

ROYAL BANK OF CANADA  
Form FWP  
November 13, 2018

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The information in this pricing supplement is not complete and may be changed.  
This pricing supplement is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO  
COMPLETION,  
DATED            Filed Pursuant to Rule 433  
NOVEMBER 9,  
2018

Registration No. 333-227001

Preliminary Pricing Supplement No. WFC127 (to Prospectus and Prospectus Supplement each dated September 7, 2018)

Royal Bank of Canada  
Market Linked Securities—Leveraged Upside Participation to a Cap and Fixed Percentage Buffered Downside Principal at Risk Securities Linked to the Russell 2000® Index, due December 5, 2023  
The securities described in this pricing supplement are issued by Royal Bank of Canada (Royal Bank of Canada or the Issuer), and are Senior Global Medium-Term Notes, Series H of the Issuer, as described in the prospectus supplement and prospectus each dated September 7, 2018.

Agent: Wells Fargo Securities, LLC. The agent may make sales through its affiliates or selling agents.

Principal Amount: Each security will have a principal amount of \$1,000. The securities are not principal-protected. You may lose up to 85% of the principal amount of the securities.

Pricing Date: November 30, 2018\*

Original Issue Date: December 5, 2018\*

Valuation Date: November 28, 2023\*, subject to postponement as described below.

Maturity Date: December 5, 2023\*, subject to postponement as described below.

Interest: We will not pay you interest during the term of the securities.

Index: The return on the securities is linked to the performance of the Russell 2000® Index (Bloomberg symbol: RTY), which we refer to as the Index.  
The amount you receive at maturity, for each security you own, will depend upon the change in the level of the Index based on the Final Index Level relative to the Initial Index Level, and whether or not the Final Index Level is below the Buffer Level.  
(i) If the Final Index Level is greater than the Initial Index Level, the maturity payment amount per security will equal the lesser of:  
(a)  $\$1,000 + (\$1,000 \frac{\text{Final Index Level} - \text{Initial Index Level}}{\text{Initial Index Level}} \times \text{Participation Rate})$ ; and  
(b) the maximum maturity payment amount  
(ii) If the Final Index Level is equal to or less than the Initial Index Level but greater than or equal to the Buffer Level, the maturity payment amount per security will equal \$1,000.

Payment at Maturity:

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(iii) If the Final Index Level is less than the Buffer Level, the maturity payment amount per security will equal:

$$\$1,000 - \left( \$1,000 \times \frac{\text{Buffer Level} - \text{Final Index Level}}{\text{Initial Index Level}} \right)$$

In such a case, you will lose up to 85% of your principal.

Maximum Maturity Payment Amount:

[\$1,500.00 - \$1,550.00] per security (to be determined on the pricing date)

Participation Rate:

125%

Initial Index Level:

The closing level of the Index on the pricing date.

Final Index Level:

The closing level of the Index on the valuation date.

Buffer Level:

85% of the Initial Index Level.

Listing:

The securities will not be listed on any securities exchange.

CUSIP Number:

78013XR34

\* To the extent that the Issuer makes any change to the expected pricing date or expected original issue date, the valuation date and the maturity date may also be changed in the Issuer's discretion to ensure that the term of the securities remains the same.

Our initial estimated value of the securities as of the date of this document is \$927.13 per \$1,000 in principal amount, which is less than the public offering price. While the initial estimated value of the securities on the pricing date may differ from the estimated value set forth above, we do not expect it to differ significantly absent a material change in market conditions or other relevant factors. The final pricing supplement relating to the securities will set forth our estimate of the initial value of the securities as of the pricing date, which will not be less than \$900 per \$1,000 in principal amount. The market value of the securities at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount. See "Risk Factors" and "Supplemental Plan of Distribution – Structuring the Securities" for further information.

The securities will be unsecured debt obligations of Royal Bank of Canada. Payments on the securities are subject to Royal Bank of Canada's credit risk. If Royal Bank of Canada defaults on its obligations, you could lose your entire investment. No other company or entity will be responsible for payments under the securities or liable to holders of the securities in the event Royal Bank of Canada defaults under the securities. The securities will not be issued by or guaranteed by Wells Fargo Securities, LLC or any of its affiliates.

The securities will not constitute deposits insured by the Canada Deposit Insurance Corporation, the U.S. Federal Deposit Insurance Corporation (the "FDIC") or any other Canadian or U.S. government agency or instrumentality. The securities are not subject to conversion into our common shares under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act.

For a detailed description of the terms of the securities, see "Summary Information" beginning on page PS-2 and "Specific Terms of the Securities" beginning on page PS-17. Defined terms used in this cover page are defined in "Summary Information" and "Specific Terms of the Securities."

The securities have complex features and investing in the securities involves risks. See "Risk Factors" beginning on page PS-11 of this document and page S-1 of the accompanying prospectus supplement.

	Per Security	Total
Public Offering Price	\$1,000.00	\$•
Maximum Underwriting Discount and Commission <sup>(1)</sup>	\$46.00	\$•
Minimum Proceeds to Royal Bank of Canada	\$954.00	\$•

(1) The agent will receive an underwriting discount and commission of up to \$46.00 per security. Of that underwriting discount and commission, each dealer that sells securities will receive a selling concession of \$25.00 for each security that such dealer sells. Such securities dealers may include Wells Fargo Advisors ("WFA") (the trade name of the retail brokerage business of Wells Fargo Clearing Services, LLC and Wells Fargo Advisors Financial Network, LLC). In addition to the selling concession allowed to WFA, the agent will pay \$1.20 per security of the underwriting discount and commission to WFA as a distribution expense fee for each security sold by WFA. See "Use of Proceeds and Hedging" and "Supplemental Plan of Distribution" in this pricing supplement for information regarding how we may hedge our obligations under the securities.

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None of the Securities and Exchange Commission, any state securities commission or any other regulatory body has approved or disapproved of the securities or passed upon the adequacy or accuracy of this pricing supplement. Any representation to the contrary is a criminal offense.

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Wells Fargo Securities

The date of this pricing supplement is November [ ], 2018

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## SUMMARY INFORMATION

This document is a pricing supplement. This pricing supplement provides specific pricing information in connection with this issuance of securities. This summary includes questions and answers that highlight selected information from this pricing supplement and the accompanying prospectus supplement and prospectus to help you understand the Market Linked Securities Leveraged Upside Participation to a Cap and Fixed Percentage Buffered Downside Principal at Risk Securities Linked to the Russell 2000<sup>®</sup> Index, due December 5, 2023 (the securities). You should carefully read this pricing supplement and the accompanying prospectus supplement and prospectus to fully understand the terms of the securities and the tax and other considerations that are important to you in making a decision about whether to invest in the securities. You should carefully review the section “Risk Factors” in this pricing supplement and the accompanying prospectus supplement and prospectus, which highlight certain risks associated with an investment in the securities, to determine whether an investment in the securities is appropriate for you.

Unless otherwise mentioned or unless the context requires otherwise, all references in this pricing supplement to “Royal Bank of Canada”, “we”, “us” and “our” or similar references mean Royal Bank of Canada. Capitalized terms used in this pricing supplement without definition have the meanings given to them in the accompanying prospectus supplement and prospectus.

What are the securities?

The securities offered by this pricing supplement will be issued by Royal Bank of Canada and will mature on December 5, 2023. The return on the securities, if any, will be linked to the performance of the Russell 2000<sup>®</sup> Index, which we refer to as the Index. The securities will not bear interest and no other payments will be made until maturity. You may lose up to 85% of your investment in the securities.

As discussed in the accompanying prospectus supplement, the securities are debt securities and will be part of a series of debt securities entitled “Senior Global Medium-Term Notes, Series H” that Royal Bank of Canada may issue from time to time. The securities will rank equally with all other unsecured and unsubordinated debt of Royal Bank of Canada. For more details, see “Specific Terms of the Securities” beginning on page PS-17.

Each security will have a principal amount of \$1,000. Each security will be offered at an initial public offering price of \$1,000. However, on the pricing date, our initial estimated value of the securities will be less than \$1,000 per security as a result of certain costs that are included in the initial public offering price. See “Risk Factors—Our initial estimated value of the securities will be less than the initial public offering price” and “Supplemental Plan of Distribution—Structuring the Securities.” To the extent a market for the securities exists, you may transfer only whole securities. Royal Bank of Canada will issue the securities in the form of a master global certificate, which is held by The Depository Trust Company, also known as DTC, or its nominee. Direct and indirect participants in DTC will record your ownership of the securities.

Are the securities principal protected?

No, the securities do not guarantee any return of principal at maturity. If the Final Index Level is less than the Buffer Level, you will be exposed on a 1-to-1 basis to declines in the level of the Index beyond the Buffer Level.

Accordingly, if the Final Index Level is below the Buffer Level, you will lose up to 85% of your principal.

What will I receive upon maturity of the securities?

At maturity, for each security you own, you will receive a cash payment equal to the maturity payment amount. The maturity payment amount to which you will be entitled depends on the percentage change in the level of the Index calculated based on the Final Index Level (as defined below) relative to the Initial Index Level (as defined below), and whether or not the Final Index Level is below the Buffer Level (as defined below).

The maturity payment amount for each security will be determined by the calculation agent as described below:

If the Final Index Level is greater than the Initial Index Level, the maturity payment amount per security will equal the lesser of:

(a)  $\$1,000 + (\$1,000 \times \frac{\text{Final Index Level} - \text{Initial Index Level}}{\text{Initial Index Level}} \times \text{Participation Rate})$ ; and

(b) the maximum maturity payment amount

The Participation Rate is 125%. The maximum maturity payment amount will be [\$1,500.00 - \$1,550.00] per security, to be determined on the pricing date.

If the Final Index Level is equal to or less than the Initial Index Level, but greater than or equal to the Buffer Level, the maturity payment amount per security will equal \$1,000.

If the Final Index Level is less than the Buffer Level, the maturity payment amount per security will equal:

$$\$1,000 - \left( \$1,000 \times \frac{\text{Buffer Level} - \text{Final Index Level}}{\text{Initial Index Level}} \right)$$

If the Final Index Level is less than the Buffer Level, the amount you will receive at maturity will be less than the principal amount of the securities, and you will lose up to 85% of your principal. If the Final Index Level is zero, the maturity payment amount will be \$150.00 per security, and you will lose 85% of your principal.

The Initial Index Level will be equal to the closing level of the Index on the pricing date and disclosed in the final pricing supplement for the securities.

The Buffer Level will equal 85% of the Initial Index Level.

The Final Index Level will be determined by the calculation agent and will be the closing level of the Index on the valuation date.

The valuation date is November 28, 2023. However, if that day occurs on a day that is not a trading day (as defined on page PS-21) or on a day on which the calculation agent has determined that a market disruption event (as defined under “Specific Terms of the Securities—Market Disruption Event” below) has occurred or is continuing, then the valuation date will be postponed until the next succeeding trading day on which the calculation agent determines that a market disruption event does not occur or is not continuing; provided that in no event will the valuation date be postponed by more than eight trading days. If the valuation date is postponed, then the maturity date of the securities will be postponed by an equal number of business days. The maturity date will be a business day. In the event the maturity date would otherwise be a date that is not a business day, the maturity date will be postponed to the next succeeding date that is a business day and no interest shall accrue or be payable as a result of the postponement.

The closing level on any trading day will equal the official closing level of the Index or any successor Index (as defined under “Specific Terms of the Securities—Discontinuation of the Index; Adjustments to the Index” below) published by the Index Sponsor (as defined below) or any successor index sponsor at the regular weekday close of trading on that trading day. In certain circumstances, the closing level will be based on the alternate calculation of the Index described under “Specific Terms of the Securities—Discontinuation of the Index; Adjustments to the Index” below.

You should understand that the opportunity to benefit from the possible increase in the level of the Index through an investment in the securities is limited because the amount that you receive at maturity will never exceed the maximum maturity payment amount. The maximum maturity payment amount represents a maximum appreciation on the securities of [50% - 55%] over the principal amount of the securities. If the Final Index Level is less than the Buffer Level, you will be exposed on a 1-to-1 basis to declines in the level of the Index beyond the Buffer Level. Accordingly, if the level of the Index decreases below the Buffer Level, you will lose up to 85% of your principal.

Hypothetical Examples

Set forth below are four hypothetical examples of the calculation of the maturity payment amount based on the following hypothetical values (the numbers appearing in the examples below have been rounded for ease of analysis):

Hypothetical Initial Index Level: 1,500.00

Hypothetical Buffer Level: 1,275.00

Hypothetical maximum maturity payment amount: \$1,525.00 (the mid-point of the range of maximum maturity payment amounts set forth in this pricing supplement)

Example 1—The hypothetical Final Index Level is 40.00% of the hypothetical Initial Index Level, which is below the Buffer Level:

Hypothetical Final Index Level: 600.00

$$\text{Maturity payment amount (per security)} = \$1,000 - (\$1,000 \times \frac{1,275.00 - 600.00}{1,500}) = \$550.00$$

Since the hypothetical Final Index Level is less than the hypothetical Initial Index Level and below the hypothetical Buffer Level, the amount you will receive at maturity will be equal to the issue price of \$1,000 per security minus \$1,000 times the difference between the hypothetical Buffer Level and the hypothetical Final Index Level, divided by the hypothetical Initial Index Level, and you would lose some of your principal. Although the hypothetical Final Index level declined by 60.00% from the hypothetical Initial Index Level to the hypothetical Final Index Level, your total cash payment at maturity would be \$550.00 per security, representing a 45.00% loss of the principal amount of your securities.

Example 2—The hypothetical Final Index Level is 95.00% of the hypothetical Initial Index Level, which is below the Initial Index Level, but above the Buffer Level:

Since the hypothetical Final Index Level is less than the hypothetical Initial Index Level but greater than the hypothetical Buffer Level, the maturity payment amount per security will equal the principal amount of \$1,000.

Example 3—The hypothetical Final Index Level is 120.00% of the hypothetical Initial Index Level:

Hypothetical Final Index Level: 1,800.00

$$\text{Maturity payment amount (per security)} = \$1,000 + (\$1,000 \times \frac{1,800.00 - 1,500.00}{1,500.00} \times 125\%)$$

$$= \$1,000 + \$250.00 = \$1,250.00$$

Since the hypothetical Final Index Level is greater than the hypothetical Initial Index Level, you would receive the principal amount of \$1,000 plus 125% times the amount of the percentage change in the level of the Index times \$1,000, subject to the hypothetical maximum maturity payment amount of \$1,525.00 (the mid-point of the range of maximum maturity payment amounts set forth in this pricing supplement). As the calculation of the maturity payment amount without taking into account the hypothetical maximum maturity payment amount would generate a result of \$1,250.00 per security, your maturity payment amount would not be subject to the hypothetical maximum maturity payment amount of \$1,525.00 per security. Your total cash payment at maturity would be \$1,250.00 per security, representing a 25.00% total return.

**Example 4**—The hypothetical Final Index Level is 150.00% of the hypothetical Initial Index Level

Hypothetical Final Index Level: 2,250.00

$$\text{Maturity payment amount (per security)} = \$1,000 + (\$1,000 \times \frac{2,250.00 - 1,500.00}{1,500.00} \times 125\%)$$

$$= \$1,000 + \$625.00 = \$1,625.00 > \$1,525.00$$

Since the hypothetical Final Index Level is *greater* than the hypothetical Initial Index Level, you would receive the principal amount of \$1,000 plus 125% times the amount of the percentage change in the level of the Index times \$1,000, subject to the hypothetical maximum maturity payment amount of \$1,525.00 (the mid-point of the range of maximum maturity payment amounts set forth in this pricing supplement). Although the calculation of the maturity payment amount without taking into account the hypothetical maximum maturity payment amount would generate a result of \$1,625.00 per security, your maturity payment amount would be limited to \$1,525.00 per security, representing a 152.50% total return, because the payment on the securities at maturity may not exceed the hypothetical maximum maturity payment amount.

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## Hypothetical Returns

The following table assumes a hypothetical maximum maturity payment amount of \$1,525.00, the mid-point of the maximum maturity payment amount range set forth in this pricing supplement, a hypothetical Initial Index Level of 1,500.00 and a range of hypothetical Final Index Levels and illustrates:

- the percentage change from the hypothetical Initial Index Level to the hypothetical Final Index Level;
- the hypothetical maturity payment amount per security; and
- the hypothetical pre-tax total rate of return to beneficial owners of the securities.

The figures below are rounded for ease of analysis and are for purposes of illustration only. The actual maturity payment amount will depend on the actual maximum maturity payment amount and the Final Index Level as determined by the calculation agent as described in this pricing supplement.

Hypothetical Final Index Level	Percentage Change from the Hypothetical Initial Index Level to the Hypothetical Final Index Level	Hypothetical Maturity Payment Amount per Security	Hypothetical Pre-Tax Total Rate of Return on the Securities
0.00	-100.00%	\$150.00	-85.00%
150.00	-90.00%	\$250.00	-75.00%
300.00	-80.00%	\$350.00	-65.00%
450.00	-70.00%	\$450.00	-55.00%
600.00	-60.00%	\$550.00	-45.00%
675.00	-55.00%	\$600.00	-40.00%
750.00	-50.00%	\$650.00	-35.00%
825.00	-45.00%	\$700.00	-30.00%
900.00	-40.00%	\$750.00	-25.00%
1,050.00	-30.00%	\$850.00	-15.00%
1,200.00	-20.00%	\$950.00	-5.00%
1,275.00 (1)	-15.00%	\$1,000.00	0.00%
1,350.00	-10.00%	\$1,000.00	0.00%
1,500.00 (2)	0.00%	\$1,000.00	0.00%
1,650.00	10.00%	\$1,125.00	12.50%
1,800.00	20.00%	\$1,250.00	25.00%
1,950.00	30.00%	\$1,375.00	37.50%
2,100.00	40.00%	\$1,500.00	50.00%
2,130.00	42.00%	\$1,525.00 (3)	52.50%
2,250.00	50.00%	\$1,525.00	52.50%
2,400.00	60.00%	\$1,525.00	52.50%
2,550.00	70.00%	\$1,525.00	52.50%
2,700.00	80.00%	\$1,525.00	52.50%
2,850.00	90.00%	\$1,525.00	52.50%
3,000.00	100.00%	\$1,525.00	52.50%

(1) This is the hypothetical Buffer Level.

(2) This is the hypothetical Initial Index Level.

(3) This is the hypothetical maximum maturity payment amount of \$1,525.00 (the mid-point of the range of maximum maturity payment amounts set forth in this pricing supplement).



The following graph sets forth the return at maturity for a range of hypothetical percentage changes of the Index, based on a hypothetical maximum maturity payment amount of \$1,525.00 per \$1,000 security (52.50% over the principal amount).

Return Profile of Market Linked Securities —Leveraged Upside Participation to a Cap and Fixed Percentage Buffered Downside Principal at Risk Securities vs. the Index

Who should or should not consider an investment in the securities?

We have designed the securities for investors who seek exposure to the Index, who believe that the Index level will increase over the term of the securities, and who want to participate in 1.25 times the possible appreciation of the Index (measured by the percentage change in the level of the Index based on the Final Index Level relative to the Initial Index Level), subject to the maximum maturity payment amount of [50% - 55%] over the principal amount of the securities; who understand that, if the Final Index Level is less than the Buffer Level, they will lose money on their investment; and who are willing to hold their securities until maturity. Investors in the securities should be willing to risk up to 85% of their investment.

The securities are not designed for, and may not be a suitable investment for, investors who are unable or unwilling to hold the securities to maturity, who seek principal protection for their investment, who are unwilling to make an investment exposed to downside performance risk of the Index or who are unwilling to purchase securities with an initial estimated value as of the pricing date that is lower than the initial public offering price and that may be as low as the lower estimated value set forth on the cover page. The securities may not be a suitable investment for investors who prefer the lower risk of fixed income investments with comparable maturities issued by companies with comparable credit ratings.

What will I receive if I sell the securities prior to maturity?

The market value of the securities may fluctuate during the term of the securities. Several factors and their interrelationship will influence the market value of the securities, including the level of the Index, dividend yields of the common stocks underlying the Index, the time remaining to maturity of the securities, interest rates and the volatility of the Index. Depending on the impact of these factors, you may receive less than \$1,000 per security from any sale of your securities before the maturity date of the securities and less than what you would have received had you held the securities until maturity. Assuming no change in market conditions or other relevant factors, the price, if any, at which you may be

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able to sell your securities prior to maturity will be less than the initial public offering price and, subject to the discussion regarding secondary market prices during the five months following the original issue date in “Supplemental Plan of Distribution” on page PS-31, will be less than the initial estimated value of the securities set forth on the cover page. For more details, see “Risk Factors — Many factors affect the market value of the securities” on page PS-12 and “—The price, if any, at which you may be able to sell your securities prior to maturity may be less than the initial public offering price and our initial estimated value” on page PS-14.

Who publishes the Index and what does the Index measure?

The Russell 2000® Index (the Index) is intended to track the performance of the small capitalization segment of the U.S. equity market and is published by FTSE Russell (the Index Sponsor). As a subset of the Russell 3000® Index, the 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, representing approximately 98% of the investable U.S. equity market.

The Index is determined, calculated and maintained by the Index Sponsor without regard to the securities.

You should be aware that an investment in the securities does not entitle you to any ownership interest in the common stocks of the companies included in the Index. For a discussion of the Index, see “Russell 2000® Index” below.

How has the Index performed historically?

You can find a graph setting forth the daily closing levels of the Index for the period from January 1, 2013 to a recent date in the section entitled “Russell 2000® Index— Historical Closing Levels of the Index” in this pricing supplement. We obtained the historical information from Bloomberg Financial Markets without independent verification. You should not take the past performance of the Index as an indication of how the Index will perform in the future.

What are the United States federal income tax consequences of investing in the securities?

The terms of the securities 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 securities for all tax purposes as pre-paid cash-settled derivative contracts in respect of the Index. If the securities are so treated, a U.S. holder should generally recognize capital gain or loss upon the sale, exchange or maturity of the securities in an amount equal to the difference between the amount a holder receives at such time and the holder’s tax basis in the securities.

Please read carefully the section entitled “Supplemental Discussion of U.S. Federal Income Tax Consequences” in this pricing supplement, the section entitled “Tax Consequences” in the accompanying prospectus and the section entitled “Certain Income Tax Consequences” in the accompanying prospectus supplement. You should consult your tax advisor about your own tax situation.

What are the Canadian federal income tax consequences of investing in the securities?

For a discussion of the Canadian federal income tax consequences of investing in the securities, please read carefully the section entitled “Tax Consequences” in the accompanying prospectus and the section entitled “Certain Income Tax Consequences” in the accompanying prospectus supplement. You should consult your tax advisor about your own tax situation.

Will the securities be listed on a stock exchange?

The securities will not be listed on any securities exchange. There can be no assurance that a liquid trading market will develop for the securities. Accordingly, if you sell your securities prior to maturity, you may have to sell them at a substantial loss. You should review the section entitled “Risk Factors—There may not be an active trading market for the securities” in this pricing supplement.

Are there any risks associated with my investment?

Yes, an investment in the securities is subject to significant risks, including the risk of loss of up to 85% of your principal. We urge you to read the detailed explanation of risks in “Risk Factors” beginning on page PS-11 of this document and page S-1 of the accompanying prospectus supplement.

ADDITIONAL INFORMATION

You should read this pricing supplement together with the prospectus dated September 7, 2018, as supplemented by the prospectus supplement dated September 7, 2018, relating to our Senior Global Medium-Term Notes, Series H, of which these securities are a part. This pricing supplement, together with these documents, contains the terms of the securities and supersedes all other prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours.

You should rely only on the information provided or incorporated by reference in this pricing supplement, the prospectus and the prospectus supplement. We have not authorized anyone else to provide you with different information, and we take no responsibility for any other information that others may give you. We and Wells Fargo Securities, LLC are offering to sell the securities and seeking offers to buy the securities only in jurisdictions where it is lawful to do so. The information contained in this pricing supplement and the accompanying prospectus supplement and prospectus is current only as of their respective dates.

If the information in this pricing supplement differs from the information contained in the prospectus supplement or the prospectus, you should rely on the information in this pricing supplement.

You should carefully consider, among other things, the matters set forth in “Risk Factors” in this pricing supplement and the accompanying prospectus supplement, as the securities involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisers before you invest in the securities.

You may access these documents on the SEC website at [www.sec.gov](http://www.sec.gov) as follows (or if such address has changed, by reviewing our filings for the relevant date on the SEC website):

·Prospectus dated September 7, 2018:

<https://www.sec.gov/Archives/edgar/data/1000275/000121465918005973/196181424b3.htm>

·Prospectus Supplement dated September 7, 2018:

<https://www.sec.gov/Archives/edgar/data/1000275/000121465918005975/f97180424b3.htm>

Our Central Index Key, or CIK, on the SEC website is 1000275.

Please see the section “Documents Incorporated by Reference” on page i of the above prospectus for a description of our filings with the SEC that are incorporated by reference therein.

The issuer has filed a registration statement (including a prospectus) with the SEC for the offering to which this communication relates. Before you invest, you should read the prospectus in that registration statement and other documents the issuer has filed with the SEC for more complete information about the issuer and this offering. You may get these documents for free by visiting EDGAR on the SEC website at [www.sec.gov](http://www.sec.gov). Alternatively, any underwriter or any dealer participating in the offering will arrange to send you the prospectus if you request it by calling your financial advisor or by calling Royal Bank of Canada at 1-877-688-2301.

## RISK FACTORS

An investment in the securities is subject to the risks described below, as well as the risks described under “Risk Factors” in the accompanying prospectus supplement and prospectus. The securities have complex features and are a riskier investment than ordinary debt securities. Also, your securities are not equivalent to investing directly in the Index or the common stocks included in the Index. Investors in the securities are also exposed to further risks related to the Issuer of the securities, Royal Bank of Canada, which are described in Royal Bank of Canada’s most recent annual report on Form 40-F filed with the SEC and incorporated by reference herein. See the categories of risks identified and disclosed in the management’s discussion and analysis of financial condition and results of operations included in the annual report on Form 40-F. This section (and the management’s discussion and analysis section of the annual report on Form 40-F) describes the most significant risks relating to the securities. You should carefully consider whether the securities are suited to your particular circumstances.

Your investment may result in a loss of up to 85% of your principal

We will not repay you a fixed amount of principal on the securities at maturity. The payment at maturity on the securities will depend on the percentage change in the level of the Index based on the Final Index Level relative to the Initial Index Level, and whether or not the Final Index Level is below the Buffer Level. Because the level of the Index is subject to market fluctuations, the amount of cash you receive at maturity may be more or less than the principal amount of the securities. If the Final Index Level is less than the Buffer Level, you will be exposed on a 1-to-1 basis to declines in the level of the Index beyond the Buffer Level. Accordingly, if the level of the Index decreases below the Buffer Level, you will lose up to 85% of your principal.

You will not receive interest payments on the securities

You will not receive any periodic interest payments on the securities or any interest payment at maturity. Your payment at maturity will depend on the percentage change in the level of the Index based on the Final Index Level relative to the Initial Index Level, and whether or not the Final Index Level falls below the Buffer Level.

Your yield may be lower than the yield on a standard debt security of comparable maturity

The yield that you will receive on your securities, which could be negative, may be less than the return you could earn on other investments. Even if your yield is positive, your yield may be less than the yield you would earn if you bought a standard senior non-callable debt security of Royal Bank of Canada with the same maturity date. Your investment may not reflect the full opportunity cost to you when you take into account factors that affect the time value of money. Unlike conventional senior non-callable debt securities, the securities do not guarantee the return of all of the principal amount at maturity. In addition, no interest will be paid during the term of your securities.

Your return is limited and will not reflect the return of owning the common stocks underlying the Index

You should understand that the opportunity to participate in the possible appreciation in the level of the Index through an investment in the securities is limited because the amount that you receive at maturity will never exceed the maximum maturity payment amount. The maximum maturity payment amount represents a maximum appreciation on the securities of [50% - 55%] over the principal amount of the securities. Although any positive return on the securities is based on 1.25 times any percentage increase of the Index, in no event will the amount you receive at maturity be greater than the maximum maturity payment amount of [\$1,500.00 - \$1,550.00] per security. The maximum maturity payment amount will be determined on the pricing date and disclosed in the final pricing supplement for the securities.

Owning the securities is not the same as owning the common stocks underlying the Index

The return on your securities will not reflect the return you would realize if you actually owned and held the common stocks underlying the Index for a similar period. First, because the maturity payment amount will be determined based on the performance of the Index, which is a price-return index, the return on the securities will not take into account the value of any dividends that may be paid on the common stocks underlying the Index. Second, as a holder of the securities, you will not be entitled to receive any dividend payments or other distributions on the common stocks underlying the Index, nor will you have voting rights or any other rights that holders of those common stocks may have. Even if the level of the Index increases

above the Initial Index Level during the term of the securities, the market value of the securities may not increase by the same amount. It is also possible for the level of the Index to increase while the market value of the securities declines.

An investment in securities linked to the Index is subject to risks associated in investing in stocks with a small market capitalization

The Index consists of stocks issued by companies with relatively small market capitalizations. These companies often have greater stock price volatility, lower trading volume and less liquidity than large-capitalization companies. As a result, the level of the Index may be more volatile than that of a market measure that does not track solely small-capitalization stocks. Stock prices of small-capitalization companies are also often more vulnerable than those of large-capitalization companies to adverse business and economic developments, and the stocks of small-capitalization companies may be thinly traded, and be less attractive to many investors if they do not pay dividends. In addition, small capitalization companies are often less well-established and less stable financially than large-capitalization companies and may depend on a small number of key personnel, making them more vulnerable to loss of those individuals. Small capitalization companies tend to have lower revenues, less diverse product lines, smaller shares of their target markets, fewer financial resources and fewer competitive strengths than large-capitalization companies. These companies may also be more susceptible to adverse developments related to their products or services.

There may not be an active trading market for the securities

The securities will not be listed on any securities exchange. There can be no assurance that a liquid trading market will develop for the securities. Even if a secondary market for the securities develops, it may not provide significant liquidity and transaction costs in any secondary market could be high. As a result, the difference between bid and asked prices for the securities in any secondary market could be substantial. If you sell your securities before maturity, you may have to do so at a discount from the initial public offering price, and, as a result, you may suffer substantial losses.

Wells Fargo Securities, LLC and its broker-dealer affiliates may make a market for the securities, although they are not required to do so. As market makers, trading of the securities may cause Wells Fargo Securities, LLC or its broker-dealer affiliates to have long or short positions in the securities. Because we do not expect that any other market makers will participate in a secondary market for the securities, the price at which you may be able to sell your securities is likely to depend on the price, if any, at which Wells Fargo Securities, LLC or its broker-dealer affiliates may be willing to buy your securities. See "Supplemental Plan of Distribution."

The amount to be paid at maturity is not linked to the level of the Index at any time other than the valuation date. The payment at maturity will be based on the level of the Index only on the valuation date. Therefore, for example, if the closing level of the Index decreased precipitously on the valuation date, the payment on the securities may be significantly less than it would otherwise have been had the payment been linked to the closing level of the Index prior to that decrease. Although the actual level of the Index on the maturity date or at other times during the term of the securities may be higher than the Index level on the valuation date, you will not benefit from the closing level of the Index at any time other than the valuation date.

Many factors affect the market value of the securities

The market value of the securities will be affected by factors that interrelate in complex ways. It is important for you to understand that the effect of one factor may offset any increase in the market value of the securities caused by another factor and that the effect of one factor may compound any decrease in the market value of the securities caused by another factor. For example, a change in the volatility of the Index may offset some or all of any increase in the market value of the securities attributable to another factor, such as an increase in the level of the Index. In addition, a change in interest rates may offset other factors that would otherwise change the level of the Index, and therefore, may change the market value of the securities. We expect that the market value of the securities will depend to a significant extent on the amount, if any, by which the Index level during the term of the securities exceeds or does not exceed the Initial Index Level. If you choose to sell your securities when the level of the Index exceeds the Initial Index Level, you may receive substantially less than the amount that would be payable at maturity based on this level because of the expectation that the Index will continue to fluctuate until the valuation date. We believe that other factors that may also influence the value of the securities include:

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the volatility (frequency and magnitude of changes in the level) of the Index and, in particular, market expectations regarding the volatility of the Index;

- market interest rates in the U.S.;
- the dividend yields of the common stocks included in the Index;
- our creditworthiness, as perceived in the market;
- changes that affect the Index, such as additions, deletions or substitutions;
- the time remaining to maturity; and

geopolitical, economic, financial, political, regulatory or judicial events as well as other conditions may affect the common stocks included in the Index.

The securities will be debt obligations of Royal Bank of Canada. No other company or entity will be responsible for payments under the securities

The securities will be issued by Royal Bank of Canada. The securities will not be guaranteed by any other company or entity. No other entity or company will be responsible for payments under the securities or liable to holders of the securities in the event Royal Bank of Canada defaults under the securities. Royal Bank of Canada's credit ratings are an assessment of our ability to pay our obligations, including those on the securities. Consequently, if we default on our obligations, you could lose your entire investment, and actual or anticipated declines in our creditworthiness may affect the value of the securities. The securities will not be issued by or guaranteed by Wells Fargo Securities, LLC or any of its affiliates.

Changes that affect the Index will affect the market value of the securities and the maturity payment amount

The policies of the Index Sponsor concerning the calculation of the Index, additions, deletions or substitutions of the common stocks underlying the Index and the manner in which changes affecting the issuers of those stocks, such as stock dividends, reorganizations or mergers, are reflected in the Index could affect the level of the Index, the maturity payment amount, and the market value of the securities prior to maturity. The amount payable on the securities and their market value could also be affected if the Index Sponsor changes these policies, for example, by changing the manner in which it calculates the Index, or if the Index Sponsor discontinues or suspends calculation or publication of the Index, in which case it may become difficult to determine the market value of the securities. If events such as these occur, or if the level of the Index is not available on the valuation date because of a market disruption event or for any other reason and no successor index is selected, the calculation agent may determine the level of the Index — and thus the maturity payment amount — in its sole discretion.

We have no affiliation with the Index Sponsor and will not be responsible for any actions taken by the Index Sponsor. We have no affiliation with the Index Sponsor and the Index Sponsor will not be involved in the offering of the securities. Consequently, we have no control of the actions of the Index Sponsor, including any actions of the type that would affect the composition of the Index, and therefore, the level of the Index. The Index Sponsor has no obligation of any sort with respect to the securities. Thus, the Index Sponsor has no obligation to take your interests into consideration for any reason, including in taking any actions that might affect the value of the securities.

Historical levels of the Index should not be taken as an indication of the future levels of the Index during the term of the securities

The trading prices of the common stocks underlying the Index will determine the Index level at any given time. As a result, it is impossible to predict whether the level of the Index will rise or fall. Trading prices of the common stocks underlying the Index will be influenced by complex and interrelated political, economic, financial and other factors that can affect the issuers of those stocks.



Hedging transactions may affect the return on the securities

As described below under “Use of Proceeds and Hedging” on page PS-29, we, through one or more hedging counterparties, may hedge our obligations under the securities by purchasing common stocks underlying the Index, futures or options on the Index or common stocks underlying the Index, or exchange-traded funds or other derivative instruments with returns linked or related to changes in the level of the Index or trading prices of common stocks underlying the Index, and may adjust these hedges by, among other things, purchasing or selling any of these assets at any time. Although they are not expected to, any of these hedging activities may adversely affect the trading prices of common stocks underlying the Index and/or the level of the Index and, therefore, the market value of the securities. It is possible that we or one or more of our hedging counterparties could receive substantial returns from these hedging activities while the market value of the securities declines.

Our initial estimated value of the securities will be less than the initial public offering price

Our initial estimated value of the securities will be less than the initial public offering price of the securities. This is due to, among other things, the fact that the initial public offering price of the securities reflects the borrowing rate we pay to issue securities of this kind (an internal funding rate that is lower than the rate at which we borrow funds by issuing conventional fixed rate debt), and the inclusion in the initial public offering price of the underwriting discount and commission and hedging and other costs associated with the securities.

The price, if any, at which you may be able to sell your securities prior to maturity may be less than the initial public offering price and our initial estimated value

Assuming 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 will be less than the initial public offering price and, subject to the discussion in the next paragraph, will be less than our initial estimated value. This is because any such sale price would not be expected to include the underwriting discount and commission or hedging or other costs associated with the securities, including the estimated profit our hedging counterparty(ies) expect to realize in consideration for assuming the risks inherent in hedging our obligations under the securities. In addition, any price at which you may sell the securities is likely to reflect customary bid-ask spreads for similar trades, and the cost of unwinding any related hedge transactions. In addition, the value of the securities determined for any secondary market price is expected to be based in part on the yield that is reflected in the interest rate on our conventional debt securities of similar maturity that are traded in the secondary market, rather than the internal funding rate that we used to price the securities and determine the initial estimated value. As a result, the secondary market price of the securities will be less than if the internal funding rate was used. These factors, together with various credit, market and economic factors over the term of the securities, and, potentially, changes in the level of the Index, are expected to 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. Moreover, we expect that any secondary market price will be based on Wells Fargo Securities, LLC’s valuation of the securities, which may differ from (and may be lower than) the valuation that we would determine for the securities at that time based on the methodology by which we determined the initial estimated value set forth on the cover page of this document.

As set forth below in the section “Supplemental Plan of Distribution,” for a limited period of time after the original issue date, Wells Fargo Securities, LLC may purchase the securities at a price that is greater than the price that would otherwise be determined at that time as described in the preceding paragraph. However, over the course of that period, assuming no changes in any other relevant factors, the price you may receive if you sell your securities is expected to decline.

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 are set

Our initial estimated value of the securities is based on the value of our obligation to make the payments on the securities, together with the mid-market value of the derivative embedded in the terms of the securities. See “Supplemental Plan of Distribution—Structuring the Securities” below. Our estimate is based on a variety of assumptions, including our internal funding rate (which represents a discount from our credit spreads), expectations as to dividends on the securities included in the Index, interest rates and volatility, and the expected term of the securities. These assumptions are based on

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certain forecasts about future events, which may prove to be incorrect. Other entities, including Wells Fargo Securities, LLC in connection with determining any secondary market price for the securities, may value the securities or similar securities at a price that is significantly different than we do.

The value of the securities at any time after the pricing date 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 any secondary market, if any, should be expected to differ materially from our initial estimated value of your securities.

Potential conflicts of interest could arise

We, Wells Fargo Securities, LLC and our respective affiliates may engage in trading activities related to the Index or the common stocks underlying the Index that are not for the account of holders of the securities or on their behalf. These trading activities may present a conflict between the holders' interest in the securities and the interests we, Wells Fargo Securities, LLC and our respective affiliates will have in the proprietary accounts, in facilitating transactions, including options and other derivatives transactions, for our customers and in accounts under our management. These trading activities could be adverse to the interests of the holders of the securities.

We, Wells Fargo Securities, LLC and our respective affiliates may presently or from time to time engage in business with one or more of the issuers of the common stocks underlying the Index. This business may include extending loans to, or making equity investments in, such companies or providing advisory services to such companies, including merger and acquisition advisory services. In the course of business, we, Wells Fargo Securities, LLC and our respective affiliates may acquire non-public information relating to these companies and, in addition, one or more of our affiliates or the affiliates of the agent may publish research reports about these companies. Neither we nor the agent make any representation to any purchasers of the securities regarding any matters whatsoever relating to the issuers of the common stocks underlying the Index. Any prospective purchaser of the securities should undertake an independent investigation of these companies as in its judgment is appropriate to make an informed decision regarding an investment in the securities. The offering of the securities does not reflect any investment or sell recommendations as to the Index or the securities underlying the Index by us, Wells Fargo Securities, LLC or our respective affiliates. The calculation agent may postpone the valuation date and, therefore, determination of the Final Index Level and the maturity date if a market disruption event occurs on the valuation date

The valuation date and, therefore, determination of the Final Index Level may be postponed if the calculation agent determines that a market disruption event has occurred or is continuing on the valuation date with respect to the Index. As a result, the maturity date for the securities would be postponed. You will not be entitled to compensation from us or the calculation agent for any loss suffered as a result of the occurrence of a market disruption event, any resulting delay in payment or any change in the level of the Index after the valuation date. See "Specific Terms of the Securities—Valuation Date" and "— Market Disruption Events" below.

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

The calculation agent will, among other things, determine the amount of your payment at maturity on the securities. Our wholly-owned subsidiary, RBC Capital Markets, LLC, will serve as the calculation agent. We may change the calculation agent after the original issue date without notice to you. The calculation agent will exercise its judgment when performing its functions. For example, the calculation agent may have to determine whether a market disruption event affects the Index. Since this determination by the calculation agent will affect the payment at maturity on the securities, the calculation agent may have a conflict of interest if it needs to make a determination of this kind. In addition, the calculation agent determined the initial estimated value of the securities set forth on the cover page of this pricing supplement.

Significant aspects of the tax treatment of the securities are uncertain

The tax treatment of the securities is uncertain. We do not plan to request a ruling from the Internal Revenue Service or from the Canada Revenue Agency regarding the tax treatment of the securities, 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 securities even though that holder will not receive any payments with respect to the securities until maturity or earlier sale or exchange and whether all or part of the gain a holder may recognize upon sale, exchange or maturity of an instrument such as the securities should be treated as ordinary income. The outcome of this process is uncertain and could apply on a retroactive basis.

Please read carefully the section entitled "Supplemental Discussion of U.S. Federal Income Tax Consequences" in this pricing supplement, the section entitled "Tax Consequences" in the accompanying prospectus and the section entitled "Certain Income Tax Consequences" in the accompanying prospectus supplement. You should consult your tax advisor about your own tax situation.

For a discussion of the Canadian federal income tax consequences of investing in the securities, please read the section entitled "Tax Consequences" in the accompanying prospectus and the section entitled "Certain Income Tax Consequences" in the accompanying prospectus supplement. You should consult your tax advisor about your own tax situation.

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**SPECIFIC TERMS OF THE SECURITIES**

The securities are to be issued pursuant to the terms of the Indenture dated as of October 23, 2003, between Royal Bank of Canada and The Bank of New York Mellon (as supplemented to date, the “Indenture”).

The information contained in this section and in the prospectus supplement and the prospectus summarizes some of the terms of the securities and the Indenture. This summary does not contain all of the information that may be important to you as a potential investor in the securities. You should read the Indenture before making your investment decision. We have filed copies of the Indenture with the SEC.

Issuer: Royal Bank of Canada

Specified  
Currency: U.S. dollars

Principal  
Amount: \$1,000 per security

Aggregate  
Principal  
Amount: \$·

Agent: Wells Fargo Securities, LLC  
The agent may make sales through its affiliates or selling agents.

Agent  
Acting in  
the  
Capacity  
of: Principal

Pricing  
Date: November 30, 2018

Original  
Issue Date: December 5, 2018

Maturity  
Date: December 5, 2023, subject to postponement as described below. The maturity date will be a business day. In the event the maturity date would otherwise be a date that is not a business day, the maturity date will be postponed to the next succeeding date that is a business day and no interest shall accrue or be payable as a result of that postponement.

Valuation  
Date: November 28, 2023. However, if that day occurs on a day that is not a trading day or on a day on which the calculation agent has determined that a market disruption event (as defined under “—Market Disruption Events” below) has occurred or is continuing, then the valuation date will be postponed until the next succeeding trading day on which the calculation agent determines that a market disruption event does not occur or is not continuing; provided that in no event will the valuation date be postponed by more than eight trading days. If the valuation date is postponed by eight trading days, and a market disruption event occurs or is continuing on that eighth trading day, the calculation agent will determine the closing level of the Index on such eighth trading day in accordance with the formula for and method of calculating the closing level of the Index last in effect prior to commencement of the market disruption event, using the closing price (or, with respect to any relevant security, if a market disruption event has occurred with respect to such security, its good faith estimate of the value of such security at the scheduled closing time of the relevant stock exchange for such security or, if earlier, the actual closing time of the regular trading session of such relevant stock exchange) on such date of each security included in the Index. As used herein, “closing price” means, with respect to any security on any date, the relevant stock exchange traded or quoted price of such security as of the scheduled closing time of the relevant stock exchange for such security or, if earlier, the actual closing time of the regular trading session of such relevant stock exchange.

If the valuation date is postponed, then the maturity date of the securities will be postponed by an equal number of business days.

The Index: The return on the securities is linked to the performance of the Russell 2000® Index (the Index).

Payment at Maturity: At maturity, for each security you own, you will receive a cash payment equal to the maturity payment amount. The maturity payment amount to which you will be

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entitled depends on the change in the level of the Index based on the Final Index Level relative to the Initial Index Level, and whether or not the Final Index Level is below the Buffer Level.

The maturity payment amount for each security will be determined by the calculation agent as described below:

- If the Final Index Level is greater than the Initial Index Level, the maturity payment amount per security will equal the lesser of:

(a)  $\$1,000 + (\$1,000 \times \frac{\text{Final Index Level} - \text{Initial Index Level}}{\text{Initial Index Level}} \times \text{Participation Rate})$ ; and

(b) the maximum maturity payment amount

- If the Final Index Level is less than or equal to the Initial Index Level but greater than or equal to the Buffer Level, the maturity payment amount per security will equal \$1,000.

- If the Final Index Level is less than the Buffer Level, the maturity payment amount per security will equal:

$\$1,000 - (\$1,000 \times \frac{\text{Buffer Level} - \text{Final Index Level}}{\text{Initial Index Level}})$

In such a case, you will lose up to 85% of your principal.

If the Final Index Level is less than the Buffer Level, you will lose up to 85% of your principal. If the Final Index Level is zero, the maturity payment amount will be \$150.00 per security.

If any payment is due on the securities on a day which is not a business day, then that payment may be made on the next day that is a business day, in the same amount and with the same effect as if paid on the original due date. No interest shall be payable as a result of such postponement.

Maximum Maturity Payment Amount:	[\$1,500.00 - \$1,550.00] per security (to be determined on the pricing date)
Initial Index Level:	The closing level of the Index on the pricing date.
Final Index Level:	The closing level of the Index on the valuation date, as determined by the calculation agent.
Buffer Level:	85% of the Initial Index Level.
Closing Level of the Index:	The official closing level of the Index or any successor index (as defined under “—Discontinuation of the Index; Adjustments to the Index” below) published by the Index Sponsor or any successor index sponsor at the regular weekday close of trading on that trading day. In certain circumstances, the closing level will be based on the alternate calculation of the Index described under “—Discontinuation of the Index; Adjustments to the Index” below.
Participation Rate:	125%
Market Disruption Events:	A “market disruption event” means any of the following events as determined by the calculation agent in its sole discretion:  (A) The occurrence or existence of a material suspension of or limitation imposed on trading by the relevant stock exchanges or otherwise relating to securities which then comprise 20% or more of the level of the Index or any

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successor equity index at any time during the one-hour period that ends at the close of trading on that day, whether by reason of movements in price exceeding limits permitted by those relevant stock exchanges or otherwise.

(B) The occurrence or existence of a material suspension of or limitation imposed on trading by any related futures or options exchange or otherwise in futures or options contracts relating to the Index or any successor equity index on any related futures or options exchange at any time during the one-hour period that ends at the close of trading on that day, whether by reason of movements in price exceeding limits permitted by the related futures or options exchange or otherwise.

(C) The occurrence or existence of any event, other than an early closure, that materially disrupts or impairs the ability of market participants in general to effect transactions in, or obtain market values for, securities that then comprise 20% or more of the level of the Index or any successor equity index on their relevant stock exchanges at any time during the one-hour period that ends at the close of trading on that day.

(D) The occurrence or existence of any event, other than an early closure, that materially disrupts or impairs the ability of market participants in general to effect transactions in, or obtain market values for, futures or options contracts relating to the Index or any successor equity index on any related futures or options exchange at any time during the one-hour period that ends at the close of trading on that day.

(E) The closure on any exchange business day of the relevant stock exchanges on which securities that then comprise 20% or more of the level of the Index or any successor equity index are traded or any related futures or options exchange prior to its scheduled closing time unless the earlier closing time is announced by the relevant stock exchange or related futures or options exchange, as applicable, at least one hour prior to the earlier of (1) the actual closing time for the regular trading session on such relevant stock exchange or related futures or options exchange, as applicable, and (2) the submission deadline for orders to be entered into the relevant stock exchange or related futures or options exchange, as applicable, system for execution at such actual closing time on that day.

(F) The relevant stock exchange for any security underlying the Index or successor equity index or any related futures or options exchange fails to open for trading during its regular trading session.

For purposes of determining whether a market disruption event has occurred:

(1) the relevant percentage contribution of a security to the level of the Index or any successor equity index will be based on a comparison of (x) the portion of the level of such index attributable to that security and (y) the overall level of the Index or successor equity index, in each case immediately before the occurrence of the market disruption event;

(2) the “close of trading” on any trading day for the Index or any successor equity index means the scheduled closing time of the relevant stock exchanges with respect to the securities underlying the Index or successor equity index on such trading day; provided that, if the actual closing time of the regular trading session of any such relevant stock exchange is earlier than its scheduled closing time on such trading day, then (x) for purposes of clauses (A) and (C) of the definition of “market disruption event” above, with respect to any security underlying the Index or successor equity index for which such relevant stock exchange

is its relevant stock exchange, the “close of trading” means such actual closing time and (y) for purposes of clauses (B) and (D) of the definition of “market disruption event” above, with respect to any futures or options contract relating to the Index or successor equity index, the “close of trading” means the latest actual closing time of the regular trading session of any of the relevant stock exchanges, but in no event later than the scheduled closing time of the relevant stock exchanges;

(3) the “scheduled closing time” of any relevant stock exchange or related futures or options exchange on any trading day for the Index or any successor equity index means the scheduled weekday closing time of such relevant stock exchange or related futures or options exchange on such trading day, without regard to after hours or any other trading outside the regular trading session hours; and

(4) an “exchange business day” means any trading day for the Index or any successor equity index on which each relevant stock exchange for the securities underlying the Index or any successor equity index and each related futures or options exchange are open for trading during their respective regular trading sessions, notwithstanding any such relevant stock exchange or related futures or options exchange closing prior to its scheduled closing time.

The “relevant stock exchange” for any security underlying the Index means the primary exchange or quotation system on which such security is traded, as determined by the calculation agent.

The “related futures or options exchange” for the Index means an exchange or quotation system where trading has a material effect (as determined by the calculation agent) on the overall market for futures or options contracts relating to the Index.

If the Index Sponsor discontinues publication of the Index and the Index Sponsor or another entity publishes a successor or substitute index that the calculation agent determines, in its sole discretion, to be comparable to the Index (a successor index), then the calculation agent will substitute the successor index as calculated by the Index Sponsor or any other entity for the Index and calculate the Final Index Level as described above under “—Closing Level of the Index.”

If the Index Sponsor discontinues publication of the Index and:

- the calculation agent does not select a successor index, or
- the successor index is no longer published on any of the relevant trading days,

the calculation agent will compute a substitute level for the Index in accordance with the procedures last used to calculate the level of the Index before any discontinuation but using only those securities that were included in the Index prior to that discontinuation. If a successor index is selected or the calculation agent calculates a level as a substitute for the Index as described below, the successor index or level will be used as a substitute for the Index for all purposes going forward, including for purposes of determining whether a market disruption event exists, even if the Index Sponsor elects to begin republishing the Index, unless the calculation agent in its sole discretion decides to use the republished Index.

Discontinuation of/Adjustments to the Index:

If the Index Sponsor discontinues publication of the Index before the valuation date and the calculation agent determines that no successor index is available at that time, then on each trading day until the earlier to occur of:

- the determination of the Final Index Level, or
- a determination by the calculation agent that a successor index is available,

the calculation agent will determine the level that would be used in computing the

maturity payment amount as described in the preceding paragraph as if that day were a trading day. The calculation agent will cause notice of each level to be published not less often than once each month in The Wall Street Journal, another newspaper of general circulation or a website or webpage available to holders of the securities, and arrange for information with respect to these levels to be made available by telephone.

Notwithstanding these alternative arrangements, discontinuation of the publication of the Index would be expected to adversely affect the value of, liquidity of and trading in the securities.

If at any time the method of calculating the level of the Index or the successor index changes in any material respect, or if the Index or successor index is in any other way modified so that the level of the Index or successor index does not, in the opinion of the calculation agent, fairly represent the level of the Index had those changes or modifications not been made, then, from and after that time, the calculation agent will, at the close of business in The City of New York, on each date that the closing level of the Index is to be calculated, make any adjustments as, in the good faith judgment of the calculation agent, may be necessary in order to arrive at a calculation of a level of a stock index comparable to the Index or the successor index, as the case may be, as if those changes or modifications had not been made, and calculate the closing level with reference to the Index or the successor index, as so adjusted. Accordingly, if the method of calculating the Index or a successor index is modified and has a dilutive or concentrative effect on the level of that index e.g., due to a split, then the calculation agent will adjust that index in order to arrive at a level of that index as if it had not been modified, e.g., as if a split had not occurred.

Neither the calculation agent nor Royal Bank of Canada will have any responsibility for good faith errors or omissions in calculating or disseminating information regarding the Index or any successor index or as to modifications, adjustments or calculations by the Index Sponsor or any successor index sponsor in order to arrive at the level of the Index or any successor index.

**Calculation Agent:** RBC Capital Markets, LLC will serve as the calculation agent. All determinations made by the calculation agent will be at the sole discretion of the calculation agent and, absent a determination of a manifest error, will be conclusive for all purposes and binding on the holders and beneficial owners of the securities.

**Trustee:** The Bank of New York Mellon

**Business Day:** For purposes of the securities, a business day means a Monday, Tuesday, Wednesday, Thursday or Friday that is not a day on which banking institutions in The City of New York generally are authorized or obligated by law, regulation or executive order to close.

**Trading Day:** A "trading day" means a day, as determined by the calculation agent, on which (i) the relevant stock exchanges with respect to each security underlying the Index are scheduled to be open for trading for their respective regular trading sessions and (ii) each related futures or options exchange is scheduled to be open for trading for its regular trading session.

**Additional Amounts:** We will pay any amounts to be paid by us on the securities without deduction or withholding for, or on account of, any and all present or future income, stamp and other taxes, levies, imposts, duties, charges, fees, deductions or withholdings (taxes) now or hereafter imposed, levied, collected, withheld or assessed by or on behalf of Canada or any Canadian political subdivision or authority that has the power to tax, unless the deduction or withholding is required by law or by the interpretation or administration thereof by the relevant governmental authority. At any time a Canadian taxing jurisdiction requires us to deduct or withhold for or on account of taxes from any payment made under or in respect of the securities, we will pay such additional amounts (Additional Amounts) as may be necessary so that the net amounts received

by each holder (including Additional Amounts), after such deduction or withholding, shall not be less than the amount the holder would have received had no such deduction or withholding been required.

However, no Additional Amounts will be payable with respect to a payment made to a holder of a security or of a right to receive payments in respect thereto (a Payment Recipient), which we refer to as an Excluded Holder, in respect of any taxes imposed because the beneficial owner or Payment Recipient:

(i) is someone with whom we do not deal at arm's length (within the meaning of the Income Tax Act (Canada)) at the time of making such payment;

(ii) is subject to such taxes by reason of its being connected presently or formerly with Canada or any province or territory thereof otherwise than by reason of the holder's activity in connection with purchasing the securities, the holding of securities or the receipt of payments thereunder;

(iii) is, or does not deal at arm's length with a person who is, a specified shareholder (within the meaning of subsection 18(5) of the Income Tax Act (Canada)) of Royal Bank of Canada (generally a person will be a specified shareholder for this purpose if that person, either alone or together with persons with whom the person does not deal at arm's length, owns 25% or more of (a) our voting shares, or (b) the fair market value of all of our issued and outstanding shares);

(iv) presents such security for payment (where presentation is required) more than 30 days after the relevant date (except to the extent that the holder thereof would have been entitled to such Additional Amounts on presenting a security for payment on the last day of such 30 day period); for this purpose, the relevant date in relation to any payments on any security means:

a. the due date for payment thereof, or

b. if the full amount of the monies payable on such date has not been received by the Trustee on or prior to such due date, the date on which the full amount of such monies has been received and notice to that effect is given to holders of the securities in accordance with the Indenture;

(v) could lawfully avoid (but has not so avoided) such withholding or deduction by complying, or requiring that any agent comply with, any statutory requirements necessary to establish qualification for an exemption from withholding or by making, or requiring that any agent make, a declaration of non-residence or other similar claim for exemption to any relevant tax authority; or

(vi) is subject to deduction or withholding on account of any tax, assessment, or other governmental charge that is imposed or withheld by reason of the application of Section 1471 through 1474 of the United States Internal Revenue Code of 1986, as amended (Code) (or any successor provisions), any regulation, pronouncement, or agreement thereunder, official interpretations thereof, or any law implementing an intergovernmental approach thereto, whether currently in effect or as published and amended from time to time.

For the avoidance of doubt, we will not have any obligation to pay any holders Additional Amounts on any tax which is payable otherwise than by deduction or

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withholding from payments made under or in respect of the securities at maturity.

We will also make such withholding or deduction and remit the full amount deducted or withheld to the relevant authority in accordance with applicable law. We will furnish to the Trustee, within 30 days after the date the payment of any taxes is due pursuant to applicable law, certified copies of tax receipts evidencing that such payment has been made or other evidence of such payment satisfactory to the Trustee. We will indemnify and hold harmless each holder of the securities (other than an Excluded Holder) and upon written request reimburse each such holder for the amount of (x) any taxes so levied or imposed and paid by such holder as a result of payments made under or with respect to the securities, and (y) any taxes levied or imposed and paid by such holder with respect to any reimbursement under (x) above, but excluding any such taxes on such holder's net income or capital.

For additional information, see the section entitled "Tax Consequences—Canadian Taxation" in the accompanying prospectus.

Authorized Denominations:	\$1,000 and integral multiples of \$1,000 in excess thereof.
Form of Securities:	Book-entry
Listing:	The securities will not be listed on any securities exchange. In the event we fail to pay the maturity payment amount on the maturity date, any overdue payment in respect of the maturity payment amount of the securities on the maturity date will bear interest until the date upon which all sums due in respect of such securities are received by or on behalf of the relevant holder, at a rate per annum which is the rate for deposits in U.S. dollars for a period of six months which appears on the Reuters Page LIBOR01 (or any replacement page or pages for the purpose of displaying prime rates or base lending rates of major U.S. banks) as of 11:00 a.m. (London time) on the first business day following that failure to pay. That rate will be determined by the calculation agent. If interest is required to be calculated for a period of less than one year, it will be calculated on the basis of a 360-day year consisting of the actual number of days in the period.
Failure to Pay Maturity Payment Amount When Due:	
Events of Default and Acceleration:	If the maturity of the securities is accelerated upon an event of default under the Indenture, the amount payable upon acceleration will be determined by the calculation agent. The amount will be the maturity payment amount, calculated as if the date of declaration of acceleration were the valuation date.

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## RUSSELL 2000® INDEX

All disclosures contained in this document regarding the Index, including, without limitation, its make up, method of calculation, and changes in its components, have been derived from publicly available sources. The information reflects the policies of, and is subject to change by, FTSE Russell. FTSE Russell, which owns the copyright and all other rights to the Index, has no obligation to continue to publish, and may discontinue publication of, the Index. None of us, Wells Fargo Securities, LLC or RBCCM accepts any responsibility for the calculation, maintenance or publication of the Index or any successor index.

The Russell 2000® Index (“RTY”) 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 RTY (Bloomberg L.P. index symbol “RTY”) on January 1, 1984. The RTY was set to 135 as of the close of business on December 31, 1986. FTSE Russell calculates and publishes the RTY. The RTY 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 RTY 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, representing approximately 98% of the investable U.S. equity market. The RTY is determined, comprised, and calculated by the index sponsor without regard to the securities.

### Selection of Stocks Underlying the RTY

All companies eligible for inclusion in the RTY must be classified as a U.S. company under the index sponsor’s country-assignment methodology. If a company is incorporated, has a stated headquarters location, and trades 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, the index sponsor 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, the index sponsor 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, the index sponsor will use the primary country from which the company’s revenues are primarily derived for the comparison with the three HCIs in a similar manner. The index sponsor 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, the index sponsor will assign the company to the country of its headquarters, which is defined as the address of the company’s principal executive offices, unless that country is a Benefit Driven Incorporation “BDI” country, in which case the company will be assigned to the country of its most liquid stock exchange. 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.

All securities eligible for inclusion in the RTY 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 last trading day in May 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. Initial public offerings are added each quarter and must have a closing price at or above \$1.00 on the last day of their eligibility period in order to qualify for index inclusion. If an existing stock does not trade on the “rank day” (typically the last trading day in May, but a confirmed timetable is announced each Spring) but does have a closing price at or above \$1.00 on another eligible U.S. exchange, that stock will be eligible for inclusion.

An important criterion used to determine the list of securities eligible for the RTY is total market capitalization, which is defined as the market price as of the last trading day in May for those securities being considered at annual reconstitution times the total number of shares outstanding. Where applicable, common stock, non-restricted exchangeable shares and partnership units/membership interests are used to determine market capitalization. Any other form of shares such as preferred stock, convertible preferred stock, redeemable shares, participating preferred

stock, warrants and rights, installment receipts or trust receipts, are excluded from the calculation. If multiple share classes of common stock exist, they are combined. In cases where the common stock share classes act independently of each other (e.g., tracking stocks), each class is considered for inclusion separately. If multiple share classes exist, the pricing vehicle will be designated as the share class with the highest two-year trading volume as of the rank day in May.

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Companies with a total market capitalization of less than \$30 million are not eligible for the RTY. Similarly, companies with only 5% or less of their shares available in the marketplace are not eligible for the RTY. 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), blank check companies, special-purpose acquisition companies, and limited partnerships are also not eligible for inclusion in the Russell U.S. Indices. Exchange traded funds and mutual funds are also excluded. Bulletin board, pink-sheets, and over-the-counter (“OTC”) traded securities are not eligible for inclusion.

Annual reconstitution is a process by which the RTY is completely rebuilt. On the rank last trading day of May, all eligible securities are ranked by their total market capitalization. The largest 4,000 become the Russell 3000E Index, and the other of the index sponsor’s indexes are determined from that set of securities. Reconstitution of the RTY 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, the index sponsor adds initial public offerings to the RTY on a quarterly basis based on total market capitalization guidelines 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.

#### License Agreement

FTSE Russell and Royal Bank of Canada have entered into a non-exclusive license agreement providing for the license to Royal Bank of Canada, and certain of its affiliates, in exchange for a fee, of the right to use indices owned and published by FTSE Russell in connection with some securities, including the securities.

FTSE Russell does not guarantee the accuracy and/or the completeness of the RTY or any data included in the RTY and has no liability for any errors, omissions, or interruptions in the RTY. FTSE Russell makes no warranty, express or implied, as to results to be obtained by the calculation agent, holders of the securities, or any other person or entity from the use of the RTY or any data included in the RTY in connection with the rights licensed under the license agreement described in this document or for any other use. FTSE Russell makes no express or implied warranties, and hereby expressly disclaims all warranties of merchantability or fitness for a particular purpose with respect to the RTY or any data included in the RTY. Without limiting any of the above information, in no event will FTSE Russell have any liability for any special, punitive, indirect or consequential damages, including lost profits, even if notified of the possibility of these damages.

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

“Russell 2000®” and “Russell 3000®” are registered trademarks of FTSE Russell in the U.S. and other countries.



Historical Closing Levels of the Index

Since its inception, the level of the Index has experienced significant fluctuations. Any historical upward or downward trend in the closing level of the Index during any period shown below is not an indication that the closing level of the Index is more or less likely to increase or decrease at any time during the term of the securities. The historical levels of the Index do not give an indication of future performance of the Index. We cannot make any assurance that the future performance of the Index or the trading prices of the common stocks underlying the Index will result in holders of the securities receiving a positive total return on their investment.

We obtained the closing levels of the Index listed below from Bloomberg Financial Markets without independent verification. The actual levels of the Index at or near maturity of the securities may bear little relation to the historical levels shown below.

The following graph sets forth the daily closing levels of the Index for the period from January 1, 2013 to November 7, 2018. This historical data on the Index is not indicative of the future level of the Index or what the market value of the securities may be. Any historical upward or downward trend in the level of the Index during any period set forth below is not any indication that the level of the Index is more or less likely to increase or decrease at any time during the term of the securities.

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#### SUPPLEMENTAL DISCUSSION OF CANADIAN FEDERAL INCOME TAX CONSEQUENCES

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

#### SUPPLEMENTAL DISCUSSION OF U.S. FEDERAL INCOME TAX CONSEQUENCES

The following, together with the discussion of U.S. federal income taxation in the accompanying prospectus and prospectus supplement, is a general description of the material U.S. tax considerations relating to the securities. It does not purport to be a complete analysis of all tax considerations relating to the securities. Prospective purchasers of the securities 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 the U.S. of acquiring, holding and disposing of the securities and receiving payments under the securities. 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.

##### Supplemental U.S. Tax Considerations

The following section supplements the discussion of U.S. federal income taxation in the accompanying prospectus under “Tax Consequences – United States Taxation” and prospectus supplement under “Certain Income Tax Consequences – United States Taxation” with respect to U.S. holders (as defined in the accompanying prospectus). It applies only to those initial holders who are not excluded from the discussion of U.S. federal income taxation in the accompanying prospectus. It does not apply to holders subject to special rules including holders subject to Section 451(b) of the Internal Revenue Code of 1986, as amended (the Code). You should consult with your own tax advisor concerning the consequences of investing in and holding the securities.

**NO STATUTORY, JUDICIAL OR ADMINISTRATIVE AUTHORITY DIRECTLY DISCUSSES HOW THE SECURITIES 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 SECURITIES 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 SECURITIES, INCLUDING THE APPLICATION OF STATE, LOCAL OR OTHER TAX LAWS AND THE POSSIBLE EFFECTS OF CHANGES IN FEDERAL OR OTHER TAX LAWS.**

In the opinion of our counsel, Morrison & Foerster LLP, it would generally be reasonable to treat the securities as pre-paid cash-settled derivative contracts in respect of the Index for U.S. federal income tax purposes, and the terms of the securities 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 securities for all tax purposes in accordance with such characterization. If the securities are so treated, a U.S. holder should generally recognize capital gain or loss upon the sale, exchange or maturity of the securities in an amount equal to the difference between the amount a holder receives at such time and the holder’s tax basis in the securities. In general, a U.S. holder’s tax basis in the securities will be equal to the price the holder paid for the securities. 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.

We will not attempt to ascertain whether the issuer of any of the component stocks included in the Index would be treated as a “passive foreign investment company” within the meaning of Section 1297 of the Code, or a “United States real property holding corporation” within the meaning of Section 897 of the Code. If the issuer of one or more of such stocks 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 issuers of the component stocks included in the Index and consult your tax advisor regarding the possible consequences to you in this regard.

**Alternative Treatments.** Alternative tax treatments of the securities 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 also be possible to treat a security, and the Internal Revenue Service might assert that a security should be treated, as a single debt instrument. Pursuant to such characterization, since the securities 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 securities are so treated, a holder would generally be required to accrue interest currently over the term of the securities 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, exchange or maturity of the securities would be ordinary income and any loss recognized by a holder at such time would be ordinary loss to the extent of interest included in income in the current or previous taxable years in respect of the securities, and thereafter, would be capital loss.

Because of the absence of authority regarding the appropriate tax characterization of the securities, it is also possible that the Internal Revenue Service could seek to characterize the securities in a manner that results in 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, exchange or maturity of the securities 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 securities. According to the notice, the Internal Revenue Service and the U.S. Treasury Department are actively considering whether the holder of an instrument such as the securities 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 securities will ultimately be required to accrue income currently and this could be applied on a retroactive basis. The Internal Revenue Service 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 very generally can 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. We intend to treat the securities for U.S. federal income tax purposes in accordance with the treatment described in this document unless and until such time as the U.S. Treasury Department and Internal Revenue Service determine that some other treatment is more appropriate.

**Backup Withholding and Information Reporting.** Please see the discussion under “Tax Consequences — United States Taxation — Information Reporting and Backup Withholding” in the accompanying prospectus for a description of the applicability of the backup withholding and information reporting rules to payments made on the securities.

**Non-U.S. Holders.** The following discussion applies to non-U.S. holders of the securities. A non-U.S. holder is a beneficial owner of a security 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 described 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 securities, 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, exchange or maturity of the securities. 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.

Under Section 871(m) of the Code, a “dividend equivalent” payment is treated as a dividend from sources within the United States. 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 Department 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, the Internal Revenue Service has issued guidance that states that the U.S. Treasury Department and the Internal Revenue Service intend to amend the effective dates of the U.S. Treasury Department regulations to provide 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, 2021. Based on our

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determination that the securities are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the securities. However, it is possible that the securities could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the Index or the securities (for example, upon an Index rebalancing), and following such occurrence the securities 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 Index or its components should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the securities and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable withholding 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 securities 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 on the securities to become subject to withholding tax, we will withhold tax at the applicable statutory rate. The Internal Revenue Service has also indicated that it is considering whether income in respect of instruments such as the securities 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.

Foreign Account Tax Compliance Act. The Foreign Account Tax Compliance Act ("FATCA") will impose a 30% U.S. withholding tax on certain U.S.-source payments, including interest (and Original Issue Discount), dividends, other fixed or determinable annual or periodical gain, profits, and income, and on the gross proceeds from a disposition of property of a type which can produce U.S.-source interest or dividends (Withholdable Payments), if paid to a foreign financial institution (including amounts paid to a foreign financial institution on behalf of a holder), unless such institution enters into an agreement with the U.S. Treasury Department to collect and provide to the U.S. Treasury Department certain information regarding U.S. financial account holders, including certain account holders that are foreign entities with U.S. owners, with such institution or otherwise complies with FATCA. In addition, the securities may constitute a "financial account" for these purposes and thus, be subject to information reporting requirements pursuant to FATCA. FATCA also generally imposes a withholding tax of 30% on Withholdable Payments made to a non-financial foreign entity unless such entity provides the withholding agent with a certification that it does not have any substantial U.S. owners or a certification identifying the direct and indirect substantial U.S. owners of the entity. Under certain circumstances, a holder may be eligible for refunds or credits of such taxes.

The U.S. Treasury Department and the Internal Revenue Service have announced that withholding on payments of gross proceeds from a sale or redemption of the securities will only apply to payments made after December 31, 2018. We will not pay any additional amounts in respect of any FATCA withholding. Therefore, if such withholding applies, any payments on the securities will be significantly less than what you would have otherwise received. Foreign financial institutions and non-financial foreign entities located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules. Prospective investors are urged to consult with their own tax advisors regarding the possible implications of FATCA on their investment in the securities.

#### USE OF PROCEEDS AND HEDGING

The net proceeds from the sale of the securities will be used as described under “Use of Proceeds” in the accompanying prospectus supplement and prospectus and to hedge market risks of Royal Bank of Canada associated with its obligation to pay the maturity payment amount at maturity of the securities.

The initial public offering price of the securities includes the underwriting discount and commission, as well as hedging and other costs associated with the securities. Our hedging costs include the projected profit that our hedge counterparty expects to realize in consideration for assuming the risks inherent in hedging our obligations under the securities. We expect to hedge our obligations under the securities through an affiliate of Wells Fargo Securities, LLC and/or one or more of our affiliates. Because hedging our obligations entails risk and may be influenced by market forces beyond our or our counterparties’ control, this hedging may result in a profit that is more or less than expected, or could result in a loss.

We have no obligation to engage in any manner of hedging activity and will do so solely at our discretion and for our own account. No holder of the securities will have any rights or interest in our hedging activity or any positions we or any counterparty may take in connection with our hedging activity.

The hedging activity discussed above and other trading activities that we, Wells Fargo Securities, LLC and our respective affiliates may engage in may adversely affect the level of the Index, the market value of the securities from time to time and the maturity payment amount you will receive on the securities at maturity. See “Risk Factors — Hedging transactions may affect the return on the securities” and “— Potential conflicts of interest could arise” for a discussion of these adverse effects.

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#### SUPPLEMENTAL PLAN OF DISTRIBUTION

The securities are being purchased by Wells Fargo Securities, LLC (the agent) as principal, pursuant to a distribution agreement between the agent and us. The agent has agreed to pay certain of our out-of-pocket expenses of the issue of the securities.

From time to time, the agent and its affiliates have engaged, and in the future may engage, in transactions with and performance of services for us for which they have been, and may be, paid customary fees. In particular, an affiliate of the agent will be our swap counterparty for a hedge relating to our obligations under the securities.

In the future, the agent and its affiliates may purchase and resell the offered securities in market-making transactions, with resales being made at prices related to prevailing market prices at the time of resale or otherwise. Wells Fargo Securities, LLC may act as principal or agent in such transactions.

The agent has committed to purchase all of these securities in the initial public offering of the securities if any are purchased.

The agent proposes to offer the securities in part directly to the public at the public offering price set forth on the cover page of this pricing supplement and in part to WFA and Wells Fargo Advisors Financial Network, LLC or certain securities dealers at such price less a selling concession of \$25.00 per security. In addition to the selling concession allowed to WFA, the agent will pay \$1.20 per security of the underwriting discount and commission to WFA as a distribution expense fee for each security sold by WFA.

After the initial public offering of the securities is completed, the public offering price and concessions may be changed by the agent.

Proceeds to be received by Royal Bank of Canada in this offering will be net of the underwriting discount, commission and expenses payable by Royal Bank of Canada.

The securities are new issues of securities with no established trading markets. We have been advised by the agent that the agent intends to make a market in the securities. However the agent is not obligated to do so and may discontinue market making at any time without notice. No assurance can be given as to the liquidity of the trading market for the securities.

Any price that the agent makes available from time to time after the original issue date at which it would be willing to purchase the securities will generally reflect the agent's estimate of their value, less a customary bid-ask spread for similar trades and the cost of unwinding any related hedge transactions. That estimated value will be based upon a variety of factors, including then prevailing market conditions and our creditworthiness. However, for a period of five months after the original issue date, the price at which the agent may purchase the securities is expected to be higher than the price that would be determined based on the agent's valuation at that time less the bid-ask spread and hedging unwind costs referenced above. This is because, at the beginning of this period, that price will not include certain costs that were included in the initial public offering price, particularly a portion of the underwriting discount and commission (not including the selling concession) and the expected profits of our hedging counterparty(ies). As the period continues, these costs are expected to be gradually included in the price that the agent would be willing to pay, and the difference between that price and the price that would be determined based on the agent's valuation of the securities less a bid-ask spread and hedging unwind costs will decrease over time until the end of this period. After this period, if the agent continues to make a market in the securities, the prices that it would pay for them are expected to reflect the agent's estimated value, less the bid-ask spread and hedging unwind costs referenced above. In addition, the value of the securities shown on your account statement will generally reflect the price that the agent would be willing to pay to purchase the securities at that time.

Our broker-dealer subsidiary, RBC Capital Markets, LLC (RBCCM), does not expect to make a market in the securities. If RBCCM determines that the agent is unable or unwilling to make a market in the securities at any time, RBCCM may, but is not obligated to, make a market in the securities at that time. If RBCCM makes a market in the securities at any time, its valuation of the securities may differ from the agent's valuation, and consequently the price at

which it may be willing to purchase the securities may differ from (and be lower than) the price at which the agent would have purchased the securities at that time.

Royal Bank of Canada has agreed to indemnify the agent against certain liabilities, including liabilities under the Securities Act of 1933.

No action has been or will be taken by Royal Bank of Canada, the agent or any broker-dealer affiliates of either Royal Bank of Canada or the agent that would permit a public offering of the securities or possession or distribution of this pricing supplement or the accompanying prospectus and prospectus supplement in any jurisdiction, other than the United States, where action for that purpose is required. No offers, sales or deliveries of the securities, or distribution of this pricing supplement or the accompanying prospectus supplement and prospectus, may be made in or from any jurisdiction except in circumstances which will result in compliance with any applicable laws and regulations and will not impose any obligations on Royal Bank of Canada, the agent or any broker-dealer affiliates of either Royal Bank of Canada or the agent.

#### Selling Restrictions

##### Argentina

Royal Bank of Canada U.S. Medium-Term Notes program and the related offer of securities and the sale of securities under the terms and conditions provided herein does not constitute a public offering in Argentina. Consequently, no public offering approval has been requested or granted by the Comisión Nacional de Valores, nor has any listing authorization of the securities been requested on any stock market in Argentina.

##### Brazil

The securities may not be offered or sold to the public in Brazil. Accordingly, this pricing supplement and the accompanying prospectus supplement and prospectus have not been submitted to the Comissão de Valores Mobiliários for approval. Documents relating to this offering may not be supplied to the public as a public offering in Brazil or be used in connection with any offer for subscription or sale to the public in Brazil.

##### Chile

The securities have not been registered with the Superintendencia de Valores y Seguros in Chile and may not be offered or sold publicly in Chile. No offer, sales or deliveries of the securities, or distribution of this pricing supplement or the accompanying prospectus supplement and prospectus, may be made in or from Chile except in circumstances that will result in compliance with any applicable Chilean laws and regulations.

##### China

This pricing supplement and the accompanying prospectus supplement and prospectus have not been filed with or approved by the People's Republic of China (for such purposes, not including Hong Kong and Macau Special Administrative Regions or Taiwan) authorities, and is not an offer of securities (whether public offering or private placement) within the meaning of the Securities Law or other pertinent laws and regulations of the People's Republic of China. These documents shall not be delivered to any party who is not an intended recipient or offered to the general public if used within the People's Republic of China, and the securities so offered cannot be sold to anyone that is not a qualified purchaser of the People's Republic of China. Each dealer has represented, warranted and agreed that the notes are not being offered or sold and may not be offered or sold, directly or indirectly, in the People's Republic of China, except under circumstances that will result in compliance with applicable laws and regulations.

##### European Union

No Prospectus (as defined in Directive 2003/71/EC (as amended, the "Prospectus Directive")) will be prepared in connection with these securities. Accordingly, these securities may not be offered to the public in any member state of the European Economic Area (the "EEA"), and any purchaser of these securities who subsequently sells any of these securities in any EEA member state must do so only in accordance with the requirements of the Prospectus Directive, as implemented in that member state.



The securities 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. 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 securities to be offered so as to enable an investor to decide to purchase or subscribe the securities, and a “retail investor” means a person who is one (or more) of: (a) a retail client, as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, “MiFID II”); or (b) a customer, within the meaning of Insurance Distribution Directive 2016/97/EU, 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 (c) not a qualified investor as defined in the Prospectus Directive. Consequently, no key information document required by Regulation (EU) No 1286/2014 (as amended, the “PRIIPs Regulation”) for offering or selling the securities or otherwise making them available to retail investors in the EEA has been prepared, and therefore, offering or selling the securities or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

#### Mexico

The securities have not been registered with the National Registry of Securities maintained by the Mexican National Banking and Securities Commission and may not be offered or sold publicly in Mexico. This pricing supplement and the accompanying prospectus supplement and prospectus may not be publicly distributed in Mexico.

#### Paraguay

This is a private and personal offering. The securities offered have not been approved by or registered with the National Securities Commission (Comisión Nacional de Valores) and are not part of a public offering as defined by the Paraguayan Securities Law. The information contained herein is for informational and marketing purposes only and should not be taken as an investment advice.

#### Peru

The securities have not been and will not be registered with the Capital Markets Public Registry of the Capital Markets Superintendence (SMV) nor the Lima Stock Exchange Registry (RBVL) for their public offering in Peru under the Peruvian Capital Markets Law (Law N°861/ Supreme Decree N°093-2002) and the decrees and regulations thereunder.

Consequently, the securities may not be offered or sold, directly or indirectly, nor may this pricing supplement, the accompanying supplements or any other offering material relating to the securities be distributed or caused to be distributed in Peru to the general public. The securities may only be offered in a private offering without using mass marketing, which is defined as a marketing strategy utilising mass distribution and mass media to offer, negotiate or distribute securities to the whole market. Mass media includes newspapers, magazines, radio, television, mail, meetings, social networks, Internet servers located in Peru, and other media or technology platforms.

#### Uruguay

The sale of the securities qualifies as a private placement pursuant to section 2 of Uruguayan law 18,627. The securities must not be offered or sold to the public in Uruguay, except in circumstances which do not constitute a public offering or distribution under Uruguayan laws and regulations. The securities are not and will not be registered with the Financial Services Superintendency of the Central Bank of Uruguay.

#### Taiwan

The securities may be made available outside Taiwan for purchase by Taiwan residents outside Taiwan but may not be offered or sold in Taiwan.

### Structuring the Securities

The securities are our debt securities. As is the case for all of our debt securities, including our structured notes, the economic terms of the securities reflect our actual or perceived creditworthiness. In addition, because structured notes result in increased operational, funding and liability management costs to us, we typically borrow the funds under these securities at a rate that is more favorable to us than the rate that we might pay for a conventional fixed or floating rate debt security of comparable maturity. This relatively lower implied borrowing rate, which is reflected in the economic terms of the securities, along with the underwriting discount and commission and hedging and other costs associated with the securities, typically reduces the initial estimated value of the securities at the time their terms are set.

In order to satisfy our payment obligations under the securities, we may choose to enter into certain hedging arrangements (which may include call options, put options or other derivatives) with an affiliate of the agent and/or one of our subsidiaries. The terms of these hedging arrangements take into account a number of factors, including our creditworthiness, interest rate movements, and the tenor of the securities. The economic terms of the securities and their initial estimated value depend in part on the terms of these hedging arrangements. Our cost of hedging will include the projected profit that such counterparties expect to realize in consideration for assuming the risks inherent in hedging our obligations under the securities. Because hedging our obligations entails risks and may be influenced by market forces beyond the counterparties' control, such hedging may result in a profit that is more or less than expected, or could result in a loss. See "Use of Proceeds and Hedging" on page PS-30.

The lower implied borrowing rate, the underwriting discount and commission and hedging and other costs associated with the securities reduce the economic terms of the securities to you and result in the initial estimated value for the securities on the pricing date being less than their initial public offering price. See "Risk Factors—Our initial estimated value of the securities will be less than the initial public offering price" above.

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