

ROYAL BANK OF CANADA
 Form FWP
 January 09, 2018

RBC Capital Markets® Filed Pursuant to Rule 433
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The information in this preliminary terms supplement is not complete and may be changed.

Preliminary Terms
 Supplement

Subject to Completion:

Dated January 9, 2018

Pricing Supplement

Dated January __, 2017

to the Product

Prospectus Supplement

ERN-EI-1 Dated

January 12, 2016, the

Prospectus Supplement

Dated January 8, 2016,

and the Prospectus

Dated January 8, 2016

Buffered Enhanced Return Notes Linked to the Lesser
 Performing of Two Equity Indices,
 Due January 31, 2023
 Royal Bank of Canada

Royal Bank of Canada is offering the Buffered Enhanced Return Notes (the “Notes”) linked to the lesser performing of the S&P 500® Index and the EURO STOXX 50® Index (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 terms supplement.

The Notes do not pay interest. The Notes provide a [209.00%-215.00%] (to be determined on the Pricing Date) leveraged positive return if the level of the Lesser Performing Index increases from its Initial Level to its Final Level. Investors will lose 1% of the principal amount for each 1% that the Final Level of the Lesser Performing Index is less than its Initial Level by more than 25.00%. 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 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-6 of this terms 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 terms 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:	January 26, 2018	Principal Amount:	\$1,000 per Note
Issue Date:	January 31, 2018	Maturity Date:	January 31, 2023
Valuation Date:	January 26, 2023	Leverage Factor:	[209.00%-215.00%] (to be determined on the Pricing Date)
Initial Level:	For each Reference Asset, its closing level on the Pricing Date.		
Final Level:	For each Reference Asset, its closing level on the Valuation Date.		

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Buffer Percentage: 25.00%

Buffer Level: For each Reference Asset, 75.00% of its Initial Level
If the Final Level of the Lesser Performing Index is greater than its Initial Level, the Notes provide a positive return equal to the increase in the level of that Reference Asset multiplied by the Leverage Factor.

Payment at Maturity: If the Final Level of the Lesser Performing Index is less than or equal to zero but greater than or equal to its Buffer Level, then the investor will receive the principal amount.
If the Final Level of the Lesser Performing Index is less than its Buffer Level, you will lose 1% of the principal amount for each 1% that its Final Level is less than its Initial Level by more than 25.00%. Any payments on the Notes are subject to our credit risk.

Lesser Performing Index: The Reference Asset which has the lowest Percentage Change.

Interest Payments: None.

CUSIP: 78013XDS4

	Per Note	Total
Price to public ⁽¹⁾	100.00%	\$
Underwriting discounts and commissions ⁽¹⁾	2.75%	\$
Proceeds to Royal Bank of Canada	97.25%	\$

⁽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 \$972.50 and \$1,000 per \$1,000 in principal amount.

The initial estimated value of the Notes as of the date of this terms supplement is \$936.23 per \$1,000 in principal amount, which is less than the price to public. The final pricing supplement relating to the Notes will set forth our estimate of the initial value of the Notes as of the Pricing Date, which will not be less than \$916.23 per \$1,000 in principal amount. 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.

If the Notes priced on the date of this terms supplement, RBC Capital Markets, LLC, which we refer to as RBCCM, acting as agent for Royal Bank of Canada, would receive a commission of approximately \$27.50 per \$1,000 in principal amount of the Notes and would use a portion of that commission to allow selling concessions to other dealers of up to approximately \$27.50 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

Buffered Enhanced Return Notes Linked to the
 Lesser Performing of Two Equity Indices,
 Due January 31, 2023
 Royal Bank of Canada

SUMMARY

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

General: This terms supplement relates to an offering of Buffered Enhanced Return Notes (the “Notes”) linked to the lesser performing of two equity indices (the “Reference Assets”).

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

Issue: Senior Global Medium-Term Notes, Series G

Reference Assets: The S&P 500[®] Index (Bloomberg ticker: SPX) and the EURO STOXX 50[®] Index (Bloomberg ticker: SX5E)

Pricing Date: January 26, 2018

Issue Date: January 31, 2018

Term: Approximately five (5) years

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

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

Valuation Date: January 26, 2023

Maturity Date: January 31, 2023

Initial Level: For each Reference Asset, its closing level on the Pricing Date.

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

Leverage Factor: [209.00%-215.00%], to be determined on the Pricing Date.

**Buffer
 Percentage:** 25.00%

Buffer Level: For each Reference Asset, 75.00% of its Initial Level
 If, on the Valuation Date, the Percentage Change of the Lesser Performing Index is positive, then the investor will receive an amount equal to:

Principal Amount + (Principal Amount x Percentage Change of Lesser Performing Index
 x Leverage Factor)

If, on the Valuation Date, the Percentage Change of the Lesser Performing Index is less than or equal to 0%, but not by more than the Buffer Percentage (that is, the Percentage Change is between zero and -25.00%), then the investor will receive the principal amount only.

If, on the Valuation Date, the Percentage Change of the Lesser Performing Index is negative, by more than the Buffer Percentage (that is, the Percentage Change is between -25.01% and -100%), then the investor will receive a cash payment equal to:

Principal Amount + [Principal Amount x (Percentage Change of Lesser Performing Index
 + Buffer Percentage)]

In this case, you will lose a portion, which may be significant, 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.

P-2 RBC Capital Markets, LLC

Buffered Enhanced Return Notes Linked to the
Lesser Performing of Two Equity Indices,
Due January 31, 2023
Royal Bank of Canada

Market Disruption Event: 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”)

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 January 12, 2016 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 January 8, 2016).

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 terms 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 terms supplement.

P-3 RBC Capital Markets, LLC

Buffered Enhanced Return Notes Linked to the
Lesser Performing of Two Equity Indices,
Due January 31, 2023
Royal Bank of Canada

ADDITIONAL TERMS OF YOUR NOTES

You should read this terms 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 terms supplement will have the meanings given to them in the product prospectus supplement. In the event of any conflict, this terms supplement will control. The Notes vary from the terms described in the product prospectus supplement in several important ways. You should read this terms supplement carefully.

This terms 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 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 ERN-EI-1 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 terms supplement, “we,” “us,” or “our” refers to Royal Bank of Canada.

Royal Bank of Canada has filed a registration statement (including a product prospectus supplement, a prospectus supplement, and a prospectus) with the SEC for the offering to which this terms supplement relates. Before you invest, you should read those documents and the other documents relating to this offering that we have filed with the SEC for more complete information about us and this offering. You may obtain these documents without cost by visiting EDGAR on the SEC website at www.sec.gov. Alternatively, Royal Bank of Canada, any agent or any dealer participating in this offering will arrange to send you the product prospectus supplement, the prospectus supplement and the prospectus if you so request by calling toll-free at 1-877-688-2301.

P-4 RBC Capital Markets, LLC

Buffered Enhanced Return Notes Linked to the
 Lesser Performing of Two Equity Indices,
 Due January 31, 2023
 Royal Bank of Canada

HYPOTHETICAL EXAMPLES

The examples set out below are included for illustration purposes only. The hypothetical Percentage Changes of the Lesser Performing Index used to illustrate the calculation of the Payment at Maturity (rounded to two decimal places) are not estimates or forecasts of its Initial Level, 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, a hypothetical Buffer Percentage of 25.00% (resulting in a hypothetical Buffer Level of 75.00% of the Initial Level for each Reference Asset) a hypothetical Leverage Factor of 212.00% of the principal amount (the midpoint of the Leverage Factor range of 209.00% to 215.00% of the principal amount), and 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 Index is positive.

Percentage Change: 10.00%

Payment at Maturity: $\$1,000 + (\$1,000 \times 10.00\% \times 212.00\%) = \$1,000 + \$212.00 = \$1,212.00$

On a \$1,000 investment, a 10.00% Percentage Change for the Lesser Performing Index results in a Payment at Maturity of \$1,212.00, a 21.20% return on the Notes.

Example 2— Calculation of the Payment at Maturity where the Percentage Change of the Lesser Performing Index is negative (but not by more than the Buffer Percentage).

Percentage Change: -10.00%

Payment at Maturity: At maturity, if the Percentage Change of the Lesser Performing Index is negative BUT not by more than the Buffer Percentage, then the Payment at Maturity will equal the principal amount.

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

Example 3— Calculation of the Payment at Maturity where the Percentage Change of the Lesser Performing Index is negative (by more than the Buffer Percentage).

Percentage Change: -45%

Payment at Maturity: $\$1,000 + [\$1,000 \times (-45\% + 25.00\%)] = \$1,000 - \$200.00 = \800.00

On a \$1,000 investment, a -45% Percentage Change in the Lesser Performing Index results in a Payment at Maturity of \$800.00, a -20% return on the Notes.

P-5 RBC Capital Markets, LLC

Buffered Enhanced Return Notes Linked to the
Lesser Performing of Two Equity Indices,
Due January 31, 2023
Royal Bank of Canada

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 a substantial portion of their principal amount if there is a decline in the level of the Lesser Performing Index between the Pricing Date and the Valuation Date. You will lose 1% of the principal amount of your Notes for each 1% that the Final Level of the Lesser Performing Index is less than its Initial Level by more than 25.00%.

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.

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 Pricing 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 Will Be Less than the Price to the Public — The initial estimated value set forth on the cover page and that will be set forth in the final pricing supplement for the Notes 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.

P-6 RBC Capital Markets, LLC

Buffered Enhanced Return Notes Linked to the
Lesser Performing of Two Equity Indices,
Due January 31, 2023
Royal Bank of Canada

The Initial Estimated Value of the Notes on the Cover Page of this Terms Supplement and that We Will Provide in the Final Pricing Supplement Are Estimates Only, Calculated as of the Time the Terms of the Notes Are 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 estimates are 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 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.

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 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.

P-7 RBC Capital Markets, LLC

Buffered Enhanced Return Notes Linked to the
Lesser Performing of Two Equity Indices,
Due January 31, 2023
Royal Bank of Canada

INFORMATION REGARDING THE REFERENCE ASSETS

All disclosures contained in this terms 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 depository banks, pension funds, mutual funds and ETF providers, 401(k) plans of the company, government retirement/pension funds, investment funds of insurance companies, asset managers and investment funds, independent foundations and savings and investment plans, will ordinarily be considered part of the float.

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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.

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

P-8 RBC Capital Markets, LLC

Buffered Enhanced Return Notes Linked to the
Lesser Performing of Two Equity Indices,
Due January 31, 2023
Royal Bank of Canada

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 SPX. Constituents of the SPX prior to July 31, 2017 with multiple share class lines will be grandfathered in and continue to be included in the SPX. If a constituent company of the SPX reorganizes into a multiple share class line structure, that company will remain in the SPX 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 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

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Historical Information

The graph below sets forth the information relating to the historical performance of the SPX. In addition, below the graph is a table setting forth the intra-day high, intra-day low and period-end closing levels of this Reference Asset. The information provided in this table is for the period from January 1, 2014 through January 8, 2018.

We obtained the information regarding the historical performance of the SPX in the chart 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 result in any positive return on your initial investment.

S&P 500® Index (“SPX”)

Period-Start Date	Period-End Date	High Intra-Day Level of this Reference Asset	Low Intra-Day Level of this Reference Asset	Period-End Closing Level of this Reference Asset
1/1/2014	3/31/2014	1,883.97	1,737.92	1,872.34
4/1/2014	6/30/2014	1,968.17	1,814.36	1,960.23
7/1/2014	9/30/2014	2,019.26	1,904.78	1,972.29
10/1/2014	12/31/2014	2,093.55	1,820.66	2,058.90
1/1/2015	3/31/2015	2,119.59	1,980.90	2,067.89
4/1/2015	6/30/2015	2,134.72	2,048.38	2,063.11
7/1/2015	9/30/2015	2,132.82	1,867.01	1,920.03
10/1/2015	12/31/2015	2,116.48	1,893.70	2,043.94
1/1/2016	3/31/2016	2,072.21	1,810.10	2,059.74
4/1/2016	6/30/2016	2,120.55	1,991.68	2,098.86
7/1/2016	9/30/2016	2,193.81	2,074.02	2,168.27
10/1/2016	12/31/2016	2,277.53	2,083.79	2,238.83
1/1/2017	3/31/2017	2,400.98	2,245.13	2,362.72
4/1/2017	6/30/2017	2,453.82	2,328.95	2,423.41
7/1/2017	9/30/2017	2,519.44	2,407.70	2,519.36
10/1/2017	12/31/2017	2,694.97	2,520.40	2,673.61
1/1/2018	1/8/2018	2,748.51	2,682.36	2,747.71

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

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Lesser Performing of Two Equity Indices,
Due January 31, 2023
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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:

$$\text{SX5E} = \text{Free float market capitalization of the SX5E}$$