

ROYAL BANK OF CANADA  
Form 424B2  
February 13, 2018

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

#### Pricing Supplement

Dated February 9, 2018 \$1,486,000

To the Product

Prospectus Supplement Auto-Callable Contingent Coupon Barrier Notes

No. TP-1, the Prospectus Linked to the Lesser Performing of Four Equity

Supplement and the Securities, Due February 12, 2021

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 four equity securities (each, a “Reference Stock” and collectively, the “Reference Stocks”). 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.

Reference Stocks	Initial Stock Prices	Coupon Barriers and Trigger Prices
Amazon.com, Inc. (“AMZN”)	\$1,339.60	\$669.80, which is 50.00% of its Initial Stock Price
Facebook, Inc. (“FB”)	\$176.11	\$88.06, which is 50.00% of its Initial Stock Price*
Alphabet Inc. (“GOOGL”)	\$1,046.27	\$523.14, which is 50.00% of its Initial Stock Price*
Netflix Inc. (“NFLX”)	\$249.47	\$124.74, which is 50.00% of its Initial Stock Price*

\* 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	Stock Exchange Listing:	None
Trade Date:	February 9, 2018	Principal Amount:	\$1,000 per Note
Issue Date:	February 14, 2018	Maturity Date:	February 12, 2021
Observation Dates:	Quarterly, as set forth below.	Coupon Payment Dates:	Quarterly, as set forth below
Valuation Date:	February 9, 2021	Contingent Coupon Rate:	10.60% per annum
Contingent Coupon:	If the closing price of each Reference Stock 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 Stock Price of the Lesser Performing Reference Stock:

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For each \$1,000 in principal amount, \$1,000 plus the Contingent Coupon at maturity, unless the Final Stock Price of the Lesser Performing Reference Stock is less than its Trigger Price.

If the Final Stock Price of the Lesser Performing Reference Stock is less than its Trigger Price, then the investor will receive at maturity, for each \$1,000 in principal amount, a cash payment equal to:

$\$1,000 + (\$1,000 \times \text{Reference Stock Return of the Lesser Performing Reference Stock})$

Investors could lose some or all of their principal amount if the Final Stock Price of the Lesser Performing Reference Stock is below its Trigger Price.

Lesser Performing  
Reference Stock:

The Reference Stock with the lowest Reference Stock Return.

Call Feature:

If the closing price of each Reference Stock is greater than or equal to its Initial Stock Price on any Observation Date on or after August 9, 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.

Final Stock Price:

For each Reference Stock, its closing price on the Valuation Date.

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	Per Note	Total
Price to public <sup>(1)</sup>	100.00%	\$1,486,000.00
Underwriting discounts and commissions <sup>(1)</sup>	2.25%	\$33,435.00
Proceeds to Royal Bank of Canada	97.75%	\$1,452,565.00

<sup>(1)</sup>Certain dealers who purchased the Notes for sale to certain fee-based advisory accounts may have foregone 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 \$977.50 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 \$916.39 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 \$22.50 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 \$22.50 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

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Auto-Callable Contingent Coupon Barrier Notes  
Linked to the Lesser Performing of Four  
Equity Securities, Due February 12, 2021  
Royal Bank of Canada

#### SUMMARY

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

**General:** This pricing supplement relates to an offering of Auto-Callable Contingent Coupon Barrier Notes (the “Notes”) linked to the lesser performing of four equity securities (the “Reference Stocks”).

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

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

**Trade Date:** February 9, 2018

**Issue Date:** February 14, 2018

**Term:** Approximately three (3) years

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

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

**Contingent Coupon:** 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:

- If the closing price of each Reference Stock 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 closing price of any of the Reference Stocks 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:** 10.60% per annum (2.65% per quarter)

**Observation Dates:** Quarterly on May 9, 2018, August 9, 2018, November 9, 2018, February 11, 2019, May 9, 2019, August 9, 2019, November 11, 2019, February 10, 2020, May 11, 2020, August 10, 2020, November 9, 2020 and the Valuation Date.

**Coupon Payment Dates:** The Contingent Coupon, if applicable, will be paid quarterly on May 14, 2018, August 14, 2018, November 15, 2018, February 14, 2019, May 14, 2019, August 14, 2019, November 14, 2019, February 13, 2020, May 14, 2020, August 13, 2020, November 13, 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, on any Observation Date on or after August 9, 2018, the closing price of each Reference Stock is greater than or equal to its Initial Stock Price, then the Notes will be automatically called.

**Payment if Called:** 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.

**Call Settlement Dates:** If the Notes are called on any Observation Date on or after August 9, 2018, the Call Settlement Date will be the Coupon Payment Date corresponding to that Observation Date.

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Valuation Date: February 9, 2021

Maturity Date: February 12, 2021

Initial Stock Price: For each Reference Stock, its closing price on the Trade Date, as specified on the cover page of this pricing supplement.

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Final Stock Price:	For each Reference Stock, its closing price on the Valuation Date.
Trigger Price and Coupon Barrier:	For each Reference Stock, 50.00% of its Initial Stock Price, as specified on the cover page of this pricing supplement.
Payment at Maturity (if not previously called and held to maturity):	<p>If the Notes are not previously called, we will pay you at maturity an amount based on the Final Stock Price of the Lesser Performing Reference Stock:</p> <ul style="list-style-type: none"> <li>· If the Final Stock Price of the Lesser Performing Reference Stock is greater than or equal to its Trigger Price, we will pay you a cash payment equal to the principal amount plus the Contingent Coupon otherwise due on the Maturity Date.</li> <li>· If the Final Stock Price of the Lesser Performing Reference Stock is below its Trigger Price, you will receive at maturity, for each \$1,000 in principal amount, a cash payment equal to:  <math>\\$1,000 + (\\$1,000 \times \text{Reference Stock Return of the Lesser Performing Reference Stock})</math></li> </ul> <p>The amount of cash that you receive will be less than your principal amount, if anything, resulting in a loss that is proportionate to the decline of the Lesser Performing Reference Stock from the Trade Date to the Valuation Date. Investors in the Notes will lose some or all of their principal amount if the Final Stock Price of the Lesser Performing Reference Stock is less than its Trigger Price.</p>
Stock Settlement:	Not applicable. Payments on the Notes will be made solely in cash.
Reference Stock Return:	<p>With respect to each Reference Stock:</p> $\frac{\text{Final Stock Price} - \text{Initial Stock Price}}{\text{Initial Stock Price}}$
Lesser Performing Reference Stock:	The Reference Stock with the lowest Reference Stock Return.
Market Disruption Events: Calculation Agent:	<p>The occurrence of a market disruption event (or a non-trading day) as to any of the Reference Stocks will result in the postponement of an Observation Date or the Valuation Date as to that Reference Stock, as described in the product prospectus supplement, but not to any non-affected Reference Stock.</p> <p>RBC Capital Markets, LLC (“RBCCM”)</p>
U.S. Tax Treatment:	<p>By purchasing a Note, each holder agrees (in the absence of a change in law, an administrative determination or a judicial ruling to the contrary) to treat the Notes as a callable pre-paid cash-settled contingent income-bearing derivative contract linked to the Reference Stocks for U.S. federal income tax purposes. However, the U.S. federal income tax consequences of your investment in the Notes are uncertain and the Internal Revenue Service could assert that the Notes should be taxed in a manner that is different from that described in the preceding sentence. Please see the section below, “Supplemental Discussion of U.S. Federal Income Tax Consequences,” and the discussion (including the opinion of our counsel Morrison &amp; Foerster LLP) in the product prospectus supplement dated January 8, 2016 under “Supplemental Discussion of U.S. Federal Income Tax Consequences,” which apply to the Notes.</p>
Secondary Market:	<p>RBCCM (or one of its affiliates), though not obligated to do so, may maintain a secondary market in the Notes after the Issue Date. The amount that you may receive upon sale of your Notes prior to maturity may be less than the principal amount.</p>

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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 pricing supplement and the terms appearing under the caption “General Terms of the Notes” in the product prospectus supplement dated January 8, 2016, as modified by this pricing supplement.

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Equity Securities, Due February 12, 2021  
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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.

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](http://www.sec.gov) as follows (or if that address has changed, by reviewing our filings for the relevant date on the SEC website):

Prospectus dated January 8, 2016:

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

Prospectus Supplement dated January 8, 2016:

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

Product Prospectus Supplement dated January 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 Stock, assuming the following terms and that the Notes are not automatically called prior to maturity:

Hypothetical Initial Stock Price:	\$100.00*
Hypothetical Trigger Price and Coupon Barrier:	\$50.00, which is 50.00% of the hypothetical Initial Stock Price
Contingent Coupon Rate:	10.60% per annum (or 2.65% per quarter)
Contingent Coupon Amount:	\$26.50 per quarter
Observation Dates:	Quarterly
Principal Amount:	\$1,000 per Note

\* The hypothetical Initial Stock Price of \$100 used in the examples below has been chosen for illustrative purposes only and does not represent the actual Initial Stock Price of any Reference Stock. The actual Initial Stock Price for each Reference Stock is set forth on the cover page of this pricing supplement. We make no representation or warranty as to which of the Reference Stocks will be the Lesser Performing Reference Stock. It is possible that the Final Stock Price of each Reference Stock will be less than its Initial Stock Price.

Hypothetical Final Stock Prices are shown in the first column on the left. The second column shows the Payment at Maturity for a range of Final Stock Prices 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.

Hypothetical Final Stock Price of the Lesser Performing Reference Stock	Payment at Maturity as Percentage of Principal Amount	Cash Payment Amount per \$1,000 in Principal Amount
\$180.00	102.65%*	\$1,026.50*
\$170.00	102.65%*	\$1,026.50*
\$160.00	102.65%*	\$1,026.50*
\$150.00	102.65%*	\$1,026.50*
\$140.00	102.65%*	\$1,026.50*
\$125.00	102.65%*	\$1,026.50*
\$120.00	102.65%*	\$1,026.50*
\$110.00	102.65%*	\$1,026.50*
\$100.00	102.65%*	\$1,026.50*
\$90.00	102.65%*	\$1,026.50*
\$80.00	102.65%*	\$1,026.50*
\$65.00	102.65%*	\$1,026.50*
\$50.00	102.65%*	\$1,026.50*
\$49.99	49.99%	\$499.90
\$45.00	45.00%	\$450.00
\$40.00	40.00%	\$400.00
\$30.00	30.00%	\$300.00
\$20.00	20.00%	\$200.00



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\$10.00	10.00%	\$100.00
\$0.00	0%	\$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 price of the Lesser Performing Reference Stock increases by 25% from the Initial Stock Price of \$100.00 to its Final Stock Price of \$125.00. Because the Final Stock Price of the Lesser Performing Reference Stock is greater than its Trigger Price and Coupon Barrier of \$50.00, the investor receives at maturity, in addition to the final Contingent Coupon of \$26.50 otherwise due on the Notes, a cash payment of \$1,000 per Note, despite the 25% appreciation in the price of the Lesser Performing Reference Stock.

Example 2: The price of the Lesser Performing Reference Stock decreases by 10% from the Initial Stock Price of \$100.00 to its Final Stock Price of \$90.00. Because the Final Stock Price of the Lesser Performing Reference Stock is greater than its Trigger Price and Coupon Barrier of \$50.00, the investor receives at maturity, in addition to the final Contingent Coupon of \$26.50 otherwise due on the Notes, a cash payment of \$1,000 per Note, despite the 10% decline in the price of the Lesser Performing Reference Stock.

Example 3: The price of the Lesser Performing Reference Stock is \$40.00 on the Valuation Date, which is less than its Trigger Price and Coupon Barrier of \$50.00. Because the Final Stock Price of the Lesser Performing Reference Stock is less than its Trigger Price and Coupon Barrier of \$50.00, the final Contingent Coupon will not be payable on the Maturity Date, and we will pay only \$400.00 for each \$1,000 in the principal amount of the Notes, calculated as follows:

Principal Amount + (Principal Amount x Reference Stock Return of the Lesser Performing Reference Stock)  
= \$1,000 + (\$1,000 x -60.00%) = \$1,000 - \$600.00 = \$400.00

\* \* \*

The Payments at Maturity shown above are entirely hypothetical; they are based on prices of the Reference Stocks 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.

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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 Stocks. 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 trading price of the Lesser Performing Reference Stock between the Trade Date and the Valuation Date. If the Notes are not automatically called and the Final Stock Price of the Lesser Performing Reference Stock on the Valuation Date is less than its Trigger Price, 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 of the Lesser Performing Reference Stock 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 on or after August 9, 2018, the closing price of each Reference Stock is greater than or equal to its Initial Stock Price, 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 closing price of any of the Reference Stocks 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 closing price of any of the Reference Stocks 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 Stock Price of the Lesser Performing Reference Stock will be less than its Trigger Price.

**The Notes Are Linked to the Lesser Performing Reference Stock, Even if the Other Reference Stocks Perform Better** — If any of the Reference Stocks has a Final Stock Price that is less than its Trigger Price, your return will be linked to the lesser performing of the four Reference Stocks. Even if the Final Stock Prices of the other Reference Stocks have increased compared to their respective Initial Stock Prices, or have experienced a decrease that is less than that of the Lesser Performing Reference Stock, your return will only be determined by reference to the performance of the Lesser Performing Reference Stock, regardless of the performance of the other Reference Stocks. Because the issuer of each Reference Stock operates in the technology sector, they may each experience simultaneous and significant declines due to adverse conditions in that sector.

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

combined, and the depreciation of one Reference Stock would not be mitigated by any appreciation of the other Reference Stocks. Instead, your return will depend solely on the Final Stock Price of the Lesser Performing Reference Stock.

**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 Stocks. 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 9, 2018, the total return on the Notes could be minimal. If the Notes are not called,

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you may be subject to the full downside performance of the Lesser Performing Reference Stock 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 Stocks.

**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 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 prices of the Reference Stocks 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 of the Reference Stocks, 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.

**Our Business Activities May Create Conflicts of Interest** — We and our affiliates expect to engage in trading activities related to the Reference Stocks that are not for the account of holders of the Notes or on their behalf. These trading activities

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may present a conflict between the holders' interests in the Notes and the interests we and our affiliates will have in their proprietary accounts, in facilitating transactions, including options and other derivatives transactions, for their customers and in accounts under their management. These trading activities, if they influence the share price of the Reference Stocks, could be adverse to the interests of the holders of the Notes. We and one or more of our affiliates may, at present or in the future, engage in business with the issuers of the Reference Stocks, including making loans to or providing advisory services. These services could include investment banking and merger and acquisition advisory services. These activities may present a conflict between our or one or more of our affiliates' obligations and your interests as a holder of the Notes. Moreover, we and our affiliates may have published, and in the future expect to publish, research reports with respect to the Reference Stocks. This research is modified from time to time without notice and may express opinions or provide recommendations that are inconsistent with purchasing or holding the Notes. Any of these activities by us or one or more of our affiliates may affect the share price of the Reference Stocks, and, therefore, the market value of the Notes.

**Owning the Notes Is Not the Same as Owning the Reference Stocks** — The return on your Notes is unlikely to reflect the return you would realize if you actually owned shares of the Reference Stocks. 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 Stocks may appreciate substantially during the term of the Notes, while your potential return will be limited to the applicable Contingent Coupon payments.

**You Must Rely on Your Own Evaluation of the Merits of an Investment Linked to the Reference Stocks** — In the ordinary course of their business, our affiliates may have expressed views on expected movements in the Reference Stocks, and may do so in the future. These views or reports may be communicated to our clients and clients of our affiliates. However, these views are subject to change from time to time. Moreover, other professionals who transact business in markets relating to any Reference Stock may at any time have significantly different views from those of our affiliates. For these reasons, you are encouraged to derive information concerning the Reference Stocks from multiple sources, and you should not rely solely on views expressed by our affiliates.

**There Is No Affiliation Between the Issuers of the Reference Stocks and RBCCM, and RBCCM Is Not Responsible for any Disclosure by the Issuer of the Reference Stock** — We are not affiliated with Amazon.com, Inc., Facebook, Inc., Alphabet Inc. or Netflix Inc. (each, a "Reference Stock Issuer"). However, we and our affiliates may currently, or from time to time in the future engage, in business with any Reference Stock Issuer. Nevertheless, neither we nor our affiliates assume any responsibilities for the accuracy or the completeness of any information that any other company prepares. You, as an investor in the Notes, should make your own investigation into the Reference Stocks.

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Auto-Callable Contingent Coupon Barrier Notes  
Linked to the Lesser Performing of Four  
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#### INFORMATION REGARDING THE REFERENCE STOCK ISSUERS

The Reference Stocks are registered under the Securities Exchange Act of 1934 (the "Exchange Act"). Companies with securities registered under that Act are required to file periodically certain financial and other information specified by the SEC. Information provided to or filed with the SEC can be inspected and copied at the public reference facilities maintained by the SEC or through the SEC's website at [www.sec.gov](http://www.sec.gov). In addition, information regarding the Reference Stocks may be obtained from other sources including, but not limited to, press releases, newspaper articles and other publicly disseminated documents.

The following information regarding the issuers of the Reference Stocks is derived from publicly available information.

We have not independently verified the accuracy or completeness of reports filed by the issuers of the Reference Stocks with the SEC, information published by it on its website or in any other format, information about it obtained from any other source or the information provided below.

We obtained the information regarding the historical performance of the Reference Stocks set forth 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 Reference Stocks should not be taken as an indication of their future performance, and no assurance can be given as to the market prices of any Reference Stock at any time during the term of the Notes. We cannot give you assurance that the performance of any Reference Stock will not result in the loss of all or part of your investment.

Amazon.com, Inc. ("AMZN")

Amazon.com, Inc. is an online retailer that offers a wide range of products, including: books, music, videotapes, computers, electronics, home and garden, and numerous other products. The company offers personalized shopping services, web-based credit card payment, and direct shipping to customers.

The company's common stock is listed on the Nasdaq Global Select Market under the ticker symbol "AMZN."

Facebook, Inc. ("FB")

Facebook, Inc. operates a social networking website. The company's website allows people to communicate with their family, friends, and co-workers. The company develops technologies that facilitate the sharing of information, photographs, website links, and videos.

The company's Class A common stock is listed on the Nasdaq Global Select Market under the ticker symbol "FB."

Alphabet Inc. ("GOOGL")

Alphabet, Inc. operates as a holding company and is the parent company of Google Inc. ("Google"), The company, through its subsidiaries, provides web-based search, advertisements, maps, software applications, mobile operating systems, consumer content, enterprise solutions, commerce, and hardware products.

The company's Class A common stock is listed on the Nasdaq Global Select Market under the ticker symbol "GOOGL."

Netflix Inc. ("NFLX")

Netflix Inc. is an online movie rental service. The company ships DVDs with no due dates or late fees, directly to the subscriber's address. Netflix also provides background information on DVD releases, including critic reviews, member reviews and ratings, and personalized movie recommendations.

The company's common stock is listed on the Nasdaq Global Select Market under the ticker symbol "NFLX."

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