supplement and “Secondary Market” in this pricing supplement.

## Prospectus for Securities

Securities described in this pricing supplement will be issued under our Senior Note Program and will be unsecured, unsubordinated debt obligations. The Securities are Senior Debt Securities (as defined in the base shelf prospectus referred to below) and are described in four separate documents: (1) the base shelf prospectus, (2) the program supplement, (3) the product supplement, and (4) this pricing supplement, all of which collectively constitute the “prospectus” for the Securities. See “Prospectus for Securities” in the program supplement.

## Documents Incorporated by Reference

This pricing supplement is deemed to be incorporated by reference into the base shelf prospectus solely for the purpose of our Senior Note Program and the Securities issued hereunder. Other documents are also incorporated or deemed to be incorporated by reference into the base shelf prospectus and reference should be made to the base shelf prospectus for full particulars.

## Marketing Materials

The version of the summary for the Securities that was filed with the securities commissions or similar regulatory authorities in each of the provinces and territories of Canada as “marketing materials” (as defined in National Instrument 41-101 – *General Prospectus Requirements*) on January 14, 2019 is deemed to be incorporated by reference into the base shelf prospectus solely for the purpose of our Senior Note Program and the Securities issued hereunder. Any version of marketing materials filed with the securities commission or similar regulatory authority in each of the provinces and territories of Canada in connection with this offering after the date hereof but prior to the termination of the distribution of the Securities under this pricing supplement (including any amendments to, or an amended version of, the marketing materials) is deemed to be incorporated by reference herein and in the base shelf prospectus solely for the purpose of our Senior Note Program and the Securities issued hereunder. Any such marketing materials are not part of this pricing supplement or the base shelf prospectus to the extent that the contents of the marketing materials have been modified or superseded by a statement contained in an amendment to this pricing supplement.

## Caution Regarding Forward-Looking Statements

From time to time, we make written or oral forward-looking statements within the meaning of certain securities laws, including the “safe harbour” provisions of the United States Private Securities Litigation Reform Act of 1995 and any applicable Canadian securities legislation. We may make forward-looking statements in the base shelf prospectus and in the documents incorporated by reference therein, in the program supplement, in the product supplement, in this pricing supplement, in other filings with Canadian regulators or the United States Securities and Exchange Commission, in reports to shareholders and in other communications. Forward-looking statements in, or incorporated by reference in, this prospectus include, but are not limited to, statements relating to our financial performance objectives, vision and strategic goals, the Economic, market, and regulatory review and outlook section of our management’s discussion and analysis for the year ended October 31, 2018 (the “**2018 Management’s Discussion and Analysis**”) for Canadian, U.S., European and global economies, the regulatory environment in which we operate, the Strategic priorities and Outlook sections in the 2018 Management’s Discussion and Analysis for each of our business segments and the risk environment including our liquidity and funding risk, and includes our President and Chief Executive Officer’s statements. The forward-looking information contained in, or incorporated by reference in, this prospectus is presented for the purpose of assisting the holders of our securities and financial analysts in understanding our financial position and results of operations as at and for the periods ended on the dates presented, as well as our financial performance objectives, vision and strategic goals, and may not be appropriate for other purposes. Forward-looking statements are typically identified by words such as “believe”, “expect”, “foresee”, “forecast”, “anticipate”, “intend”, “estimate”, “goal”, “plan” and “project” and similar expressions of future or conditional verbs such as “will”, “may”, “should”, “could” or “would”.

By their very nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, which give rise to the possibility that our predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that our assumptions may not be correct and that our financial performance objectives, vision and strategic goals will not be achieved. We caution readers not to place undue reliance on these statements as a number of risk factors could cause our actual results to differ materially from the expectations expressed in such forward-looking statements. These factors – many of which are beyond our control and the effects of which can be difficult to predict – include: credit, market, liquidity and funding, insurance, operational, regulatory compliance, strategic, reputation, legal and regulatory environment, competitive and systemic risks and other risks discussed in the risk sections of the 2018 Management’s Discussion and Analysis incorporated by reference herein; including global uncertainty, Canadian housing and household indebtedness, information technology and cyber risk, regulatory changes, digital disruption and innovation, data and third party related risks, climate change, the business and economic conditions in the geographic regions in which we operate, the effects of changes in government fiscal, monetary and other policies, tax risk and transparency, and environmental and social risk.

We caution that the foregoing list of risk factors is not exhaustive and other factors could also adversely affect our results. When relying on our forward-looking statements to make decisions with respect to us or the Securities, investors and others

should carefully consider the foregoing factors and other uncertainties and potential events. Material economic assumptions underlying the forward-looking statements contained in this prospectus are set out in the Economic, market, and regulatory review and outlook section and for each business segment under the Strategic priorities and Outlook headings in our 2018 Management's Discussion and Analysis. Except as required by law, we do not undertake to update any forward-looking statement, whether written or oral, that may be made from time to time by us or on our behalf.

Additional information about these and other factors can be found in the risk sections of our 2018 Management's Discussion and Analysis incorporated by reference in this prospectus.

**Royal Bank of Canada  
Senior Note Program  
Index Linked Securities  
Maximum \$20,000,000 (200,000 Securities)  
RBC LiONS™ S&P/TSX 60 Accelerator Barrier Securities, Series 9  
Due January 31, 2025  
Non-Principal Protected Securities**

<b>Issuer:</b>	Royal Bank of Canada (the “Bank”)
<b>Dealers:</b>	RBC Dominion Securities Inc. (“RBC DS”) and Laurentian Bank Securities Inc. Laurentian Bank Securities Inc., a dealer to which we are neither related nor connected, participated in the due diligence activities performed by the Dealers in respect of the offering, but did not participate in the structuring and pricing of the offering or the calculation of the initial estimated value of the Securities. See “Plan of Distribution” in the program supplement.
<b>Issue:</b>	RBC LiONS™ S&P/TSX 60 Accelerator Barrier Securities, Series 9 due January 31, 2025.
<b>Fundserv Code:</b>	RBC2619
<b>Objective of the Securities:</b>	The Securities have been designed for investors seeking a return linked to the price performance of the S&P/TSX 60 Index (the “Index”) and who are prepared to assume the risks associated with such an investment.
<b>Issue Price:</b>	The Securities will be issued at a price equal to their Principal Amount (defined below).
<b>Minimum Investment:</b>	50 Securities or \$5,000.
<b>Denomination:</b>	Securities are issuable in denominations of \$100 (the “Principal Amount”) and in minimum increments of \$100.
<b>Issue Date:</b>	January 31, 2019 or such other date as may be agreed to by the Bank and the Dealers.
<b>Issue Size:</b>	The maximum issue size will be an aggregate amount of \$20,000,000.
<b>Maturity Date:</b>	January 31, 2025 (approximately a six-year term). See “Description of the Index Linked Securities – Maturity Date and Amount Payable” in the product supplement.
<b>Principal at Risk Securities:</b>	All but 1% of the Principal Amount of the Securities is fully exposed. You could lose substantially all of your investment. See “Description of the Index Linked Securities — Principal at Risk Securities” and “Risk Factors” in the product supplement.
<b>Index:</b>	<p>The return on the Securities is linked to the price performance of the Index.</p> <p>See “Description of the Index Linked Securities — Indices” in the product supplement. See Appendix A to this pricing supplement for summary information regarding the Index.</p> <p>Securities do not represent an interest in the Index or in the securities of the companies that comprise the Index, and holders will have no right or entitlement to such securities including, without limitation, redemption rights (if any), voting rights or rights to receive dividends or other distributions paid on such securities (the annual dividend yield on the Index as of January 10, 2019 was 3.400%, representing an aggregate dividend yield of approximately 22.211% compounded annually over the six-year term, on the assumption that the dividend yield remains constant). There is no requirement for the Bank to hold any interest in the Index or in the securities of the companies that comprise the Index.</p> <p>This pricing supplement has been prepared for the sole purpose of assisting prospective investors in making an investment decision with respect to the Securities. This pricing supplement relates only to the Securities offered hereby and does not relate to the Index and/or the Index Sponsor (defined below). The Bank and the Dealers have not verified the accuracy or completeness of any information pertaining to the Index or determined whether there has been any omission by the Index Sponsor</p>

to disclose any facts, information or events which may have occurred prior to or subsequent to the date as of which any information has been furnished by the Index Sponsor which may affect the significance or accuracy of such information. Neither the Bank nor any Dealer makes any representation that such publicly available documents or any other publicly available information regarding the Index or Index Sponsor is accurate or complete. Prospective investors should independently investigate the Index and the Index Sponsor and decide whether an investment in the Securities is appropriate. The Index Sponsor has not participated in the preparation of this pricing supplement and the Securities are not in any way sponsored, endorsed, sold or promoted by the Index Sponsor. See “Description of the Index Linked Securities – Indices” in the product supplement.

<b>Index Sponsor:</b>	Standard & Poor’s
<b>Payment at Maturity:</b>	<p>Payment at maturity will be based on the price performance (or “<b>Percentage Change</b>”) of the Index measured from the Initial Index Level to the Final Index Level and, in the case of a positive Percentage Change only, multiplied by the Participation Rate (defined below) of 200%. The amount payable (the “<b>Redemption Amount</b>”) on each \$100 Principal Amount per Security at maturity will be determined as follows:</p> <p>If the Percentage Change in the Index is <b>positive</b>, then the Redemption Amount will be:</p> <ul style="list-style-type: none"> <li>• <math>\\$100 + (\\$100 \times \text{Participation Rate} \times \text{Percentage Change})</math></li> </ul> <p>If the Percentage Change in the Index is <b>zero or negative, declining by 40.00% or less</b> (i.e., the Final Index Level is equal to or above the Barrier Level (defined below)), then the Redemption Amount will be \$100, as the Principal Amount will be fully protected against losses at or above the Barrier Level.</p> <p>If the Percentage Change in the Index is <b>negative, declining by more than 40.00%</b> (i.e., the Final Index Level is below the Barrier Level), then the Redemption Amount will be:</p> <ul style="list-style-type: none"> <li>• <math>\\$100 + (\\$100 \times \text{Percentage Change})</math></li> </ul> <p>All dollar amounts will be rounded to the nearest whole cent. The minimum payment at maturity is \$1.00.</p>
<b>Percentage Change:</b>	<p>The “<b>Percentage Change</b>” is the amount, expressed as a percentage rounded to three decimal places, equal to:</p> $\frac{(\text{Final Index Level} - \text{Initial Index Level})}{\text{Initial Index Level}}$ <p>See “Description of the Index Linked Securities — Maturity Date and Amount Payable” in the product supplement.</p>
<b>Participation Rate:</b>	200.00%, applied only if the Percentage Change is positive.
<b>Barrier Level:</b>	The “ <b>Barrier Level</b> ” is 60.00% of the Initial Index Level.
<b>Initial Index Level:</b>	The “ <b>Initial Index Level</b> ” is the Closing Level (defined below), as published by the Index Sponsor, on January 28, 2019 (the “ <b>Initial Valuation Date</b> ”).
<b>Final Index Level:</b>	The “ <b>Final Index Level</b> ” is the Closing Level, as published by the Index Sponsor, on January 28, 2025 (the “ <b>Final Valuation Date</b> ”).
<b>Closing Level:</b>	The “ <b>Closing Level</b> ” on any date is the official closing level of the Index quoted on <a href="http://www.standardandpoors.com">http://www.standardandpoors.com</a> for such date, as determined by the Calculation Agent (defined below). The official closing level of the Index is available from other sources, such as Bloomberg; however, neither the Bank nor the Dealers make any representation as to the accuracy of such information and all calculations regarding the Closing Level will be made by the Calculation Agent.
<b>Sample Calculations:</b>	See Appendix B to this pricing supplement for sample calculations of the Redemption Amount.
<b>Issuer Credit Rating:</b>	Moody’s: Aa2

Standard & Poor's: AA-

DBRS: AA

The Securities themselves have not been and will not be rated. See "Description of the Securities — Ratings" in the program supplement.

**Extraordinary Events:**

Determination of the Closing Level, including the Initial Index Level and/or the Final Index Level, and the Redemption Amount may be postponed, or the Bank can accelerate determination of the Final Index Level and the Redemption Amount and repay the Securities in full prior to their maturity, in certain circumstances. If an Extraordinary Event occurs then the Calculation Agent may, but is not required to, make such adjustments to any payment or other term of the Securities as it determines to be appropriate, acting in good faith, to account for the economic effect of such event on the Securities and determine the effective date of any such adjustment. See "Description of the Securities — Special Circumstances" in the program supplement and "Description of the Index Linked Securities — Extraordinary Events" in the product supplement.

**Summary of Fees and Expenses:**

A commission of 4.25% of the Principal Amount of Securities issued under this offering will be paid to the Dealers for further payment to representatives, including representatives employed by the Dealers, whose clients purchase the Securities. An agency fee will also be paid, from the Bank's own funds, to Laurentian Bank Securities Inc. in an amount up to 0.15% of the Principal Amount of the Securities issued under this offering for acting as independent agent. The selling commissions and the agency fee are indirectly borne by holders of the Securities. There are no fees directly payable by a holder of Securities. See "Description of the Securities — Summary of Fees and Expenses" in the program supplement. An early trading charge may also apply. See "Secondary Market" below.

**Eligibility for Investment:**

Eligible for RRSPs, RRIFs, RESPs, RDSPs, DPSPs and TFSAs. See "Eligibility for Investment" in Appendix D, including the summary of the "prohibited investment" rule.

**Risk Factors:**

You should carefully consider all the information set out in this prospectus for any Securities in which you are considering investing. **In particular, you should evaluate the risks described under "Risk Factors" in each of the base shelf prospectus and the product supplement, as well as the risks described below.** The return on the Securities is unknown and subject to many variables, including interest rate fluctuations and changes in the Index levels. You should independently determine, with your own advisors, whether an investment in the Securities is suitable for you having regard to your own investment objectives and expectations.

*The Initial Estimated Value of the Securities Is Less than the Price to the Public and May not Reflect the Secondary Market Price, if any, of the Securities*

The initial estimated value set forth on the cover page of this pricing supplement does not represent a minimum price at which the Bank, RBC DS or any of our affiliates would be willing to purchase the Securities in any secondary market (if any exists) at any time. If you attempt to sell the Securities prior to maturity, their market value may be lower than the initial estimated value and the price you paid for them. This is due to, among other things, changes in the level of the Index and the inclusion in the price to the public of the selling commissions and the agency fee, as well as an amount retained by the Bank to compensate it for the creation, issuance and maintenance of the Securities (which may or may not also include any costs of its hedging obligations thereunder). These factors, together with various market and economic factors over the term of the Securities, could reduce the price at which you may be able to sell the Securities in any secondary market and will affect the value of the Securities in complex and unpredictable ways. Even if there is no change in market conditions or any other relevant factors, the price, if any, at which you may be able to sell your Securities prior to maturity may be less than your original purchase price. The Securities are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your Securities to maturity.

*The Initial Estimated Value of the Securities Is an Estimate Only, Calculated as of the*

### *Time the Terms of the Securities Were Set*

The initial estimated value of the Securities is based on the value of the Bank's obligation to make the payments on the Securities. The return on the Securities can be replicated by purchasing and selling a combination of financial instruments, such as call options and put options. The fair value of the financial instrument components that would replicate the return on the Securities is equal to the fair value of the Securities. The Bank's estimate is based on a variety of assumptions, which may include expectations as to dividends, interest rates, the Bank's internal funding rates and volatility, and the term to maturity of the Securities. The Bank's internal funding rates may differ from the market rates for the Bank's conventional debt securities. These assumptions are based on certain forecasts about future events, which may prove to be incorrect. Other entities may value the Securities or similar securities at a price that is significantly different than the Bank does. The value of the Securities at any time after the date of this pricing supplement will vary based on many factors, including changes in market conditions, and cannot be predicted with accuracy. As a result, the actual value you would receive if you sold the Securities in the secondary market, if any, should be expected to differ materially from the initial estimated value of the Securities.

### **Preparation of Initial Estimated Value:**

The Securities are debt securities of the Bank, the return on which is linked to the price performance of the Index. In order to satisfy the Bank's payment obligations under the Securities, the Bank may choose to enter into certain hedging arrangements (which may include call options, put options or other derivatives) on the Issue Date which may or may not be with RBC DS or one of our other subsidiaries. The terms of these hedging arrangements, if any, take into account a number of factors, including the Bank's creditworthiness, interest rate movements, the volatility of the Index, and the term to maturity of the Securities.

The price of the Securities to the public also reflects the selling commissions and the agency fee, as well as an amount retained by the Bank to compensate it for the creation, issuance and maintenance of the Securities (which may or may not also include any costs of its hedging obligations thereunder). The initial estimated value for the Securities shown on the cover page will therefore be less than their public offering price. See "Risk Factors – The Initial Estimated Value of the Securities Is Less than the Price to the Public and May not Reflect the Secondary Market Price, if any, of the Securities" above.

The Bank has adopted written policies and procedures for determining the fair value of Securities issued by it pursuant to the Senior Note Program. These policies and procedures include: (a) methodologies used for valuing each type of financial instrument component that can be used in combination to replicate the return of the Securities; (b) the methods by which the Bank will review and test valuations to assess the quality of the prices obtained as well as the general functioning of the valuation process; and (c) how to deal with conflicts of interest.

### **Suitability for Investment:**

You should consult with your advisors regarding the suitability of an investment in the Securities. The Securities may be suitable for:

- investors seeking an investment product with exposure to the large-cap segment of the Canadian equity market
- investors who are willing and can afford to risk substantially all of the principal amount of their investment
- investors looking for the potential to earn an enhanced return over fixed-rate investments and who are prepared to assume the risks associated with an investment linked to the price performance of the Index
- investors with an investment horizon equal to the term to maturity of the Securities who are prepared to hold the Securities until maturity
- investors who do not need or expect to receive regular payments of return over the term of the Securities

### **Book-entry Only Securities:**

The Securities will be Fundserv Securities (defined in the program supplement) and



will be issued through the “book-entry-only system”. See “Description of the Securities – Global Securities” and “– Legal Ownership” in the program supplement.

**Listing:**

The Securities will not be listed on any stock exchange. See “Risk Factors” in the product supplement.

**Secondary Market:**

Securities may be purchased through dealers and other firms that facilitate purchase and related settlement using the Fundserv network. Securities may be resold using the Fundserv network at a sale price equal to the price posted on Fundserv as of the close of business on the Exchange Day (defined in the product supplement) on which the order is placed, as determined by and posted to Fundserv by the Calculation Agent, which sale price may be lower than the Principal Amount of such Securities, less an early trading charge as specified below. See “Risk Factors – The Initial Estimated Value of the Securities Is Less than the Price to the Public and May not Reflect the Secondary Market Price, if any, of the Securities” above.

Information regarding the Closing Level and the daily closing price for the Securities may be accessed at [www.rbcnotes.com](http://www.rbcnotes.com). There is no assurance that a secondary market for the Securities will develop or be sustained. See “Secondary Market for Securities” in the program supplement.

If a Security is sold within the first 540 days from the Issue Date, the proceeds from the sale of the Securities will be reduced by an early trading charge (“**Early Trading Charge**”) equal to a percentage of the Principal Amount determined as set out below.

If Sold Within the Following No. of Days from Issue Date	Early Trading Charge (% of Principal Amount)
1 - 180 days	4.75%
181 - 270 days	4.00%
271 - 360 days	3.00%
361 - 450 days	2.00%
451 - 540 days	1.00%
Thereafter	Nil

Other factors will affect the price at which you may be able to sell the Securities prior to maturity. For example, factors similar to those that may impact the value of zero coupon bonds and options may have an impact on the price of the Securities. Such factors include: (i) the Index level; (ii) the time remaining to the Maturity Date; (iii) the volatility of the Index; (iv) interest rates; (v) dividends or other income paid on the securities included in the Index and (vi) changes in our credit rating. The table below illustrates the potential impact of each factor generally on the Securities. The effect of any one factor may be offset or magnified by the effect of another factor. It is possible in certain limited circumstances that a particular factor may have a contrary effect with the passage of time.

Change of Factor	Price of Securities
Increase in the Index level	↑
Decrease in time to maturity	↑
Increase in volatility	↓
Increase in Canadian interest rates	↓
Increase in dividend/income yield	↓
Increase in Bank’s credit rating	↑

**Fiscal Agent:**

RBC DS. See “Description of the Securities – Fiscal Agency, Calculation Agency and Fundserv Depository Agreement” in the program supplement.

**Calculation Agent:**

RBC DS. See “Description of the Securities – Calculation Agent” in the program

supplement and “Risk Factors” in the product supplement.

**Tax:**

An initial purchaser of Securities who acquires Securities from the Bank on the Issue Date and who, at all relevant times, for purposes of the *Income Tax Act* (Canada), is an individual (other than a trust), is a resident of Canada, deals at arm’s length with and is not affiliated with the Bank, and acquires and holds the Securities as capital property until maturity (a “**Resident Holder**”) will be required to include in computing income for the taxation year in which the Maturity Date (or earlier repayment in full) occurs the amount, if any, by which the amount payable at maturity (or earlier repayment in full) exceeds the Principal Amount of the Securities, except to the extent that such amount has been previously included in the income of the Resident Holder. Furthermore, a Resident Holder will be required to include in income, on a transfer of a Security, occurring before it matures, any excess of the price for which it was so transferred by the Resident Holder over its outstanding principal amount at the time of the transfer. If the Resident Holder receives an amount less than the adjusted cost base of the Securities, the Resident Holder will realize a capital loss equal to the shortfall. See “Certain Canadian Tax Considerations” in Appendix D. **Potential purchasers of Securities should consult with their own tax advisors having regard to their particular circumstances.**

## APPENDIX A

### Summary Information Regarding the Index

The following is a summary description of the S&P/TSX 60 Index based on information obtained from the Index Sponsor's website at [www.standardandpoors.com](http://www.standardandpoors.com).

<b>Index</b>	S&P/TSX 60 Index
<b>Country</b>	Canada
<b>Current Exchange</b>	Toronto Stock Exchange
<b>Index Sponsor</b>	Standard & Poor's
<b>Number of Component Securities</b>	60
<b>Method of Calculation</b>	Market Capitalization Weighted
<b>Closing Level (January 10, 2019)</b>	891.72

#### **General Description**

The S&P/TSX 60 Index is designed to represent leading companies in leading industries. Its 60 stocks make it ideal for coverage of companies with large market capitalizations and a cost-efficient way to achieve Canadian equity exposure. The S&P/TSX 60 Index is weighted according to the market capitalization of its constituents. A capitalization-weighted index reflects both the price and the number of outstanding securities of each underlying company. Thus, with respect to the S&P/TSX 60 Index (in contrast to a "price-weighted" index), changes in the price of the securities of an underlying company with a large market capitalization will generally have a greater influence on the level of the S&P/TSX 60 Index than changes in the price of the securities of an underlying company with a small market capitalization. The S&P/TSX 60 Index is a price return index and will not reflect dividends or other distributions that are paid on the constituent securities.

The S&P/TSX 60 Index is sponsored by Standard & Poor's, an independent provider of financial information, analysis and research for over 125 years. The S&P/TSX 60 Index is calculated every 15 seconds during the normal trading hours on the Toronto Stock Exchange ("TSX"). The level of the S&P/TSX 60 Index may continue to be reported on a current basis even when trading is interrupted in some of its underlying securities. In that event, the reported level of the S&P/TSX 60 Index may be based on the current market prices of those underlying securities that are still being traded (if any) and the last reported prices of those securities that are not currently trading. As a result, reported levels of the S&P/TSX 60 Index may at times be based on non-current price information with respect to some or even all of the underlying securities. As well, for purposes of the Securities, it will be the closing level of the S&P/TSX 60 Index on the relevant day which will be used as the Closing Level for calculation purposes.

We have obtained all information regarding the S&P/TSX 60 Index contained herein, including its make-up, method of calculation and changes in its components, from publicly available information. That information reflects the policies of, and is subject to change by, Standard & Poor's and the TSX.

#### **Computation**

Constituent stocks of the S&P/TSX 60 Index may be altered according to certain addition and deletion rules. The S&P/TSX 60 Index is calculated based on the following formula:

$$\frac{\text{Aggregate Float QMV}}{\text{Divisor}} = \text{Index (SPIV)}$$

where:

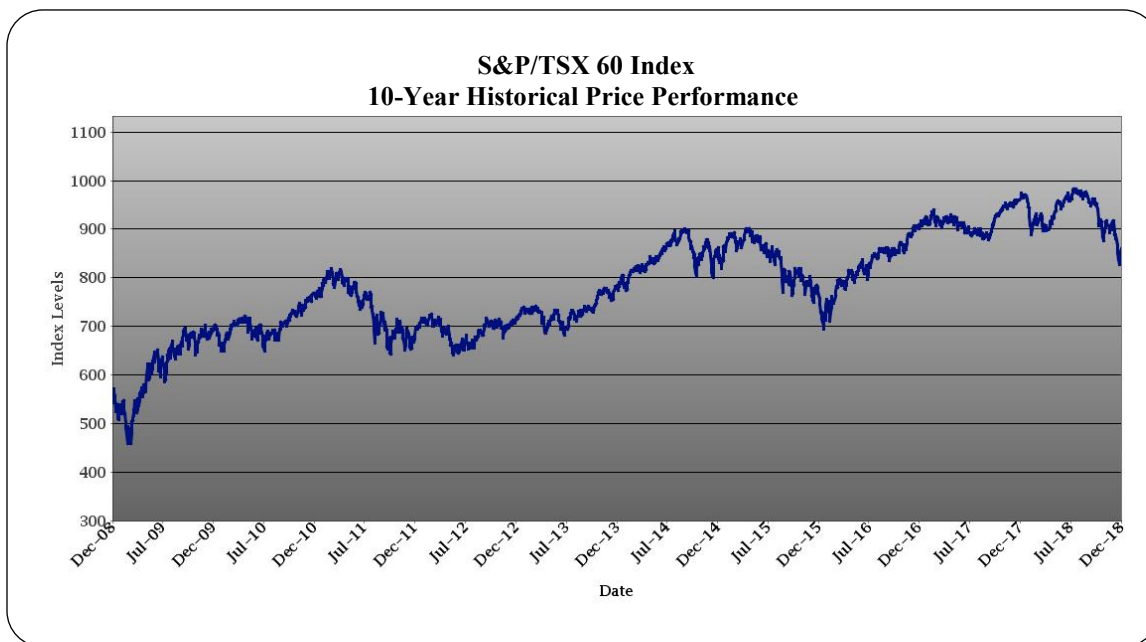
- Aggregate Float QMV** = The sum of the float quoted market value of the companies which comprise the S&P/TSX 60 Index. The float QMV is calculated as follows:  
(Outstanding Shares - Control Block) × Price
- Control Block** = Any individual or group of related individuals who control 20% or more of the outstanding shares. This information is obtained from each company's information circular, contact with the company, or from insider reports from the Ontario Securities Commission.
- Divisor** = The trade-weighted average float quoted market value for all original S&P/TSX 60 Index stocks. Whenever a change to the S&P/TSX 60 Index occurs (i.e., additions, deletions, changes in share capital), the divisor is adjusted in order to ensure that the S&P/TSX 60 Index level remains unaltered following the changes.
- Outstanding Shares** = Number of shares each company has issued and outstanding. This information is obtained from the TSX's Listings Department and the individual companies.

**Price** = The last trade price for a board lot of shares.

**SPIV** = Stock Price Index Value.

### Historical Price Performance

The following chart sets forth the historical level of the S&P/TSX 60 Index for the period from December 31, 2008 to December 31, 2018. Historical price performance does not take into account distributions or dividends paid on the securities underlying the S&P/TSX 60 Index.



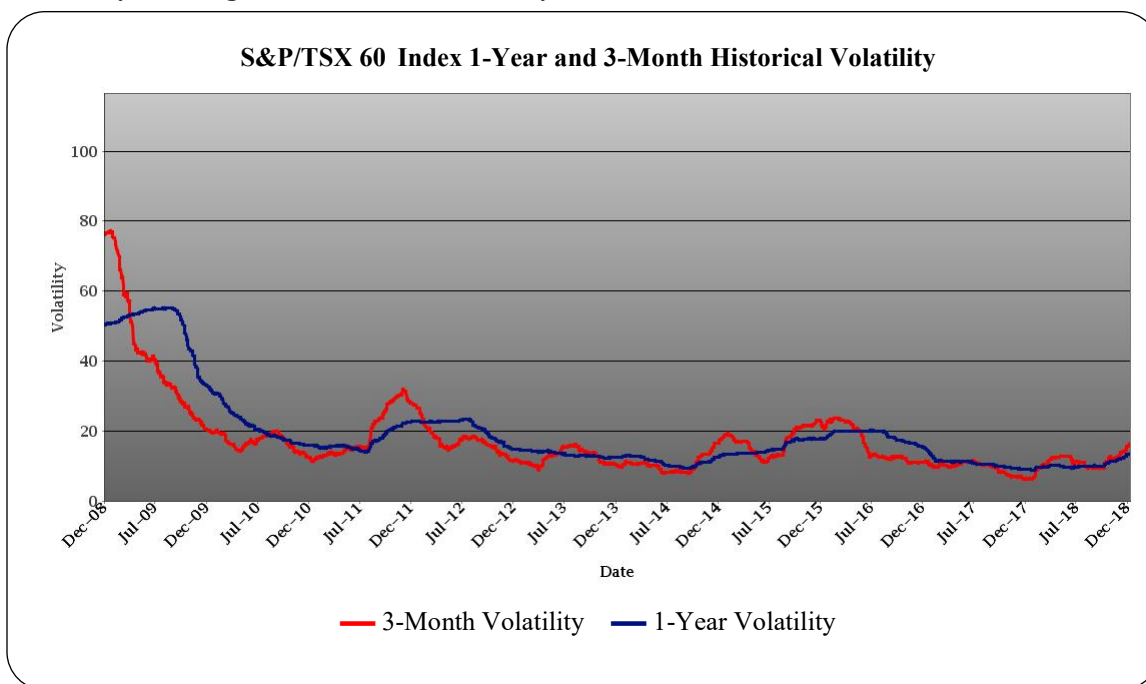
**Historical price performance of the S&P/TSX 60 Index will not necessarily predict future price performance of the S&P/TSX 60 Index or the Securities.** The source of the data displayed in this chart is Bloomberg L.P. and its accuracy cannot be guaranteed.

Historical annual percentage change of the S&P/TSX 60 Index										
Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Percentage change (%)	27.94	10.88	-11.42	4.82	9.81	9.07	-10.56	17.72	6.63	-10.46

Source: Bloomberg L.P.: Measures annualized period as of December 31 of the previous year.

The following chart sets forth the one-year and three-month historical volatility of the S&P/TSX 60 Index for the period from December 31, 2008 to December 31, 2018.

**Historical volatility is not a guarantee of future volatility.**



The source of the data displayed in this chart is Bloomberg L.P. and its accuracy cannot be guaranteed.

Volatility is the term used to describe the magnitude and frequency of the changes in a security's value over a given time period. A higher volatility means that a security's value can potentially be spread out over a larger range of values. This means that the price of the security can change dramatically over a short time period in either direction. A lower volatility means that a security's value does not fluctuate dramatically, but changes in value at a steady pace over a period of time.

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## APPENDIX B

### Sample Calculations of Redemption Amount

The examples set out below are included for illustration purposes only. The levels of the Index used to illustrate the calculation of the Redemption Amount are not estimates or forecasts of the Initial Index Level and Final Index Level on which the calculation of the Percentage Change, and in turn the Redemption Amount, will depend. All examples assume that a holder of the Securities has purchased Securities with an aggregate Principal Amount of \$100 and that no Extraordinary Event has occurred. All dollar amounts are rounded to the nearest whole cent.

#### **Example #1 — Calculation of the Redemption Amount where the Percentage Change is negative, declining by more than 40.00% (i.e., the Final Index Level is below the Barrier Level)**

Assuming that the Initial Index Level is 976.18 and the Final Index Level is 146.43, the Redemption Amount would be calculated as follows:

Initial Index Level = 976.18

Final Index Level = 146.43

Percentage Change =  $(146.43 - 976.18) / 976.18 = -0.8500$  or -85.00%

Since the Percentage Change is negative, declining by more than 40.00% (i.e., the Final Index Level is below the Barrier Level), the Redemption Amount is calculated as follows:

Redemption Amount =  $\$100 + (\$100 \times -85.00\%) = \$15.00$

In this example, the Redemption Amount results in a loss on the Principal Amount equivalent to an annually compounded loss rate of 27.11%.

#### **Example #2 — Calculation of the Redemption Amount where the Percentage Change is zero or negative, declining by 40.00% or less (i.e., the Final Index Level is equal to or above the Barrier Level)**

Assuming that the Initial Index Level is 976.18 and the Final Index Level is 927.37, the Redemption Amount would be calculated as follows:

Initial Index Level = 976.18

Final Index Level = 927.37

Percentage Change =  $(927.37 - 976.18) / 976.18 = -0.0500$  or -5.00%

Since the Percentage Change is zero or negative, declining by 40.00% or less (i.e., the Final Index Level is equal to or above the Barrier Level), the Redemption Amount is calculated as follows:

Redemption Amount = \$100.00

In this example, the Redemption Amount provides a return on the Principal Amount equivalent to an annually compounded rate of return of 0.00%.

#### **Example #3 — Calculation of the Redemption Amount where the Percentage Change is positive**

Assuming that the Initial Index Level is 976.18 and the Final Index Level is 1,805.93, the Redemption Amount would be calculated as follows:

Initial Index Level = 976.18

Final Index Level = 1,805.93

Percentage Change =  $(1,805.93 - 976.18) / 976.18 = 0.8500$  or 85.00%

Since the Percentage Change is positive, the Redemption Amount is calculated as follows:

Redemption Amount =  $\$100 + (\$100 \times 200.00\% \times 85.00\%) = \$270.00$

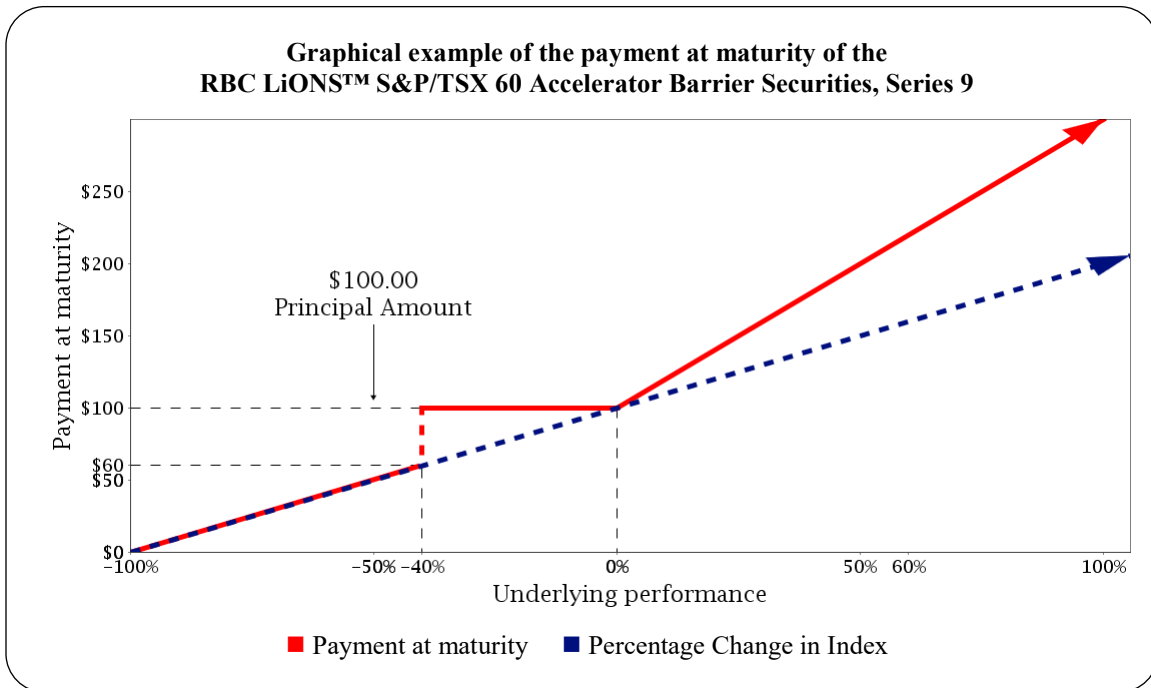
In this example, the Redemption Amount provides a return on the Principal Amount equivalent to an annually compounded rate of return of 18.00%.



## APPENDIX C

### Graphical Description of the Payment at Maturity

The graph set out below is included for illustration purposes only. The Index levels used to illustrate the calculation of the payment at maturity are not estimates or forecasts of the Initial Index Level and Final Index Level on which the calculation of the Percentage Change, and in turn the Redemption Amount, will depend. This graph shows a limited range of hypothetical returns on the Index and is intended to be representative of that range only. Returns on the Index not shown on the graph are still possible to achieve and the corresponding returns on the Securities should be calculated using the formulas set out in this pricing supplement. This graph demonstrates what the return on the Securities will be for a specific return on the Index. There can be no assurance that any specific return will be achieved. All examples assume that a holder of the Securities has purchased Securities with an aggregate Principal Amount of \$100 and that no Extraordinary Event has occurred. The minimum payment at maturity is \$1.00.



## APPENDIX D

### Certain Canadian Tax Considerations

In the opinion of the Bank's counsel, Davies Ward Phillips & Vineberg LLP, the following summary fairly describes the principal Canadian federal income tax considerations under the *Income Tax Act* (Canada) (the "**Tax Act**") generally applicable to an initial purchaser of Securities under this pricing supplement who, at all relevant times, for purposes of the Tax Act deals at arm's length with and is not affiliated with the Bank (a "**Holder**").

This summary is based upon the current provisions of the Tax Act and the regulations thereunder (the "**Regulations**"), all specific proposals to amend the Tax Act or such Regulations publicly announced by the federal Minister of Finance prior to the date hereof (the "**Proposals**") and counsel's understanding of the current administrative policies and practices of the Canada Revenue Agency ("**CRA**"). Except for the Proposals, this summary does not take into account or anticipate any changes (including retroactive changes) in the law or the administrative policies or practices of the CRA, whether by judicial, regulatory, governmental or legislative action, nor does it take into account tax laws of any province or territory of Canada, or of any jurisdiction outside Canada. Provisions of provincial income tax legislation vary from province to province in Canada and may differ from federal income tax legislation. No assurance can be given that the Proposals will be implemented in their current form, or at all. This summary assumes that the Holder will neither undertake nor arrange a transaction in respect of the Securities primarily for the purpose of obtaining a tax benefit, has not entered into a "derivative forward agreement" (as defined in the Tax Act) in respect of the Securities and that the Securities are not issued at a discount.

**This summary is of a general nature only and is not intended to constitute, nor should it be relied upon or construed as, tax advice to any particular Holder, nor is it exhaustive of all possible Canadian federal income tax considerations. Holders should consult their own tax advisors as to the potential consequences to them of the acquisition, ownership and disposition of Securities having regard to their particular circumstances.**

#### **Holders Resident in Canada**

The following discussion applies to a Holder who, at all relevant times, for the purposes of the Tax Act, is an individual (other than a trust) resident in Canada and acquires and holds the Securities as capital property (a "**Resident Holder**"). Certain Resident Holders who might not otherwise be considered to hold their Securities as capital property may, in certain circumstances, have their Securities, and all other "Canadian securities" (as defined in the Tax Act) owned by such Resident Holders in the taxation year and all subsequent taxation years, treated as capital property as a result of having made the irrevocable election permitted by subsection 39(4) of the Tax Act.

#### *Holding of Securities*

In certain circumstances, provisions of the Tax Act require a holder of a "prescribed debt obligation" (as defined for the purposes of the Tax Act) to include in income for each taxation year the amount of any interest, bonus or premium receivable on the obligation over its term based on the maximum amount of interest, bonus or premium receivable on the obligation. While the Securities will generally be considered to be prescribed debt obligations to a Resident Holder, counsel understands that the CRA's current administrative practice is not to require any such accrual of interest on a prescribed debt obligation until such time as the return thereon becomes determinable. Counsel has been advised that the Bank anticipates that throughout each taxation year ending before the Maturity Date (or the date of earlier repayment in full) the return on the Securities generally will not be determinable. Where this is the case, on the basis of such understanding of the CRA's administrative practice, there should be no deemed accrual of interest on the Securities for taxation years (being calendar years) of a Resident Holder ending prior to their Maturity Date (or, if applicable, the date of their earlier repayment in full), except as described below under "Disposition of Securities" where a Security is transferred before such date.

#### *Payment at Maturity or Earlier Repayment in Full*

A Resident Holder who holds the Securities until maturity (or earlier repayment in full by the Bank) will be required to include in computing the Resident Holder's income for the taxation year in which the Maturity Date (or repayment in full) occurs the amount, if any, by which the amount payable at maturity (or repayment in full) exceeds the Principal Amount of the Securities. Alternatively, the Resident Holder will realize a capital loss to the extent that the amount received at such time is less than the Resident Holder's adjusted cost base of such Securities. The income tax considerations associated with the realization of a capital loss are described below.

#### *Disposition of Securities*

Where a Resident Holder disposes of a Security (other than to the Bank on the Maturity Date or earlier repayment in full), the Tax Act requires the amount of interest accrued on the Security that is unpaid at that time to be included in computing the income of the Resident Holder for the taxation year in which the disposition occurs (except to the extent such amount has otherwise been included in computing the income of the Resident Holder for that year or a preceding year), and excludes such amount from the proceeds of disposition. On an assignment or other transfer of a Security by a Resident Holder (other than to the Bank on the Maturity Date or earlier repayment in full), a formula amount will be deemed to have accrued on the Security up to the time of the transfer, so that such amount will be required to be included in the income of the Resident

Holder for the taxation year of the Resident Holder in which the transfer occurs. Such formula amount equals the excess, if any, of the price for which it is so transferred over its outstanding principal amount at the time of the transfer.

The Resident Holder should realize a capital loss to the extent that the proceeds of disposition, net of amounts included in income as interest (including any formula amount as described above) and any reasonable costs of disposition, are less than the Resident Holder's adjusted cost base of the Securities. As described above, any gain realized from the disposition of Securities will be included in income and will not give rise to a capital gain. Resident Holders who dispose of Securities prior to the Maturity Date thereof (or earlier repayment in full) should consult their own tax advisors with respect to their particular circumstances.

#### *Treatment of Capital Losses*

One-half of any capital loss realized by a Resident Holder will constitute an allowable capital loss that is deductible against taxable capital gains of the Resident Holder, subject to and in accordance with the provisions of the Tax Act.

#### **Holders Not Resident in Canada**

The following discussion applies to a Holder who, at all relevant times, for the purposes of the Tax Act, is neither resident nor deemed to be resident in Canada, deals at arm's length with any Canadian resident (or deemed Canadian resident) to whom the Holder disposes of the Securities, is not a "specified shareholder" of the Bank or a person who does not deal at arm's length with a specified shareholder of the Bank for purposes of the "thin capitalization" rule contained in subsection 18(4) of the Tax Act, does not use or hold and is not deemed to use or hold the Securities in the course of carrying on a business in Canada and is not an insurer carrying on an insurance business in Canada and elsewhere (a "**Non-Resident Holder**").

Interest paid or credited or deemed to be paid or credited on the Securities (including any amount 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 Security to a resident or deemed resident of Canada) to a Non-Resident Holder will not be subject to Canadian non-resident withholding tax unless any portion of such interest 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 of any class of shares of the capital stock of a corporation ("**Participating Debt Interest**"). Having regard to the terms of the Securities, interest paid or credited or deemed to be paid or credited on the Securities should not be considered to be Participating Debt Interest.

There should be no other taxes on income (including taxable capital gains) payable by a Non-Resident Holder in respect of a Security.

#### **Eligibility for Investment**

The Securities, if issued on the date of this pricing supplement, would be qualified investments (for purposes of the Tax Act) for trusts governed by registered retirement savings plans ("**RRSPs**"), registered retirement income funds ("**RRIFs**"), tax-free savings accounts ("**TFSA**s"), registered disability savings plans ("**RDSPs**"), registered education savings plans ("**RESPs**") and deferred profit sharing plans ("**DPSPs**"), each within the meaning of the Tax Act (other than a DPSP to which payments are made by the Bank or a corporation or partnership with which the Bank does not deal at arm's length within the meaning of the Tax Act).

Notwithstanding the foregoing, if Securities are "prohibited investments" (as that term is defined in the Tax Act) for an RRSP, RRIF, TFSA, RDSP or RESP, the annuitant of the RRSP or RRIF, the holder of the TFSA or RDSP, or the subscriber of the RESP, as the case may be (each a "**Plan Holder**"), will be subject to a penalty tax as set out in the Tax Act. Securities will be "prohibited investments" for an RRSP, RRIF, TFSA, RDSP or RESP of a Plan Holder who has a "significant interest" (as defined in the Tax Act for purposes of the prohibited investment rules) in the Bank or who does not deal at arm's length, within the meaning of the Tax Act, with the Bank.