

ROYAL BANK OF CANADA  
Form 424B2  
February 15, 2018

RBC Capital Markets® Filed Pursuant to Rule 424(b)(2)  
Registration Statement No. 333-208507

## Pricing Supplement

Dated February 12, 2018

To the Product

Prospectus Supplement \$3,581,000 Auto-Callable Barrier Notes  
No. ERN-EI-1, Dated Linked to the Lesser Performing of Two  
January 12, 2016, the Equity Indices, Due February 16, 2023  
Prospectus Supplement Royal Bank of Canada  
Dated January 8, 2016,  
and the Prospectus Dated  
January 8, 2016

Royal Bank of Canada is offering Auto-Callable Barrier Notes (the “Notes”) linked to the lesser performing of two equity indices (each, a “Reference Index” and collectively, the “Reference Indices”). The Notes offered are senior unsecured obligations of Royal Bank of Canada and under the circumstances specified below, and will have the terms described in the documents described above, as supplemented or modified by this pricing supplement. We will not make any payments on the Notes until the maturity date or a prior automatic call.

The Notes will be automatically called at the applicable Call Amount if the closing level of each Reference Index is greater than or equal to its Initial Level on any quarterly Observation Date on or after August 13, 2018. The Call Amounts are based on a rate of return of 9.15% per annum, and will increase on each quarterly Observation Date to reflect that rate of return. If the Notes are not called, you may lose all or a substantial portion of your principal amount.

Reference Indices	Initial Levels*	Barrier Levels*
Dow Jones Industrial Average® (“INDU”)	24,601.27	15,990.83, which is 65.00% of its Initial Level
EURO STOXX 50® Index (“SX5E”)	3,368.25	2,189.36, which is 65.00% of its Initial Level

\* Rounded to two decimal places.

The Notes do not guarantee any return of principal at maturity. Any payments on the Notes are subject to our credit risk.

Investing in the Notes involves a number of risks. See “Additional Risk Factors Specific to the Notes” beginning on page PS-5 of the product prospectus supplement dated January 12, 2016, “Risk Factors” beginning on page S-1 of the prospectus supplement dated January 8, 2016, and “Selected Risk Considerations” beginning on page P-7 of this pricing supplement.

The Notes will not constitute deposits insured by the Canada Deposit Insurance Corporation, the U.S. Federal Deposit Insurance Corporation or any other Canadian or U.S. government agency or instrumentality.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the Notes or determined that this pricing supplement is truthful or complete. Any representation to the contrary is a criminal offense.

Issuer:	Royal Bank of Canada	Stock Exchange Listing:	None
Pricing Date:	February 12, 2018	Principal Amount:	\$1,000 per Note
Issue Date:	February 15, 2018	Maturity Date:	February 16, 2023

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Valuation Date: February 13, 2023 (which is the final Observation Date)

Initial Level: For each Reference Index, its closing level on the pricing date, as specified above.

Final Level: For each Reference Index, its closing level on the Valuation Date.

Call Feature: If the closing level of each Reference Index is greater than or equal to its Initial Level starting on August 13, 2018 or on any Observation Date thereafter, the Notes will be called and we will pay the applicable Call Amount on the corresponding Call Settlement Date.

Observation Dates and Call Settlement Dates: Quarterly, beginning on August 13, 2018, as set forth below.

Payment at Maturity (if held to maturity): If the Notes are not called on any Observation Date (including the Valuation Date), we will pay you at maturity an amount based on the Final Level of the Lesser Performing Reference Index: For each \$1,000 in principal amount, \$1,000, unless the Final Level of the Lesser Performing Reference Index is less than its Barrier Level. If the Final Level of the Lesser Performing Reference Index is less than its Barrier Level, then the investor will receive at maturity, for each \$1,000 in principal amount, a cash payment equal to:  
 $\$1,000 + (\$1,000 \times \text{Percentage Change of the Lesser Performing Reference Index})$   
 Investors could lose some or all of the value of their initial investment if there has been a decline in the level of Lesser Performing Reference Index.

Lesser Performing Reference Index: The Reference Index with the lowest Percentage Change.

CUSIP: 78013XDD7

	Per Note	Total
Price to public <sup>(1)</sup>	100.00%	\$3,581,000.00
Underwriting discounts and commissions <sup>(1)</sup>	3.00%	\$107,430.00
Proceeds to Royal Bank of Canada	97.00%	\$3,473,570.00

<sup>(1)</sup>Certain dealers who purchase the Notes for sale to certain fee-based advisory accounts may forego some or all of their underwriting discount or selling concessions. The public offering price for investors purchasing the Notes in these accounts may be between \$970.00 and \$1,000 per \$1,000 in principal amount.

The initial estimated value of the Notes as of the date of this pricing supplement is \$907.81 per \$1,000 in principal amount, which is less than the price to public. The actual value of the Notes at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount. We describe our determination of the initial estimated value in more detail below.

RBC Capital Markets, LLC, which we refer to as RBCCM, acting as agent for Royal Bank of Canada, received a commission of \$30.00 per \$1,000 in principal amount of the Notes and used a portion of that commission to allow selling concessions to other dealers of up to \$30.00 per \$1,000 in principal amount of the Notes. The other dealers may forgo, in their sole discretion, some or all of their selling concessions. See “Supplemental Plan of Distribution (Conflicts of Interest)” on page P-16 below.

RBC Capital Markets, LLC

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Auto-Callable Barrier Notes  
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 Equity Indices, Due February 16, 2023  
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**SUMMARY**

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

**General:** This pricing supplement relates to an offering of Auto-Callable Barrier Notes (the “Notes”) linked to the lesser performing of two equity indices (the “Reference Indices”).

**Issuer:** Royal Bank of Canada (“Royal Bank”)

**Issue:** Senior Global Medium-Term Notes, Series G

**Pricing Date:** February 12, 2018

**Issue Date:** February 15, 2018

**Term:** Approximately five (5) years, if not previously called

**Denominations:** Minimum denomination of \$1,000, and integral multiples of \$1,000 thereafter.

**Designated Currency:** U.S. Dollars

**Call Feature:** If, starting on August 13, 2018 or any Observation Date thereafter, the closing level of each Reference Index is greater than or equal to its Initial Level, then the Notes will be automatically called and the applicable Call Amount will be paid on the corresponding Call Settlement Date.

	Observation Date	Call Settlement Date	Call Amount
Observation Dates/Call Settlement Dates/Call Amounts:	August 13, 2018	August 16, 2018	\$1,045.75
	November 12, 2018	November 15, 2018	\$1,068.625
	February 12, 2019	February 15, 2019	\$1,091.50
	May 13, 2019	May 16, 2019	\$1,114.375
	August 12, 2019	August 15, 2019	\$1,137.25
	November 12, 2019	November 15, 2019	\$1,160.125
	February 12, 2020	February 18, 2020	\$1,183.00
	May 12, 2020	May 15, 2020	\$1,205.875
	August 12, 2020	August 17, 2020	\$1,228.75
	November 12, 2020	November 17, 2020	\$1,251.625
	February 12, 2021	February 18, 2021	\$1,274.50
	May 12, 2021	May 17, 2021	\$1,297.375
	August 12, 2021	August 17, 2021	\$1,320.25
	November 12, 2021	November 17, 2021	\$1,343.125
	February 14, 2022	February 17, 2022	\$1,366.00
	May 12, 2022	May 17, 2022	\$1,388.875
	August 12, 2022	August 17, 2022	\$1,411.75
November 14, 2022	November 17, 2022	\$1,434.625	
February 13, 2023 (the “Valuation Date”)	February 16, 2023 (the “Maturity Date”)	\$1,457.50	

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The Call Amounts correspond to a return of 9.15% per annum on the Notes, if they are called. Accordingly, you will not receive any return on the Notes that exceeds the applicable amount set forth above, even if the level of one or both of the Reference Indices increases substantially.

Valuation Date: February 13, 2023

Maturity Date: February 16, 2023

Initial Level: For each Reference Index, its closing level on the pricing date, as specified on the cover page of this pricing supplement.

Final Level: For each Reference Index, its closing level on the Valuation Date.

Barrier Level: For each Reference Index, 65.00% of its Initial Level, as specified on the cover page of this pricing supplement.

Payment at

Maturity (if not previously called and

If the Notes are not called on any Observation Date (including the Valuation Date), we will pay you at maturity an amount based on the Final Level of the Lesser Performing Reference Index:

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held to maturity):	<ul style="list-style-type: none"> <li>· If the Final Level of the Lesser Performing Reference Index is greater than or equal to its Barrier Level, we will pay you a cash payment equal to the principal amount.</li> <li>· If the Final Level of the Lesser Performing Reference Index is below its Barrier Level, you will receive at maturity, for each \$1,000 in principal amount, a cash payment equal to: \$1,000 + (\$1,000 x Percentage Change of the Lesser Performing Reference Index)</li> </ul> <p>The amount of cash that you receive will be less than your principal amount, if anything, resulting in a loss that is proportionate to the decline of the Lesser Performing Reference Index from the pricing date to the Valuation Date. Investors in the Notes could lose some or all of their investment if there has been a decline in the level of the Lesser Performing Reference Index below its Barrier Level.</p>
Percentage Change:	<p>With respect to each Reference Index:  <math display="block">\frac{\text{Final Level} - \text{Initial Level}}{\text{Initial Level}}</math></p>
Lesser Performing Reference Index:	The Reference Index with the lowest Percentage Change.
Market Disruption Events: Calculation Agent:	<p>The occurrence of a market disruption event (or a non-trading day) as to either of the Reference Indices will result in the postponement of an Observation Date or the Valuation Date as to that Reference Index, as described in the product prospectus supplement, but not to any non-affected Reference Index.</p> <p>RBC Capital Markets, LLC (“RBCCM”)</p> <p>By purchasing a Note, each holder agrees (in the absence of a change in law, an administrative determination or a judicial ruling to the contrary) to treat the Note as a callable pre-paid cash-settled derivative contract linked to the Reference Indices for U.S. federal income tax purposes. However, the U.S. federal income tax consequences of your investment in the Notes are uncertain and the Internal Revenue Service could assert that the Notes should be taxed in a manner that is different from that described in the preceding sentence. Please see the section below, “Supplemental Discussion of U.S. Federal Income Tax Consequences,” and the discussion (including the opinion of our counsel Morrison &amp; Foerster LLP) in the product prospectus supplement dated January 12, 2016 under “Supplemental Discussion of U.S. Federal Income Tax Consequences,” which apply to the Notes.</p>
U.S. Tax Treatment:	<p>RBCCM (or one of its affiliates), though not obligated to do so, may maintain a secondary market in the Notes after the Issue Date. The amount that you may receive upon sale of your Notes prior to maturity may be less than the principal amount.</p>
Secondary Market:	<p>The Notes will not be listed on any securities exchange.</p>
Listing:	<p>DTC global (including through its indirect participants Euroclear and Clearstream, Luxembourg as described under “Description of Debt Securities—Ownership and Book-Entry Issuance” in the prospectus dated January 8, 2016).</p>
Settlement:	
Terms Incorporated in the Master Note:	<p>All of the terms appearing above the item captioned “Secondary Market” on the cover page and pages P-2 and P-3 of this pricing supplement and the terms appearing under the caption “General Terms of the Notes” in the product prospectus supplement dated January 12, 2016, as modified by this pricing supplement.</p>



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#### ADDITIONAL TERMS OF YOUR NOTES

You should read this pricing supplement together with the prospectus dated January 8, 2016, as supplemented by the prospectus supplement dated January 8, 2016 and the product prospectus supplement dated January 12, 2016, relating to our Senior Global Medium-Term Notes, Series G, of which these Notes are a part. Capitalized terms used but not defined in this pricing supplement will have the meanings given to them in the product prospectus supplement. In the event of any conflict, this pricing supplement will control. The Notes vary from the terms described in the product prospectus supplement in several important ways. You should read this pricing supplement carefully.

This pricing supplement, together with the documents listed below, contains the terms of the Notes and supersedes all prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours. You should carefully consider, among other things, the matters set forth in “Risk Factors” in the prospectus supplement dated January 8, 2016 and “Additional Risk Factors Specific to the Notes” in the product prospectus supplement dated January 12, 2016, as the Notes involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisors before you invest in the Notes. You may access these documents on the Securities and Exchange Commission (the “SEC”) website at [www.sec.gov](http://www.sec.gov) as follows (or if that address has changed, by reviewing our filings for the relevant date on the SEC website):

Prospectus dated January 8, 2016:

<http://www.sec.gov/Archives/edgar/data/1000275/000121465916008810/j18160424b3.htm>

Prospectus Supplement dated January 8, 2016:

<http://www.sec.gov/Archives/edgar/data/1000275/000121465916008811/p14150424b3.htm>

Product Prospectus Supplement dated January 12, 2016:

<https://www.sec.gov/Archives/edgar/data/1000275/000114036116047560/form424b5.htm>

Our Central Index Key, or CIK, on the SEC website is 1000275. As used in this pricing supplement, “we,” “us,” or “our” refers to Royal Bank of Canada.

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#### HYPOTHETICAL EXAMPLES

The table set out below is included for illustration purposes only. The table illustrates payment upon an automatic call and the Payment at Maturity of the Notes for a hypothetical range of performance for the Lesser Performing Reference Index, assuming the following terms:

Hypothetical Initial Level (for each Reference Index): 1,000.00\*

Hypothetical Barrier Level (for each Reference Index): 650.00, which is 65.00% of the hypothetical Initial Level

Principal Amount: \$1,000 per Note

Call Amounts: As set forth on page P-2

\* The hypothetical Initial Level of 1,000.00 used in the examples below has been chosen for illustrative purposes only and does not represent the actual Initial Level of any Reference Index. The actual Initial Levels for each Reference Index are set forth on the cover page of this pricing supplement. We make no representation or warranty as to which of the Reference Indices will be the Lesser Performing Reference Index. It is possible that the Final Level of each Reference Index will be less than its Initial Level.

#### Summary of the Hypothetical Examples

	Notes Are Called on an Observation Date						Notes Are Not Called on Any Observation Date			
	Example 1		Example 2		Example 3		Example 4		Example 5	
	INDU	SX5E	INDU	SX5E	INDU	SX5E	INDU	SX5E	INDU	SX5E
Initial Level	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Closing Level on the First Observation Date	1,200.00	1,250.00	1,100.00	950.00	900.00	1,050.00	880.00	805.00	980.00	805.00
Closing Level on the Second Observation Date	N/A	N/A	1,020.00	1,025.00	850.00	1,200.00	780.00	900.00	780.00	1,100.00
Closing Levels on the Third through 18 <sup>th</sup> Observation Dates	N/A	N/A	N/A	N/A	Various, below Initial Levels	Various, below Initial Levels	Various, below Initial Levels	Various, below Initial Levels	Various, below Initial Levels	Various, below Initial Levels
Closing Level on the Final Observation Date	N/A	N/A	N/A	N/A	1,035.00	1,500.00	850.00	1,200.00	600.00	1,120.00
	N/A	N/A	N/A	N/A	N/A	N/A	-15.00%	20.00%	-40.00%	12.00%



Percentage  
Change of the  
Reference  
Indices

Percentage  
Change of the  
Lesser  
Performing  
Reference  
Index

Call Amount

Payment at  
Maturity (if  
not  
previously  
called)

N/A

N/A

N/A

-15.00%

-40.00%

\$1,045.75

\$1,068.625

\$1,457.50 (paid on  
the maturity date)

N/A

N/A

N/A

N/A

N/A

N/A

\$1,000

\$600

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Hypothetical Examples of Amounts Payable Upon an Automatic Call

The following hypothetical examples illustrate payments of the Call Amounts set forth in the table on page P-2.

Example 1: The level of the Lesser Performing Reference Index increases by 25% from the Initial Level of 1,000.00 to a closing level of 1,250.00 on the first Observation Date. Because the closing level of the Lesser Performing Reference Index on the first Observation Date is greater than its Initial Level of 1,000.00, the investor receives on the applicable Call Settlement Date a cash payment of \$1,045.75, representing the corresponding Call Amount. After the Notes are called, they will no longer remain outstanding and there will be no further payments on the Notes.

Example 2: The level of the Lesser Performing Reference Index decreases by 10% from the Initial Level of 1,000.00 to its closing level on the first Observation Date of 900 but the level of the Lesser Performing Reference Index increases by 10% from the Initial Level of 1,000.00 to a closing level of 1,100.00 on the second Observation Date. Because the Notes are not called on the first Observation Date and the closing level of the Lesser Performing Reference Index on the second Observation Date is greater than its Initial Level of 1,000.00, the investor receives on the applicable Call Settlement Date a cash payment of \$1,068.625, representing the corresponding Call Amount. After the Notes are called, they will no longer remain outstanding and there will be no further payments on the Notes.

Example 3: The Notes are not called on any of the Observation Dates and the Final Level of the Lesser Performing Reference Index is 1,200.00 on the Valuation Date, which is greater than its Initial Level of 1,000.00. Because the Notes are not called on any of the Observation Dates and the closing level of the Lesser Performing Reference Index on the Valuation Date is greater than its Initial Level of 1,000.00, the investor receives on the Maturity Date a cash payment of \$1,457.50, representing the corresponding Call Amount.

Hypothetical Examples of Amounts Payable at Maturity

The following hypothetical examples illustrate how the payments at maturity set forth in the table above are calculated, assuming the Notes have not been called.

Example 1: The level of the Lesser Performing Reference Index decreases by 15% from the Initial Level of 1,000.00 to its Final Level of 850.00. The Notes are not called on any Observation Date because the closing level of at least one Reference Index is below its Initial Level on each Observation Date (including the Valuation Date). Because the Final Level of the Lesser Performing Reference Index is less than its Initial Level of 1,000 but greater than its Barrier Level of 650.00, the investor receives at maturity, a cash payment of \$1,000 per Note, despite the 15% decline in the level of the Lesser Performing Reference Index.

Example 2: The level of the Lesser Performing Reference Index is 600.00 on the Valuation Date, which is less than its Barrier Level of 650.00. The Notes are not called on any Observation Date because the closing level of at least one Reference Index is below its Initial Level on each Observation Date (including the Valuation Date). Because the Final Level of the Lesser Performing Reference Index is less than its Barrier Level of 650.00, we will pay only \$600.00 for each \$1,000 in the principal amount of the Notes, calculated as follows:

Principal Amount + (Principal Amount x Reference Index Return of the Lesser Performing Reference Index)  
= \$1,000 + (\$1,000 x -40.00%) = \$1,000 - \$400.00 = \$600.00

\* \* \*

The payments at maturity shown above are entirely hypothetical; they are based on levels of the Reference Indices that may not be achieved and on assumptions that may prove to be erroneous. The actual market value of your Notes on the Maturity Date or at any other time, including any time you may wish to sell your Notes, may bear little relation to the hypothetical payments at maturity shown above, and those amounts should not be viewed as an indication of the financial return on an investment in the Notes or on an investment in the securities included in any Reference Index.



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#### SELECTED RISK CONSIDERATIONS

An investment in the Notes involves significant risks. Investing in the Notes is not equivalent to investing directly in the Reference Indices. These risks are explained in more detail in the section “Additional Risk Factors Specific to the Notes” in the product prospectus supplement. In addition to the risks described in the prospectus supplement and the product prospectus supplement, you should consider the following:

**Principal at Risk** — Investors in the Notes could lose all or a substantial portion of their principal amount if there is a decline in the level of the Lesser Performing Reference Index between the pricing date and the Valuation Date. If the Notes are not automatically called and the Final Level of the Lesser Performing Reference Index on the Valuation Date is less than its Barrier Level, the amount of cash that you receive at maturity will represent a loss of your principal that is proportionate to the decline in the closing level of the Lesser Performing Reference Index from the pricing date to the Valuation Date.

**The Notes Are Subject to an Automatic Call** — If, starting on August 13, 2018 and on any Observation Date thereafter, the closing level of each Reference Index is greater than or equal to its Initial Level, then the Notes will be automatically called. If the Notes are automatically called, then, on the applicable Call Settlement Date, for each \$1,000 in principal amount, you will receive the applicable Call Amount on the corresponding Call Settlement Date. You will not receive any payments after the Call Settlement Date and you will not receive any return on the Notes that exceeds the applicable Call Amount provided on page P-2, even if the level of one or both of the Reference Indices increases substantially. You may be unable to reinvest your proceeds from the automatic call in an investment with a return that is as high as the return on the Notes.

**The Notes Do Not Pay Interest and Your Return May Be Lower than the Return on a Conventional Debt Security of Comparable Maturity** – There will be no periodic interest payments on the Notes as there would be on a conventional fixed-rate or floating-rate debt security having the same maturity. The return that you will receive on the Notes, which could be negative, may be less than the return you could earn on other investments. Your return may be less than the return you would earn if you bought a conventional senior interest bearing debt security of Royal Bank.

**The Notes Are Linked to the Lesser Performing Reference Index, Even if the Other Reference Index Performs Better** — If either of the Reference Indices has a Final Level that is less than its Initial Level or its Barrier Level, your return will be linked to the lesser performing of the two Reference Indices. Even if the Final Level of the other Reference Index has increased compared to its Initial Level, or has experienced a decrease that is less than that of the Lesser Performing Reference Index, your return will only be determined by reference to the performance of the Lesser Performing Reference Index, regardless of the performance of the other Reference Index.

**Your Payment on the Notes Will Be Determined by Reference to Each Reference Index Individually, Not to a Basket, and the Payment at Maturity Will Be Based on the Performance of the Lesser Performing Reference Index** — The Payment at Maturity will be determined only by reference to the performance of the Lesser Performing Reference Index, regardless of the performance of the other Reference Index. The Notes are not linked to a weighted basket, in which the risk may be mitigated and diversified among each of the basket components. For example, in the case of notes linked to a weighted basket, the return would depend on the weighted aggregate performance of the basket components reflected as the basket return. As a result, the depreciation of one basket component could be mitigated by the appreciation of the other basket component, as scaled by the weighting of that basket component. However, in the case of the Notes, the individual performance of each of the Reference Indices would not be combined, and the depreciation of one Reference Index would not be mitigated by any appreciation of the other Reference Index. Instead, your return will depend solely on the Final Level of the Lesser Performing Reference Index.

**Payments on the Notes Are Subject to Our Credit Risk, and Changes in Our Credit Ratings Are Expected to Affect the Market Value of the Notes** — The Notes are Royal Bank’s senior unsecured debt securities. As a result, your receipt

of any Call Amounts, if payable, and the amount due on the maturity date is dependent upon Royal Bank's ability to repay its obligations on the applicable payment date. This will be the case even if the levels of the Reference Indices increase after the pricing date. No assurance can be given as to what our financial condition will be at any time during the term of the Notes.

**There May Not Be an Active Trading Market for the Notes-Sales in the Secondary Market May Result in Significant Losses** — There may be little or no secondary market for the Notes. The Notes will not be listed on any securities exchange. RBCCM and other affiliates of Royal Bank may make a market for the Notes; however, they are not required to do so. RBCCM or any other affiliate of Royal Bank may stop any market-making activities at any time. Even if a secondary market for the Notes develops, it may not provide significant liquidity or trade at prices advantageous to you. We expect that transaction costs in any secondary market would be high. As a result, the difference between bid and asked prices for your Notes in any secondary market could be substantial.

**Owning the Notes Is Not the Same as Owning the Securities Represented by the Reference Indices** — The return on your Notes is unlikely to reflect the return you would realize if you actually owned the securities represented by the Reference Indices. For instance, you will not receive or be entitled to receive any dividend payments or other distributions on those

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securities during the term of your Notes. As an owner of the Notes, you will not have voting rights or any other rights that holders of the Reference Indices may have. Furthermore, the Reference Indices may appreciate substantially during the term of the Notes, while your potential return will be limited to the applicable Call Amounts.

**The Initial Estimated Value of the Notes Is Less than the Price to the Public** — The initial estimated value set forth on the cover page of this pricing supplement does not represent a minimum price at which we, RBCCM or any of our affiliates would be willing to purchase the Notes in any secondary market (if any exists) at any time. If you attempt to sell the Notes prior to maturity, their market value may be lower than the price you paid for them and the initial estimated value. This is due to, among other things, changes in the levels of the Reference Indices, the borrowing rate we pay to issue securities of this kind, and the inclusion in the price to the public of the underwriting discount and the estimated costs relating to our hedging of the Notes. These factors, together with various credit, market and economic factors over the term of the Notes, are expected to reduce the price at which you may be able to sell the Notes in any secondary market and will affect the value of the Notes in complex and unpredictable ways. Assuming no change in market conditions or any other relevant factors, the price, if any, at which you may be able to sell your Notes prior to maturity may be less than your original purchase price, as any such sale price would not be expected to include the underwriting discount and the hedging costs relating to the Notes. In addition to bid-ask spreads, the value of the Notes determined by RBCCM for any secondary market price is expected to be based on the secondary rate rather than the internal funding rate used to price the Notes and determine the initial estimated value. As a result, the secondary price will be less than if the internal funding rate was used. The Notes are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your Notes to maturity.

**The Initial Estimated Value of the Notes Is an Estimate Only, Calculated as of the Time the Terms of the Notes Were Set** — The initial estimated value of the Notes will be based on the value of our obligation to make the payments on the Notes, together with the mid-market value of the derivative embedded in the terms of the Notes. See “Structuring the Notes” below. Our estimate is based on a variety of assumptions, including our credit spreads, expectations as to dividends, interest rates and volatility, and the expected term of the Notes. These assumptions are based on certain forecasts about future events, which may prove to be incorrect. Other entities may value the Notes or similar securities at a price that is significantly different than we do.

The value of the Notes 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 Notes in any secondary market, if any, should be expected to differ materially from the initial estimated value of your Notes.

**Inconsistent Research** — Royal Bank or its affiliates may issue research reports on securities that are, or may become, components of the Reference Indices. We may also publish research from time to time on financial markets and other matters that may influence the levels of the Reference Indices or the value of the Notes, or express opinions or provide recommendations that may be inconsistent with purchasing or holding the Notes or with the investment view implicit in the Notes or the Reference Indices. You should make your own independent investigation of the merits of investing in the Notes and the Reference Indices.

**An Investment in the Notes Is Subject to Risks Relating to Non-U.S. Securities Markets** - Because foreign companies or foreign equity securities included in the SX5E are publicly traded in the applicable foreign countries and are denominated in currencies other than U.S. dollars, an investment in the securities involves particular risks. For example, the non-U.S. securities markets may be more volatile than the U.S. securities markets, and market developments may affect these markets differently from the U.S. or other securities markets. Direct or indirect government intervention to stabilize the securities markets outside the U.S., as well as cross-shareholdings in certain companies, may affect trading prices and trading volumes in those markets. Also, the public availability of information concerning the foreign issuers may vary depending on their home jurisdiction and the reporting

requirements imposed by their respective regulators. In addition, the foreign issuers may be subject to accounting, auditing and financial reporting standards and requirements that differ from those applicable to U.S. reporting companies.

The securities included in the SX5E are issued by companies located within the Eurozone, which is and has been undergoing severe financial stress, and the political, legal and regulatory ramifications are impossible to predict. Changes within the Eurozone could have a material adverse effect on the performance of the SX5E and, consequently, on the value of the Notes.

Market Disruption Events and Adjustments — The payment at maturity, each Observation Date and the Valuation Date are subject to adjustment as described in the product prospectus supplement. For a description of what constitutes a market disruption event as well as the consequences of that market disruption event, see “General Terms of the Notes—Market Disruption Events” in the product prospectus supplement.

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Auto-Callable Barrier Notes

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INFORMATION REGARDING THE REFERENCE INDICES

All disclosures contained in this pricing supplement regarding the Reference Indices, including, without limitation, their make-up, method of calculation, and changes in their components, have been derived from publicly available sources. The information reflects the policies of, and is subject to change by, the applicable index sponsor. Each of these sponsors has no obligation to continue to publish, and may discontinue publication of, the applicable Reference Index. The consequences of an index sponsor discontinuing publication of a Reference Index are discussed in the section of the product prospectus supplement entitled “General Terms of the Notes—Unavailability of the Level of the Reference Asset.” Neither we nor RBCCM accepts any responsibility for the calculation, maintenance or publication of any Reference Index or any successor index.

We obtained the information regarding the historical performance of each Reference Index set forth below from Bloomberg Financial Markets.

Dow Jones Industrial Average® (“INDU”)

The INDU is a price-weighted index, which means an underlying stock’s weight in the INDU is based on its price per share rather than the total market capitalization of the issuer. The INDU is designed to provide an indication of the composite performance of 30 common stocks of corporations representing a broad cross-section of U.S. industry. The corporations represented in the INDU tend to be market leaders in their respective industries and their stocks are typically widely held by individuals and institutional investors.

The INDU is maintained by an Averages Committee comprised of the Managing Editor of The Wall Street Journal (“WSJ”), the head of Dow Jones Indexes research and the head of CME Group Inc. research. The Averages Committee was created in March 2010, when Dow Jones Indexes became part of CME Group Index Services, LLC, a joint venture company owned 90% by CME Group Inc. and 10% by Dow Jones & Company. Generally, composition changes occur only after mergers, corporate acquisitions or other dramatic shifts in a component's core business. When such an event necessitates that one component be replaced, the entire INDU is reviewed. As a result, when changes are made they typically involve more than one component. While there are no rules for component selection, a stock typically is added only if it has an excellent reputation, demonstrates sustained growth, is of interest to a large number of investors and accurately represents the sector(s) covered by the average.

Changes in the composition of the INDU are made entirely by the Averages Committee without consultation with the corporations represented in the INDU, any stock exchange, any official agency or us. Unlike most other indices, which are reconstituted according to a fixed review schedule, constituents of the INDU are reviewed on an as-needed basis. Changes to the common stocks included in the INDU tend to be made infrequently, and the underlying stocks of the INDU may be changed at any time for any reason. The companies currently represented in the INDU are incorporated in the United States and its territories and their stocks are listed on the New York Stock Exchange and NASDAQ.

The INDU initially consisted of 12 common stocks and was first published in the WSJ in 1896. The INDU was increased to include 20 common stocks in 1916 and to 30 common stocks in 1928. The number of common stocks in the INDU has remained at 30 since 1928, and, in an effort to maintain continuity, the constituent corporations represented in the INDU have been changed on a relatively infrequent basis.

Computation of the INDU

The level of the INDU is the sum of the primary exchange prices of each of the 30 component stocks included in the INDU, divided by a divisor that is designed to provide a meaningful continuity in the level of the INDU. Because the INDU is price-weighted, stock splits or changes in the component stocks could result in distortions in the index level. In order to prevent these distortions related to extrinsic factors, the divisor is periodically changed in accordance with a mathematical formula that reflects adjusted proportions within the INDU. The current divisor of the INDU is published daily in the WSJ and other publications. In addition, other statistics based on the INDU may be found in a



variety of publicly available sources.

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License Agreement

S&P® is a registered trademark of Standard & Poor's Financial Services LLC ("S&P") and Dow Jones is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"). These trademarks have been licensed for use by S&P Dow Jones Indices LLC. "DJIA®" is a trademark of Dow Jones. The trademark has been sublicensed for certain purposes by us. The INDU is a product of S&P Dow Jones Indices LLC and/or its affiliates and has been licensed for use by us.

The Notes are not sponsored, endorsed, sold or promoted by S&P Dow Jones Indices LLC, Dow Jones, S&P or any of their respective affiliates (collectively, "S&P Dow Jones Indices"). S&P Dow Jones Indices make no representation or warranty, express or implied, to the holders of the Notes or any member of the public regarding the advisability of investing in securities generally or in the Notes particularly or the ability of the INDU to track general market performance. S&P Dow Jones Indices' only relationship to us with respect to the INDU is the licensing of the INDU and certain trademarks, service marks and/or trade names of S&P Dow Jones Indices and/or its third party licensors. The INDU is determined, composed and calculated by S&P Dow Jones Indices without regard to us or the Notes. S&P Dow Jones Indices have no obligation to take our needs or the needs of us or holders of the Notes into consideration in determining, composing or calculating the INDU. S&P Dow Jones Indices are not responsible for and have not participated in the determination of the prices, and amount of the Notes or the timing of the issuance or sale of the Notes or in the determination or calculation of the equation by which the Notes are to be converted into cash. S&P Dow Jones Indices have no obligation or liability in connection with the administration, marketing or trading of the Notes. There is no assurance that investment products based on the INDU will accurately track index performance or provide positive investment returns. S&P Dow Jones Indices LLC and its subsidiaries are not investment advisors. Inclusion of a security or futures contract within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security or futures contract, nor is it considered to be investment advice. Notwithstanding the foregoing, CME Group Inc. and its affiliates may independently issue and/or sponsor financial products unrelated to the Notes currently being issued by us, but which may be similar to and competitive with the Notes. In addition, CME Group Inc. and its affiliates may trade financial products which are linked to the performance of the INDU. It is possible that this trading activity will affect the value of the Notes.

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

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## Auto-Callable Barrier Notes

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## Historical Information

Below is a table setting forth the intra-day high, intra-day low and period-end closing levels of this Reference Index. The information provided in the table is for the period from January 1, 2012 through February 12, 2018.

Period-Start Date	Period-End Date	High Intra-Day Level of this Reference Index	Low Intra-Day Level of this Reference Index	Period-End Closing Level of this Reference Index
1/1/2012	3/31/2012	13,289.08	12,221.19	13,212.04
4/1/2012	6/30/2012	13,338.66	12,035.09	12,880.09
7/1/2012	9/30/2012	13,653.24	12,492.25	13,437.13
10/1/2012	12/31/2012	13,661.87	12,471.49	13,104.14
1/1/2013	3/31/2013	14,585.10	13,104.30	14,578.54
4/1/2013	6/30/2013	15,542.40	14,434.43	14,909.60
7/1/2013	9/30/2013	15,709.58	14,760.41	15,129.67
10/1/2013	12/31/2013	16,588.25	14,719.43	16,576.66
1/1/2014	3/31/2014	16,573.07	15,340.69	16,457.66
4/1/2014	6/30/2014	16,978.02	16,015.32	16,826.60
7/1/2014	9/30/2014	17,350.64	16,333.78	17,042.90
10/1/2014	12/31/2014	18,103.45	15,855.12	17,823.07
1/1/2015	3/31/2015	18,288.63	17,037.76	17,776.12
4/1/2015	6/30/2015	18,351.36	17,576.50	17,619.51
7/1/2015	9/30/2015	18,137.12	15,370.33	16,284.70
10/1/2015	12/31/2015	17,977.85	16,013.66	17,425.03
1/1/2016	3/31/2016	17,790.11	15,450.56	17,685.09
4/1/2016	6/30/2016	18,167.63	17,063.08	17,929.99
7/1/2016	9/30/2016	18,668.44	17,713.45	18,308.15
10/1/2016	12/31/2016	19,987.63	17,883.56	19,762.60
1/1/2017	3/31/2017	21,169.11	19,677.94	20,663.22
4/1/2017	6/30/2017	21,535.03	20,379.55	21,349.63
7/1/2017	9/30/2017	22,419.51	21,279.30	22,405.09
10/1/2017	12/31/2017	24,876.07	22,416.00	24,719.22
1/1/2018	2/12/2018	26,616.71	23,360.29	24,601.27

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

The graph below illustrates the performance of this Reference Index from January 1, 2012 to February 12, 2018 reflecting its Initial Level of 24,601.27. The red line represents the Barrier Level of 15,990.83, which is equal to 65.00% of the closing level on February 12, 2018, rounded to two decimal places.

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EURO STOXX 50<sup>®</sup> Index (“SX5E”)

The SX5E

The SX5E was created by STOXX, a subsidiary of Deutsche Börse AG. Publication of the SX5E began in February 1998, based on an initial index level of 1,000 at December 31, 1991.

Composition and Maintenance

The SX5E is composed of 50 component stocks of market sector leaders from within the 19 EURO STOXX<sup>®</sup> Supersector indices, which represent the Eurozone portion of the STOXX Europe 600<sup>®</sup> Supersector indices.

The composition of the SX5E is reviewed annually, based on the closing stock data on the last trading day in August.

The component stocks are announced on the first trading day in September. Changes to the component stocks are implemented on the third Friday in September and are effective the following trading day. Changes in the composition of the SX5E are made to ensure that the SX5E includes the 50 market sector leaders from within the SX5E.

The free float factors for each component stock used to calculate the SX5E, as described below, are reviewed, calculated, and implemented on a quarterly basis and are fixed until the next quarterly review.

The SX5E is also reviewed on an ongoing basis. Corporate actions (including initial public offerings, mergers and takeovers, spin-offs, delistings, and bankruptcy) that affect the SX5E composition are immediately reviewed. Any changes are announced, implemented, and effective in line with the type of corporate action and the magnitude of the effect.

Calculation of the SX5E

The SX5E is calculated with the “Laspeyres formula,” which measures the aggregate price changes in the component stocks against a fixed base quantity weight. The formula for calculating the SX5E value can be expressed as follows:

$$\text{SX5E} = \frac{\text{Free float market capitalization of the SX5E}}{\text{Adjusted base date market capitalization of the SX5E}} \times 1,000$$

The “free float market capitalization of the SX5E” is equal to the sum of the products of the closing price, market capitalization, and free float factor for each component stock as of the time the SX5E is being calculated.

The SX5E is also subject to a divisor, which is adjusted to maintain the continuity of the SX5E values across changes due to corporate actions, such as the deletion and addition of stocks, the substitution of stocks, stock dividends, and stock splits.

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License Agreement

We have entered into a non-exclusive license agreement with STOXX providing for the license to us and certain of our affiliated or subsidiary companies, in exchange for a fee, of the right to use indices owned and published by STOXX (including the SX5E) in connection with certain securities, including the Notes offered hereby.

The license agreement between us and STOXX requires that the following language be stated in this document:

STOXX has no relationship to us, other than the licensing of the SX5E and the related trademarks for use in connection with the Notes. STOXX does not:

- sponsor, endorse, sell, or promote the Notes;
- recommend that any person invest in the Notes offered hereby or any other securities;
- have any responsibility or liability for or make any decisions about the timing, amount, or pricing of the Notes;
- have any responsibility or liability for the administration, management, or marketing of the Notes; or
- consider the needs of the Notes or the holders of the Notes in determining, composing, or calculating the SX5E, or have any obligation to do so.

STOXX will not have any liability in connection with the Notes. Specifically:

- STOXX does not make any warranty, express or implied, and disclaims any and all warranty concerning:
    - the results to be obtained by the Notes, the holders of the Notes or any other person in connection with the use of the SX5E and the data included in the SX5E;
    - the accuracy or completeness of the SX5E and its data;
    - the merchantability and the fitness for a particular purpose or use of the SX5E and its data;
  - STOXX will have no liability for any errors, omissions, or interruptions in the SX5E or its data; and
- Under no circumstances will STOXX be liable for any lost profits or indirect, punitive, special, or consequential damages or losses, even if STOXX knows that they might occur.

The licensing agreement between us and STOXX is solely for their benefit and our benefit, and not for the benefit of the holders of the Notes or any other third parties.

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## Historical Information

Below is a table setting forth the intra-day high, intra-day low and period-end closing levels of this Reference Index. The information provided in the table is for the period from January 1, 2012 through February 12, 2018.

Period-Start Date	Period-End Date	High Intra-Day Level of this Reference Index	Low Intra-Day Level of this Reference Index	Period-End Closing Level of this Reference Index
1/1/2012	3/31/2012	2,611.42	2,279.73	2,477.28
4/1/2012	6/30/2012	2,509.93	2,050.16	2,264.72
7/1/2012	9/30/2012	2,604.77	2,142.46	2,454.26
10/1/2012	12/31/2012	2,668.23	2,427.32	2,635.93
1/1/2013	3/31/2013	2,754.80	2,563.64	2,624.02
4/1/2013	6/30/2013	2,851.48	2,494.54	2,602.59
7/1/2013	9/30/2013	2,955.47	2,539.15	2,893.15
10/1/2013	12/31/2013	3,116.23	2,891.39	3,109.00
1/1/2014	3/31/2014	3,185.68	2,944.13	3,161.60
4/1/2014	6/30/2014	3,325.50	3,083.43	3,228.24
7/1/2014	9/30/2014	3,301.15	2,977.52	3,225.93
10/1/2014	12/31/2014	3,278.97	2,789.63	3,146.43
1/1/2015	3/31/2015	3,742.42	2,998.53	3,697.38
4/1/2015	6/30/2015	3,836.28	3,374.18	3,424.30
7/1/2015	9/30/2015	3,714.26	2,973.16	3,100.67
10/1/2015	12/31/2015	3,524.04	3,036.17	3,267.52
1/1/2016	3/31/2016	3,266.01	2,672.73	3,004.93
4/1/2016	6/30/2016	3,156.86	2,678.27	2,864.74
7/1/2016	9/30/2016	3,101.75	2,742.66	3,002.24
10/1/2016	12/31/2016	3,290.52	2,937.98	3,290.52
1/1/2017	3/31/2017	3,500.93	3,214.31	3,500.93
4/1/2017	6/30/2017	3,666.80	3,407.33	3,441.88
7/1/2017	9/30/2017	3,594.85	3,363.68	3,594.85
10/1/2017	12/31/2017	3,708.82	3,503.20	3,503.96
1/1/2018	2/12/2018	3,687.22	3,306.66	3,368.25

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

The graph below illustrates the performance of this Reference Index from January 1, 2012 to February 12, 2018 reflecting its Initial Level of 3,368.25. The red line represents the Barrier Level of 2,189.36, which is equal to 65.00% of the closing level on February 12, 2018, rounded to two decimal places.

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

The following disclosure supplements, and to the extent inconsistent supersedes, the discussion in the product prospectus supplement dated January 12, 2016 under “Supplemental Discussion of U.S. Federal Income Tax Consequences.”

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 IRS has issued guidance that states that the U.S. Treasury Department and the IRS 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, 2019. Based on our determination that the Notes are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the Notes. However, it is possible that the Notes could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting a Reference Index or the Notes (for example, upon a Reference Index rebalancing), and following such occurrence the Notes could be treated as subject to withholding on dividend equivalent payments. Non-U.S. holders that enter, or have entered, into other transactions in respect of the Reference Indices or the Notes should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the Notes and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable withholding agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

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

Delivery of the Notes will be made against payment for the Notes on February 15, 2018, which is the third (3rd) business day following the pricing date (this settlement cycle being referred to as “T+3”). See “Plan of Distribution” in the prospectus dated January 8, 2016. For additional information as to the relationship between us and RBCCM, please see the section “Plan of Distribution—Conflicts of Interest” in the prospectus dated January 8, 2016.

In the initial offering of the Notes, they were offered to investors at a purchase price equal to par, except with respect to certain accounts as indicated on the cover page of this document.

We will deliver the Notes on a date that is greater than two business days following the trade date. Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the Notes more than two business days prior to the original issue date will be required to specify alternative arrangements to prevent a failed settlement.

The value of the Notes shown on your account statement may be based on RBCCM’s estimate of the value of the Notes if RBCCM or another of our affiliates were to make a market in the Notes (which it is not obligated to do). That estimate will be based upon the price that RBCCM may pay for the Notes in light of then prevailing market conditions, our creditworthiness and transaction costs. For a period of approximately 3 months after the issue date of the Notes, the value of the Notes that may be shown on your account statement may be higher than RBCCM’s estimated value of the Notes at that time. This is because the estimated value of the Notes will not include the underwriting discount and our hedging costs and profits; however, the value of the Notes shown on your account statement during that period may be a higher amount, reflecting the addition of RBCCM’s underwriting discount and



our estimated costs and profits from hedging the Notes. This excess is expected to decrease over time until the end of this period. After this period, if RBCCM repurchases your Notes, it expects to do so at prices that reflect their estimated value.

We may use this pricing supplement in the initial sale of the Notes. In addition, RBCCM or another of our affiliates may use this pricing supplement in a market-making transaction in the Notes after their initial sale. Unless we or our agent informs the purchaser otherwise in the confirmation of sale, this pricing supplement is being used in a market-making transaction.

No Prospectus (as defined in Directive 2003/71/EC (as amended, the "Prospectus Directive")) will be prepared in connection with the Notes. Accordingly, the Notes may not be offered to the public in any member state of the European Economic Area (the "EEA"), and any purchaser of the Notes who subsequently sells any of the Notes 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 Notes are not intended to be offered, sold or otherwise made available to, and should not be offered, sold or otherwise made available to, any retail investor in the EEA. For these purposes, the expression "offer" includes the communication in any form and by any means of sufficient information on the terms of the offer and the Notes to be offered so as to enable an investor to decide to purchase or subscribe the Notes, and a "retail investor" means a person who is one (or more) of: (a) a retail client, as defined in point

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(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 Notes or otherwise making them available to retail investors in the EEA has been prepared, and therefore, offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

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## STRUCTURING THE NOTES

The Notes are our debt securities, the return on which is linked to the performance of the Reference Indices. As is the case for all of our debt securities, including our structured notes, the economic terms of the Notes reflect our actual or perceived creditworthiness at the time of pricing. In addition, because structured notes result in increased operational, funding and liability management costs to us, we typically borrow the funds under these Notes 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. Using this relatively lower implied borrowing rate rather than the secondary market rate, is a factor that reduced the initial estimated value of the Notes at the time their terms were set. Unlike the estimated value included in this pricing supplement, any value of the Notes determined for purposes of a secondary market transaction may be based on a different funding rate, which may result in a lower value for the Notes than if our initial internal funding rate were used.

In order to satisfy our payment obligations under the Notes, we may choose to enter into certain hedging arrangements (which may include call options, put options or other derivatives) on the issue date with RBCCM or one of our other subsidiaries. The terms of these hedging arrangements take into account a number of factors, including our creditworthiness, interest rate movements, the volatility of the Reference Indices, and the tenor of the Notes. The economic terms of the Notes and their initial estimated value depend in part on the terms of these hedging arrangements.

The lower implied borrowing rate is a factor that reduced the economic terms of the Notes to you. The initial offering price of the Notes also reflects the underwriting commission and our estimated hedging costs. These factors resulted in the initial estimated value for the Notes on the pricing date being less than their public offering price. See “Selected Risk Considerations—The Initial Estimated Value of the Notes Is Less than the Price to the Public” above.

## VALIDITY OF THE NOTES

In the opinion of Norton Rose Fulbright Canada LLP, the issue and sale of the Notes has been duly authorized by all necessary corporate action of the Bank in conformity with the Indenture, and when the Notes have been duly executed, authenticated and issued in accordance with the Indenture and delivered against payment therefor, the Notes will be validly issued and, to the extent validity of the Notes is a matter governed by the laws of the Province of Ontario or Québec, or the laws of Canada applicable therein, and will be valid obligations of the Bank, subject to equitable remedies which may only be granted at the discretion of a court of competent authority, subject to applicable bankruptcy, to rights to indemnity and contribution under the Notes or the Indenture which may be limited by applicable law; to insolvency and other laws of general application affecting creditors’ rights, to limitations under applicable limitations statutes, and to limitations as to the currency in which judgments in Canada may be rendered, as prescribed by the Currency Act (Canada). This opinion is given as of the date hereof and is limited to the laws of the Provinces of Ontario and Québec and the federal laws of Canada applicable thereto. In addition, this opinion is subject to customary assumptions about the Trustee’s authorization, execution and delivery of the Indenture and the genuineness of signatures and certain factual matters, all as stated in the letter of such counsel dated January 8, 2016, which has been filed as Exhibit 5.1 to Royal Bank’s Form 6-K filed with the SEC dated January 8, 2016.

In the opinion of Morrison & Foerster LLP, when the Notes have been duly completed in accordance with the Indenture and issued and sold as contemplated by the prospectus supplement and the prospectus, the Notes will be valid, binding and enforceable obligations of Royal Bank, entitled to the benefits of the Indenture, subject to applicable bankruptcy, insolvency and similar laws affecting creditors’ rights generally, concepts of reasonableness and equitable principles of general applicability (including, without limitation, concepts of good faith, fair dealing and the lack of bad faith). This opinion is given as of the date hereof and is limited to the laws of the State of New York. This opinion is subject to customary assumptions about the Trustee’s authorization, execution and delivery of the Indenture and the genuineness of signatures and to such counsel’s reliance on the Bank and other sources as to certain

factual matters, all as stated in the legal opinion dated January 8, 2016, which has been filed as Exhibit 5.2 to the Bank's Form 6-K dated January 8, 2016.

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