ROYAL BANK OF CANADA
Form 424B2
March 27, 2019

RBC Capital Markets®

Filed Pursuant to Rule 424(b)(2)
Registration Statement No. 333-227001

Pricing Supplement
Dated March 26, 2019
To the Product Prospectus Supplement ERN-EI-1, the Prospectus Supplement and the Prospectus, Each Dated September 7, 2018

$112,000
Barrier Booster Notes Linked to the Lesser Performing of Two Equity Indices, Due April 1, 2024
Royal Bank of Canada

Royal Bank of Canada is offering Barrier Booster Notes Linked to the Lesser Performing of Two Equity Indices (the "Notes") linked to the lesser performing of two equity indices (each, a "Reference Asset" and collectively, the "Reference Assets"). The Notes offered are senior unsecured obligations of Royal Bank of Canada and will have the terms described in the documents described above, as supplemented or modified by this pricing supplement.

Reference Assets	Initial Levels	Barrier Levels*
S&P 500® Index ("SPX")	2,818.46	1,691.08, which is 60.00% of its Initial Level
EURO STOXX 50® Index ("SX5E")	3,319.53	1,991.72, which is 60.00% 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-4 of the product prospectus supplement dated September 7, 2018, on page S-1 of the prospectus supplement dated September 7, 2018, and "Selected Risk Considerations" beginning on page P-6 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. The Notes are not subject to conversion into our common shares under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act.

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
Trade Date:	March 26, 2019	Principal Amount:	$1,000 per Note
Issue Date:	March 29, 2019	Maturity Date:	April 1, 2024
Valuation Date:	March 26, 2024	Booster Coupon	67.00%
Initial Level:	For each Reference Asset, its closing level on the Trade Date.		
Final Level:	For each Reference Asset, its closing level on the Valuation Date.		

Payment at Maturity:

	If the Final Level of the Lesser Performing Index is greater than or equal to its Initial Level but its Percentage Change does not exceed the Booster Coupon, the Notes provide a fixed return equal to the Principal Amount plus the Booster Coupon. If the Final Level of the Lesser Performing Index is greater than its Initial Level and its Percentage Change exceeds the Booster Coupon, the Notes provide a one-for-one positive return based upon the increase in the level of that Reference Asset. If the Percentage Change of the Lesser Performing Asset is less than 0%, but is not less than -40%, then the investor will receive the principal amount only. If the Final Level of the Lesser Performing Index is less than its Barrier Level (60.00% of its Initial Level), you will receive an amount at maturity that is proportionate to the decrease in that Reference Asset over the term of the Notes, and you may lose up to 100% of your initial investment.
Lesser Performing Index:	The Reference Asset which has the lowest Percentage Change.
Interest Payments:	None.
CUSIP:	78013X3D8

	Per Note	Total
Price to public[(1)]	100.00%	$112,000.00
Underwriting discounts and commissions[(1)]	3.25%	$3,640.00
Proceeds to Royal Bank of Canada	96.75%	$108,360.00

[(1)] 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 $967.50 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 $937.08 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 $32.50 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 $32.50 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)” below.

RBC Capital Markets, LLC

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

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 Barrier Booster Notes Linked to the Lesser Performing of Two Equity Indices (the "Notes") linked to the lesser performing of two equity indices (the "Reference Assets").
Issuer:	Royal Bank of Canada ("Royal Bank")
Trade Date (Pricing Date):	March 26, 2019
Issue Date:	March 29, 2019
Valuation Date:	March 26, 2024
Maturity Date:	April 1, 2024
Denominations:	Minimum denomination of $1,000, and integral multiples of $1,000 thereafter.
Designated Currency:	U.S. Dollars
Initial Level:	The closing level of the relevant Reference Asset on the Trade Date, as set forth on the cover page.
Final Level:	For each Reference Asset, its closing level on the Valuation Date.
Barrier Level:	60.00% of the Initial Level of each Reference Asset, as set forth on the cover page.
Booster Coupon:	67.00%
Payment at Maturity:	If, on the Valuation Date, the Percentage Change of the Lesser Performing Reference Asset is zero or positive, but does not exceed the Booster Coupon, then the investor will receive an amount equal to the principal amount plus the Booster Coupon. If, on the Valuation Date, the Percentage Change of the Lesser Performing Reference Asset is greater than the Booster Coupon, then the investor will receive an amount equal to: Principal Amount + (Principal Amount x Percentage Change of Lesser Performing Asset) If, on the Valuation Date, the Percentage Change of the Lesser Performing Asset is less than 0%, but not by more than the Barrier Percentage (that is, the Percentage Change is between -0.01% and -40.00%), then the investor will receive the principal amount only. If, on the Valuation Date, the Percentage Change of the Lesser Performing Asset is negative, by more than the Barrier Percentage (that is, the Percentage Change is between -40.01% and -100%), then the investor will receive a cash payment equal to: Principal Amount + (Principal Amount x Percentage Change of Lesser Performing Reference Asset) In this case, you will lose all or a portion of the principal amount of the Notes. With respect to each Reference Asset:

Percentage Change:	$\frac{\text{Final Level} - \text{Initial Level}}{\text{Initial Level}}$
Lesser Performing Index:	The Reference Asset which has the lowest Percentage Change.
Market Disruption Events:	If a market disruption event occurs on the Valuation Date as to a Reference Asset, the determination of the Final Level of that Reference Asset will be postponed. However, the determination of the Final Level of any Reference Asset that is not affected by that market disruption event will not be postponed.
Calculation Agent:	RBC Capital Markets, LLC ("RBCCM")

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

U.S. Tax Treatment:	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 pre-paid cash-settled derivative contract in respect of the Reference Assets 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 & Foerster LLP) in the product prospectus supplement dated September 7, 2018 under "Supplemental Discussion of U.S. Federal Income Tax Consequences," which apply to the Notes.
Secondary Market:	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.
Listing:	The Notes will not be listed on any securities exchange.
Settlement:	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 September 7, 2018).
Terms Incorporated in the Master Note:	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 September 7, 2018, as modified by this terms supplement.

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

ADDITIONAL TERMS OF YOUR NOTES

You should read this pricing supplement together with the prospectus dated September 7, 2018, as supplemented by the prospectus supplement dated September 7, 2018 and the product prospectus supplement dated September 7, 2018, relating to our Senior Global Medium-Term Notes, Series H, 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 September 7, 2018 and “Additional Risk Factors Specific to the Notes” in the product prospectus supplement dated September 7, 2018, 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 as follows (or if that 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/l96181424b3.htm
Prospectus Supplement dated September 7, 2018:
https://www.sec.gov/Archives/edgar/data/1000275/000121465918005975/f97180424b3.htm
Product Prospectus Supplement ERN-EI-1 dated September 7, 2018:
https://www.sec.gov/Archives/edgar/data/1000275/000114036118038044/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.

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

HYPOTHETICAL EXAMPLES

The examples set out below are included for illustration purposes only. The hypothetical Percentage Changes of the Lesser Performing Reference Asset used to illustrate the calculation of the Payment at Maturity (rounded to two decimal places) are not estimates or forecasts of its Final Level or the level of either Reference Asset on any trading day prior to the Maturity Date. All examples assume that a holder purchased Notes with an aggregate principal amount of $1,000, and are based on the Barrier Percentage of 40.00% (the Barrier Level of each Reference Asset is 60.00% of its Initial Level), and the Booster Coupon of 67.00% of the principal amount, and assume that no market disruption event occurs on the Valuation Date as to either Reference Asset.

Example 1— Calculation of the Payment at Maturity where the Percentage Change of the Lesser Performing Reference Asset is positive, but less than the Booster Coupon.

Percentage Change: 10%, which is less than the Booster Coupon

Payment at Maturity: $1,000 + ($1,000 x 67.00%) = $1,000 + $670.00 = $1,670.00

On a $1,000 investment, a 10% Percentage Change for the Lesser Performing Reference Asset results in a Payment at Maturity of $1,670.00, a 67.00% return on the Notes.

Example 2— Calculation of the Payment at Maturity where the Percentage Change of the Lesser Performing Reference Asset is positive and exceeds the Booster Coupon.

Percentage Change: 85%

Payment at Maturity: $1,000 + ($1,000 x 85.00%) = $1,000 + $850.00 = $1,850.00

On a $1,000 investment, an 85% Percentage Change for the Lesser Performing Reference Asset results in a Payment at Maturity of $1,850.00, a 85.00% return on the Notes.

Example 3— Calculation of the Payment at Maturity where the Percentage Change of the Lesser Performing Reference Asset is negative (but not by more than the Barrier Percentage).

Percentage Change:	-10%
Payment at Maturity:	At maturity, if the Percentage Change of the Lesser Performing Reference Asset is negative BUT not by more than the Barrier Percentage, then the Payment at Maturity will equal the principal amount.

On a $1,000 investment, a -10% Percentage Change results in a Payment at Maturity of $1,000, a 0% return on the Notes.

Example 4— Calculation of the Payment at Maturity where the Percentage Change of the Lesser Performing Reference Asset is negative (by more than the Barrier Percentage).

Percentage Change: -45%

Payment at Maturity: $1,000 + ($1,000 x -45%) = $1,000 - $450.00 = $550.00

On a $1,000 investment, a -45% Percentage Change in the Lesser Performing Reference Asset results in a Payment at Maturity of $550.00, a -45% return on the Notes.

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

SELECTED RISK CONSIDERATIONS

An investment in the Notes involves significant risks. Investing in the Notes is not equivalent to investing directly in the Reference Assets. 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 Index between the Trade Date and the Valuation Date of more than 40%. You will lose one percent of the principal amount of your Notes for each one percent that the Lesser Performing Index has declined if the Final Level of the Lesser Performing Index is less than its Barrier Level.
- Your Redemption Amount Will Be Determined Solely by Reference to the Lesser Performing Index Even if the Other Reference Asset Performs Better – Your Redemption Amount will be determined solely by reference to the performance of the Lesser Performing Index. Even if the Final Level of the other Reference Asset has increased compared to its Initial Level, or has experienced a decrease that is less than that of the Lesser Performing Index, your return will only be determined by reference to the performance of the Lesser Performing Index, regardless of the performance of the other Reference Asset. 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 components, as scaled by the weighting of that basket component. However, in the case of the Notes, the individual performance of each of the Reference Assets would not be combined, and the depreciation of one Reference Asset would not be mitigated by any appreciation of the other Reference Asset. Instead your return will depend solely on the Final Level of the Lesser Performing Index.
- Your Return May Be Lower than the Return on a Conventional Debt Security of Comparable Maturity – You will not receive any 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.
- 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 the Redemption Amount is dependent upon Royal Bank's ability to repay its obligations at that time. This will be the case even if the levels of the Reference Assets increase after the Trade Date. No assurance can be given as to what our financial condition will be at the maturity 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 Assets — The return on your Notes is unlikely to reflect the return you would realize if you actually owned the securities represented by the Reference Assets. For instance, you will not receive or be entitled to receive any dividend payments or other distributions on those 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 Assets may have.
- 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 Assets, 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 on the Cover Page of this Pricing Supplement Is an Estimate Only, Calculated as of the Time the Terms of the Notes Were Set — The initial estimated value of the Notes is 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 Trade 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.

- 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 euro, 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.
- Inconsistent Research — Royal Bank or its affiliates may issue research reports on securities that are, or may become, components of the Reference Assets. We may also publish research from time to time on financial markets and other matters that may influence the levels of the Reference Assets 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 Assets. You should make your own independent investigation of the merits of investing in the Notes and the Reference Assets.
- Market Disruption Events and Adjustments – The Redemption Amount and the Valuation Date are subject to adjustment as to each Reference Asset 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.

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

INFORMATION REGARDING THE REFERENCE ASSETS

All disclosures contained in this pricing supplement regarding the Reference Assets, 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 Asset. The consequences of an index sponsor discontinuing publication of a Reference Asset 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 either Reference Asset or any successor index.

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

S&P 500® Index ("SPX")

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

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

Effective with the September 2015 rebalance, consolidated share class lines will no longer be included in the SPX. Each share class line will be subject to public float and liquidity criteria individually, but the company's total market capitalization will be used to evaluate each share class line. This may result in one listed share class line of a company being included in the SPX while a second listed share class line of the same company is excluded.

Computation of the SPX

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

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

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

In September 2012, all shareholdings representing more than 5% of a stock's outstanding shares, other than holdings by "block owners," were removed from the float for purposes of calculating the SPX. Generally, these "control holders"

will include officers and directors, private equity, venture capital and special equity firms, other publicly traded companies that hold shares for control, strategic partners, holders of restricted shares, ESOPs, employee and family trusts, foundations associated with the company, holders of unlisted share classes of stock, government entities at all levels (other than government retirement/pension funds) and any individual person who controls a 5% or greater stake in a company as reported in regulatory filings. However, holdings by block owners, such as depositary banks, pension funds, mutual funds and ETF providers, 401(k) plans of the company, government retirement/pension funds, investment funds of insurance companies, asset managers and investment funds, independent foundations and savings and investment plans, will ordinarily be considered part of the float.

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

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

For each stock, an investable weight factor ("IWF") is calculated by dividing the available float shares by the total shares outstanding. Available float shares are defined as the total shares outstanding less shares held by control holders. This calculation is subject to a 5% minimum threshold for control blocks. For example, if a company's officers and directors hold 3% of the company's shares, and no other control group holds 5% of the company's shares, S&P would assign that company an IWF of 1.00, as no control group meets the 5% threshold. However, if a company's officers and directors hold 3% of the company's shares and another control group holds 20% of the company's shares, S&P would assign an IWF of 0.77, reflecting the fact that 23% of the company's outstanding shares are considered to be held for control. As of July 31, 2017, companies with multiple share class lines are no longer eligible for inclusion in the Reference Asset. Constituents of the Reference Asset prior to July 31, 2017 with multiple share class lines will be grandfathered in and continue to be included in the Reference Asset. If a constituent company of the Reference Asset reorganizes into a multiple share class line structure, that company will remain in the Reference Asset at the discretion of the S&P Index Committee in order to minimize turnover.

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

Index Maintenance

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

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

Changes in a company's shares outstanding and IWF due to its acquisition of another public company are made as soon as reasonably possible. At S&P's discretion, de minimis merger and acquisition share changes are accumulated and implemented with the quarterly share rebalancing.

All other changes of less than 5% are accumulated and made quarterly on the third Friday of March, June, September, and December.

Changes in a company's total shares outstanding of 5% or more due to public offerings are made as soon as reasonably possible. Other changes of 5% or more (for example, due to tender offers, Dutch auctions, voluntary exchange offers, company stock repurchases, private placements, acquisitions of private companies or non-index companies that do not trade on a major exchange, redemptions, exercise of options, warrants, conversion of preferred stock, notes, debt,

equity participations, at-the-market stock offerings or other recapitalizations) are made weekly, and are generally announced on Fridays for implementation after the close of trading the following Friday (one week later). If a 5% or more share change causes a company's IWF to change by five percentage points or more, the IWF is updated at the same time as the share change. IWF changes resulting from partial tender offers are considered on a case-by-case basis.

License Agreement

S&P® is a registered trademark of Standard & Poor's Financial Services LLC 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. "Standard & Poor's®", "S&P 500®" and "S&P®" are trademarks of Standard & Poor's Financial Services LLC. These trademarks have been sublicensed for certain purposes by us. The SPX is a product of S&P 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, Standard & Poor's Financial Services LLC 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 SPX to track general market performance. S&P Dow Jones Indices' only relationship to us with respect to the SPX is the licensing of the SPX and certain trademarks, service marks and/or trade names of S&P Dow Jones Indices and/or its third party licensors. The SPX 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 holders of the Notes into consideration in determining, composing or calculating the SPX. 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 SPX 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 SPX. 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 SPX 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 SPX 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.

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

Historical Information
The graph below sets forth the information relating to the historical performance of the SPX for the period from January 1, 2009 through March 26, 2019.
We obtained the information regarding the historical performance of the SPX in the graph below from Bloomberg Financial Markets.
We have not independently verified the accuracy or completeness of the information obtained from Bloomberg Financial Markets. The historical performance of the SPX should not be taken as an indication of its future performance, and no assurance can be given as to the Final Level of the SPX. We cannot give you assurance that the performance of the SPX will not result in the loss of all or any part of your positive return on your investment.
S&P 500® Index ("SPX")

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

EURO STOXX 50® Index ("SX5E")
The SX5E was created by STOXX Limited, 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® Supersector indices, which represent the Eurozone portion of the STOXX Europe 600® 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 monthly basis. Corporate actions (including initial public offerings, mergers and takeovers, spin-offs, delistings, and bankruptcy) that affect the SX5E composition are announced immediately, implemented two trading days later and become effective on the next trading day after implementation.
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:

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

The "free float market capitalization of the SX5E" is equal to the sum of the products of the price, the number of shares, the free float factor and the weighting cap factor for each component stock as of the time the SX5E is being calculated.
The 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.

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

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.

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

Historical Information

The graph below sets forth the information relating to the historical performance of the SX5E for the period from January 1, 2009 through March 26, 2019.

We obtained the information regarding the historical performance of the SX5E in the graph below from Bloomberg Financial Markets.

We have not independently verified the accuracy or completeness of the information obtained from Bloomberg Financial Markets. The historical performance of the SX5E should not be taken as an indication of its future performance, and no assurance can be given as to the Final Level of the SX5E. We cannot give you assurance that the performance of the SX5E will not result in the loss of all or any part of your positive return on your investment.

EURO STOXX 50® Index ("SX5E")

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

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 September 7, 2018 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 Internal Revenue Service (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, 2021. Based on our determination that the Notes are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the Notes. However, it is possible that the Notes could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the Reference Assets or the Notes (for example, upon a Reference Asset 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 Assets 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.

The accompanying product prospectus supplement notes that FATCA withholding on payments of gross proceeds from a sale or redemption of Notes will only apply to payments made after December 31, 2018. That discussion is modified to reflect regulations proposed by the U.S. Treasury Department in December 2018 indicating an intent to eliminate the requirement under FATCA of withholding on gross proceeds of the disposition of financial instruments. The U.S. Treasury Department has indicated that taxpayers may rely on these proposed regulations pending their finalization. Prospective investors are urged to consult with their own tax advisors regarding the possible implications of FATCA on their investment in the Notes.

SUPPLEMENTAL PLAN OF DISTRIBUTION (CONFLICTS OF INTEREST)

Delivery of the Notes will be made against payment for the Notes on March 29, 2019, which is the third (3rd) business day following the Trade Date (this settlement cycle being referred to as "T+3"). See "Plan of Distribution" in the prospectus dated September 7, 2018. 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 September 7, 2018.

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.

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.

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 12 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.

Barrier Booster Notes Linked to the Lesser
Performing of Two Equity Indices

STRUCTURING THE NOTES

The Notes are our debt securities, the return on which is linked to the performance of the Reference Assets. 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 Assets, 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 Trade 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 September 7, 2018, which has been filed as Exhibit 5.1 to Royal Bank’s Form 6-K filed with the SEC dated September 7, 2018.

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 September 7, 2018, which has been filed as Exhibit 5.2 to the Bank’s Form 6-K dated September 7, 2018.

P-16 RBC Capital Markets, LLC