

ROYAL BANK OF CANADA
Form 424B2
August 03, 2017

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Pricing Supplement

Dated August 1, 2017 \$1,290,000
To the Product Auto-Callable Contingent Coupon Barrier Notes
Prospectus Supplement Linked to the Lesser Performing of One Exchange
No. TP-1, the Prospectus Traded Fund and One Equity Index,
Supplement and the Due August 6, 2020
Prospectus, Each Dated Royal Bank of Canada
January 8, 2016

Royal Bank of Canada is offering Auto-Callable Contingent Coupon Barrier Notes (the “Notes”) linked to the lesser performing of one exchange traded fund and one equity index (each, a “Reference Asset” and collectively, the “Reference Assets”). The Notes offered are senior unsecured obligations of Royal Bank of Canada, will pay a quarterly Contingent Coupon at the rate and under the circumstances specified below, and will have the terms described in the documents described above, as supplemented or modified by this pricing supplement. The Notes will not be listed on any securities exchange.

Reference Assets	Initial Levels ⁽¹⁾	Coupon Barriers and Trigger Levels ⁽²⁾
SPDR® S&P® Biotech ETF (“XBI”)	\$77.09	\$47.02, which is 61.00% of its Initial Level
S&P 500® Index (“SPX”)	2,476.35	1,510.57, which is 61.00% of its Initial Level

⁽¹⁾ For the XBI, the Initial Level was its closing price, and for the SPX, its closing level, on the Trade Date.

⁽²⁾ 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 “Risk Factors” beginning on page PS-5 of the product prospectus supplement dated January 8, 2016, on page S-1 of the prospectus supplement dated January 8, 2016, and “Selected Risk Considerations” beginning on page P-7 of this pricing supplement.

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

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

Issuer:	Royal Bank of Canada	Listing:	None
Trade Date:	August 1, 2017	Principal Amount:	\$1,000 per Note
Issue Date:	August 4, 2017	Maturity Date:	August 6, 2020
Observation Dates:	Quarterly, as set forth below.	Coupon Payment Dates:	Quarterly, as set forth below
Valuation Date:	August 3, 2020	Contingent Coupon Rate:	8.00% per annum

If the Observation Level of each Reference Asset is greater than or equal to its Coupon Barrier on the applicable Observation Date, we will pay the Contingent Coupon applicable to the corresponding Observation Date. You may not receive any Contingent Coupons during the term of the Notes.

Payment at Maturity (if held

to maturity): If the Notes are not previously called, we will pay you at maturity an amount based on the Final Level of the Lesser Performing Reference Asset:
 For each \$1,000 in principal amount, \$1,000 plus the Contingent Coupon at maturity, unless the Final Level of the Lesser Performing Reference Asset is less than its Trigger Level.
 If the Final Level of the Lesser Performing Reference Asset is less than its Trigger Level, then the investor will receive at maturity, for each \$1,000 in principal amount, a cash payment equal to:
 $\$1,000 + (\$1,000 \times \text{Reference Asset Return of the Lesser Performing Reference Asset})$
 Investors in the Notes could lose some or all of their principal amount if the Final Level of the Lesser Performing Reference Asset below its Trigger Level.
 Lesser Performing Reference Asset: The Reference Asset with the largest percentage decrease between its Initial Level and its Final Level.
 Call Feature: If the Observation Level of each Reference Asset is greater than or equal to its Initial Level starting on any Observation Date on or after August 1, 2018, the Notes will be automatically called for 100% of their principal amount, plus the Contingent Coupon applicable to the corresponding Observation Date.
 Call Settlement Dates: The Coupon Payment Date corresponding to that Observation Date.
 Observation Level: For the XBI, its closing price, and for the SPX, its closing level, on any Observation Date.
 Final Level: For the XBI, its closing price, and for the SPX, its closing level, on the Valuation Date.
 CUSIP: 78012K3P0

	Per Note	Total
Price to public	100.00%	\$1,290,000.00
Underwriting discounts and commissions	0.65%	\$8,385.00
Proceeds to Royal Bank of Canada	99.35%	1,281,615.00

The initial estimated value of the Notes as of the date of this pricing supplement is \$979.60 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 \$6.50 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 \$6.50 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

Auto-Callable Contingent Coupon Barrier Notes
Linked to the Lesser Performing of One
Exchange Traded Fund and One Equity Index,
Due August 6, 2020

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.

This pricing supplement relates to an offering of Auto-Callable Contingent Coupon Barrier Notes (the “Notes”) linked to the lesser performing of the following (each, a “Reference Asset”, and collectively, the “Reference Assets”):

General: (i) the shares of SPDR® S&P® Biotech ETF (the “XBI”); and
(ii) the S&P 500® Index (the “SPX”);
See “Additional Terms of your Notes Related to Indices” below, which relates to the SPX.

Issuer: Royal Bank of Canada (“Royal Bank”)
Issue: Senior Global Medium-Term Notes, Series G
Trade Date: August 1, 2017
Issue Date: August 4, 2017
Term: Three (3) years
Denominations: Minimum denomination of \$1,000, and integral multiples of \$1,000 thereafter.
Designated Currency: U.S. Dollars

We will pay you a Contingent Coupon during the term of the Notes, periodically in arrears on each Coupon Payment Date, under the conditions described below:

Contingent Coupon: · If the Observation Level of each Reference Asset is greater than or equal to its Coupon Barrier on the applicable Observation Date, we will pay the Contingent Coupon applicable to that Observation Date.
· If the Observation Level of any Reference Asset is less than its Coupon Barrier on the applicable Observation Date, we will not pay you the Contingent Coupon applicable to that Observation Date.
You may not receive a Contingent Coupon for one or more quarterly periods during the term of the Notes.

Contingent Coupon Rate: 8.00% per annum (2.00% per quarter)
Observation Dates: Quarterly on November 1, 2017, February 1, 2018, May 1, 2018, August 1, 2018, November 1, 2018, February 1, 2019, May 1, 2019, August 1, 2019, November 1, 2019, February 3, 2020, May 1, 2020, and the Valuation Date.

Coupon Payment Dates: The Contingent Coupon, if applicable, will be paid quarterly on November 6, 2017, February 6, 2018, May 4, 2018, August 6, 2018, November 6, 2018, February 6, 2019, May 6, 2019, August 6, 2019, November 6, 2019, February 6, 2020, May 6, 2020 and the Maturity Date.

Record Dates: The record date for each Coupon Payment Date will be the date one business day prior to that scheduled Coupon Payment Date; provided, however, that any Contingent Coupon payable at maturity or upon a call will be payable to the person to whom the payment at maturity or upon the call, as the case may be, will be payable.

Call Feature: If, starting on August 1, 2018 and on any Observation Date thereafter, the Observation Level of each Reference Asset is greater than or equal to its Initial Level, then the Notes will be automatically called.

Payment if Called:

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If the Notes are automatically called, then, on the applicable Call Settlement Date, for each \$1,000 principal amount, you will receive \$1,000 plus the Contingent Coupon otherwise due on that Call Settlement Date.

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Call Settlement Dates: If, starting on August 1, 2018, the Notes are called on any Observation Date, the Call Settlement Date will be the Coupon Payment Date corresponding to that Observation Date.

Valuation Date: August 3, 2020

Maturity Date: August 6, 2020

Initial Level: For the XBI, its closing price, and for the SPX, its closing level, on the Trade Date, as specified on the cover page of this pricing supplement.

Final Level: For the XBI, its closing price, and for the SPX, its closing level, on the Valuation Date.

Observation Level: For the XBI, its closing price, and for the SPX, its closing level, on any Observation Date.

Trigger Level and Coupon Barrier: For each Reference Asset, 61.00% of its Initial Level.

If the Notes are not previously called, we will pay you at maturity an amount based on the Final Level of the Lesser Performing Reference Asset:

Payment at Maturity (if not previously called and held to maturity):

- If the Final Level of the Lesser Performing Reference Asset is greater than or equal to its Trigger Level, we will pay you a cash payment equal to the principal amount plus the Contingent Coupon otherwise due on the Maturity Date.
- If the Final Level of the Lesser Performing Reference Asset is less than its Trigger Level, you will receive at maturity, for each \$1,000 in principal amount, a cash payment equal to: \$1,000 + (\$1,000 x Reference Asset Return of the Lesser Performing Reference Asset)

The amount of cash that you receive will be less than your principal amount, if anything, resulting in a loss that is proportionate to the decline of the Lesser Performing Reference Asset from the Trade Date to the Valuation Date. Investors in the Notes could lose some or all of their principal amount if the Final Level of the Lesser Performing Reference Asset below its Trigger Level.

Stock Settlement: Not applicable. Payments on the Notes will be made solely in cash.

Reference Asset Return: With respect to each Reference Asset:
Final Level – Initial Level
 Initial Level

Lesser Performing Reference Asset: The Reference Asset with the largest percentage decrease between its Initial Level and its Final Level.

Market Disruption Events: The occurrence of a market disruption event (or a non-trading day) as to any of the Reference Assets will result in the postponement of an Observation Date or the Valuation Date as to that Reference Asset, as described in the product prospectus supplement, but not to any non-affected Reference Asset.

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 callable pre-paid cash-settled contingent income-bearing derivative contract linked to 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 8, 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.

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Auto-Callable Contingent Coupon Barrier Notes
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Listing: The Notes will not be listed on any securities exchange.
DTC global (including through its indirect participants Euroclear and Clearstream, Luxembourg as
Settlement: described under “Description of Debt Securities—Ownership and Book-Entry Issuance” in the prospectus
dated January 8, 2016).
Terms All of the terms appearing above the item captioned “Secondary Market” on the cover page and pages
Incorporated in P-2 and P-3 of this pricing supplement and the terms appearing under the caption “General Terms of
the Master the Notes” in the product prospectus supplement dated January 8, 2016, as modified by this pricing
Note: supplement.

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ADDITIONAL TERMS OF YOUR NOTES

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

This pricing supplement, together with the documents listed below, contains the terms of the Notes and supersedes all prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours. You should carefully consider, among other things, the matters set forth in “Risk Factors” in the prospectus supplement dated January 8, 2016 and in the product prospectus supplement dated January 8, 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 dated January 8, 2016:

<https://www.sec.gov/Archives/edgar/data/1000275/000114036116047446/form424b5.htm>

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

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HYPOTHETICAL EXAMPLES

The table set out below is included for illustration purposes only. The table illustrates the Payment at Maturity of the Notes (including the final Contingent Coupon, if payable) for a hypothetical range of performance for the Lesser Performing Reference Asset, assuming the following terms and that the Notes are not automatically called prior to maturity:

Trigger Level and Coupon Barrier:	61.00% of the Initial Level of the Lesser Performing Reference Asset
Contingent Coupon Rate:	8.00% per annum (or 2.00% per quarter)
Contingent Coupon Amount:	\$20.00 per quarter
Observation Dates:	Quarterly
Principal Amount:	\$1,000 per Note

We make no representation or warranty as to which of the Reference Assets will be the Lesser Performing Reference Asset. It is possible that the Final Level of each Reference Asset will be less than its Initial Level.

Hypothetical Final Levels of the Lesser Performing Reference Asset, expressed as a percentage of its Initial Level, are shown in the first column on the left. The second column shows the Payment at Maturity for a range of Reference Asset Returns on the Valuation Date. The third column shows the amount of cash to be paid on the Notes per \$1,000 in principal amount. If the Notes are called prior to maturity, the hypothetical examples below will not be relevant, and you will receive on the applicable Coupon Payment Date, for each \$1,000 principal amount, \$1,000 plus the Contingent Coupon otherwise due on the Notes.

Final Level of the Lesser Performing Reference Asset (%)	Payment at Maturity as Percentage of Principal Amount	Cash Payment Amount per \$1,000 in Principal Amount
150.00%	102.00%*	\$1,020.00*
140.00%	102.00%*	\$1,020.00*
130.00%	102.00%*	\$1,020.00*
120.00%	102.00%*	\$1,020.00*
110.00%	102.00%*	\$1,020.00*
100.00%	102.00%*	\$1,020.00*
90.00%	102.00%*	\$1,020.00*
80.00%	102.00%*	\$1,020.00*
70.00%	102.00%*	\$1,020.00*
61.00%	102.00%*	\$1,020.00*
60.99%	60.99%	\$600.99
55.00%	55.00%	\$550.00
50.00%	50.00%	\$500.00
40.00%	40.00%	\$400.00
25.00%	25.00%	\$250.00
0.00%	0.00%	\$0.00

*Including the final Contingent Coupon, if payable.

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Hypothetical Examples of Amounts Payable at Maturity

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

Example 1: The Final Level of the Lesser Performing Reference Asset is 120%, an increase of 20% from its Initial Level. Because the Final Level of the Lesser Performing Reference Asset is greater than its Trigger Level of 61.00%, the investor receives at maturity, in addition to the final Contingent Coupon of \$20.00 otherwise due on the Notes, a cash payment of \$1,000 per Note, despite the 20% appreciation in the value of the Lesser Performing Reference Asset.

Example 2: The Final Level of the Lesser Performing Reference Asset is 90.00%, a decrease of 10% from its Initial Level. Because the Final Level of the Lesser Performing Reference Asset is greater than its Trigger Level of 61.00%, the investor receives at maturity, in addition to the final Contingent Coupon of \$20.00 otherwise due on the Notes, a cash payment of \$1,000 per Note, despite the 10% decline in the value of the Lesser Performing Reference Asset.

Example 3: The Final Level of the Lesser Performing Reference Asset is 50.00% on the Valuation Date, which is less than its Trigger Level of 61.00%. Because the Final Level of the Lesser Performing Reference Asset is less than its Trigger Level, the final Contingent Coupon will not be payable on the Maturity Date, and we will pay only \$500.00 for each \$1,000 in the principal amount of the Notes, calculated as follows:

Principal Amount + (Principal Amount x Reference Asset Return of the Lesser Performing Reference Asset)
= \$1,000 + (\$1,000 x -50.00%) = \$1,000 - \$500.00 = \$500.00

* * *

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

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SELECTED RISK CONSIDERATIONS

An investment in the Notes involves significant risks. Investing in the Notes is not equivalent to investing directly in the Reference Assets. These risks are explained in more detail in the section “Risk Factors” 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 value of the Lesser Performing Reference Asset between the Trade Date and the Valuation Date. If the Notes are not automatically called and the Final Level of the Lesser Performing Reference Asset on the Valuation Date is less than its Trigger Level, the amount of cash that you receive at maturity will represent a loss of your principal that is proportionate to the decline in the closing price or closing level, as applicable, of the Lesser Performing Reference Asset from the Trade Date to the Valuation Date. Any Contingent Coupons received on the Notes prior to the Maturity Date may not be sufficient to compensate for any such loss.

The Notes Are Subject to an Automatic Call — If on any Observation Date (other than the Valuation Date) on or after August 1, 2018, the Observation Level of each Reference Asset is greater than or equal to its Initial Level, then the Notes will be automatically called. If the Notes are automatically called, then, on the applicable Call Settlement Date, for each \$1,000 in principal amount, you will receive \$1,000 plus the Contingent Coupon otherwise due on the applicable Call Settlement Date. You will not receive any Contingent Coupons after the Call Settlement Date. You may be unable to reinvest your proceeds from the automatic call in an investment with a return that is as high as the return on the Notes would have been if they had not been called.

You May Not Receive Any Contingent Coupons — We will not necessarily make any coupon payments on the Notes. If the Observation Level of any of the Reference Assets on an Observation Date is less than its Coupon Barrier, we will not pay you the Contingent Coupon applicable to that Observation Date. If the Observation Level of any of the Reference Assets is less than its Coupon Barrier on each of the Observation Dates and on the Valuation Date, we will not pay you any Contingent Coupons during the term of, and you will not receive a positive return on your Notes. Generally, this non-payment of the Contingent Coupon coincides with a period of greater risk of principal loss on your Notes. Accordingly, if we do not pay the Contingent Coupon on the Maturity Date, you will also incur a loss of principal, because the Final Level of the Lesser Performing Reference Asset will be less than its Trigger Level.

The Notes Are Linked to the Lesser Performing Reference Asset, Even if the Other Reference Assets Perform Better — If any of the Reference Assets has a Final Level that is less than its Trigger Level, your return will be linked to the lesser performing of the three Reference Assets. Even if the Final Levels of the other Reference Assets have increased compared to their respective Initial Levels, or have experienced a decrease that is less than that of the Lesser Performing Reference Asset, your return will only be determined by reference to the performance of the Lesser Performing Reference Asset, regardless of the performance of the other Reference Assets.

Your Payment on the Notes Will Be Determined by Reference to Each Reference Asset Individually, Not to a Basket, and the Payment at Maturity Will Be Based on the Performance of the Lesser Performing Reference Asset — The Payment at Maturity will be determined only by reference to the performance of the Lesser Performing Reference Asset, regardless of the performance of the other Reference Assets. 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 Assets.

Instead, your return will depend solely on the Final Level of the Lesser Performing Reference Asset.

The Call Feature and the Contingent Coupon Feature Limit Your Potential Return — The return potential of the Notes is limited to the pre-specified Contingent Coupon Rate, regardless of the appreciation of the Reference Assets. In addition, the total return on the Notes will vary based on the number of Observation Dates on which the Contingent Coupon becomes payable prior to maturity or an automatic call. Further, if the Notes are called due to the Call Feature, you will not receive any Contingent Coupons or any other payment in respect of any Observation Dates after the applicable Call Settlement Date. Since the Notes could be called as early as August 2018, the total return on the Notes could be limited to one year of Contingent Coupons, none of which are guaranteed. If the Notes are not called, you may be subject to the full downside performance of the Lesser Performing Reference Asset even though your potential return is limited to the Contingent Coupon Rate. As a result, the return on an investment in the Notes could be less than the return on a direct investment in the Reference Assets.

Your Return May Be Lower than the Return on a Conventional Debt Security of Comparable 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. Even if

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your return is positive, 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 any Contingent Coupons, if payable, and the amount due on any relevant payment date is dependent upon Royal Bank's ability to repay its obligations on the applicable payment dates. This will be the case even if the values of the Reference Assets increase after the Trade Date. No assurance can be given as to what our financial condition will be during the term of the Notes.

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

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 prices or 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.

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

Owning the Notes Is Not the Same as Owning the XBI or the Securities Represented by the SPX — The return on your Notes is unlikely to reflect the return you would realize if you actually owned shares of the XBI or the securities represented by the SPX. For instance, you will not receive or be entitled to receive any dividend payments or other distributions on these 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 these securities may have. Furthermore, the Reference Assets may appreciate substantially during the term of the Notes, while your potential return will be limited to the applicable Contingent Coupon payments.

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Prior to Maturity, the Value of the Notes Will Be Influenced by Many Unpredictable Factors — Many economic and market factors will influence the value of the Notes. We expect that, generally, the price or level of each Reference Asset on any day will affect the value of the Notes more than any other single factor. However, you should not expect the value of the Notes in the secondary market to vary in proportion to changes in the value of the Reference Assets. The value of the Notes will be affected by a number of other factors that may either offset or magnify each other, including:

- Øthe market value of the Reference Ass