



## Pricing Supplement

Dated January 26, 2024

To the Product Prospectus Supplement ERN-EI-1, Prospectus Supplement and Prospectus, Each Dated December 20, 2023

Buffered Enhanced Return Notes  
Each Linked to a Different Index,  
Due July 31, 2025  
Royal Bank of Canada

Royal Bank of Canada is offering three different Buffered Enhanced Return Notes (the "Notes"). Each of the Notes is linked to the performance of a different equity index (each, a "Reference Asset"). You may participate in one or more of the offerings. The performance of each of the Notes will not depend upon the performance of the other issuances of the Notes.

Reference Asset and Symbol	CUSIP	Initial Level	Buffer Level*	Maximum Redemption Amount	Initial Estimated Value (per \$1,000 in principal amount)
S&P 500® Index ("SPX")	78017FAW3	4,890.97	4,401.87, which is 90% of the Initial Level	113%	\$972.56
Nasdaq- 100 Index® ("NDX")	78017FAX1	17,421.01	15,678.91, which is 90% of the Initial Level	115.50%	\$968.57
Russell 2000® Index ("RTY")	78017FAY9	1,978.331	1,780.498, which is 90% of the Initial Level	117%	\$966.53

\* Rounded to two decimal places in the case of the SPX and NDX, and three decimal places in the case of the RTY.

- If the Final Level of the applicable Reference Asset is greater than its Initial Level, each of the Notes will pay at maturity a return equal to 200% of the Percentage Change, subject to the applicable Maximum Redemption Amount of the principal amount of the Notes.
- If the Final Level of the applicable Reference Asset is less than or equal to its Initial Level, but is greater than or equal to its Buffer Level, investors will receive the principal amount at maturity.
- If the Final Level of the applicable Reference Asset is less than its Buffer Level, investors will lose 1% of the principal amount of the applicable Notes for each 1% that the applicable Final Level has decreased by more than 10% from its Initial Level.
- Any payments on the Notes are subject to our credit risk.
- The Notes do not pay interest.
- The Notes will not be listed on any securities exchange.

Issue Date: January 31, 2024

Maturity Date: July 31, 2025

**Investing in the Notes involves a number of risks. See "Selected Risk Considerations" beginning on page P-7 of this pricing supplement, "Risk Factors" beginning on page PS-4 of the product prospectus supplement and on page S-3 of the prospectus supplement, each dated December 20, 2023.**

The Notes will not constitute deposits insured by the Canada Deposit Insurance Corporation, the U.S. Federal Deposit Insurance Corporation or any other Canadian or U.S. government agency or instrumentality. The Notes are not subject to conversion into our common shares under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act.

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

	Per SPX Note	Total	Per NDX Note	Total	Per RTY Note	Total
Price to public <sup>(1)</sup>	100.00%	\$1,191,000	100.00%	\$888,000	100.00%	\$501,000
Underwriting discounts and commissions <sup>(1)</sup>	1.763%	\$20,993.75	1.771%	\$15,723.75	1.771%	\$8,875
Proceeds to Royal Bank of Canada	98.237%	\$1,170,006.25	98.229%	\$872,276.25	98.229%	\$492,125

<sup>(1)</sup> We or one of our affiliates may pay varying selling concessions of up to \$20.00 per \$1,000 in principal amount of each of the Notes in connection with the distribution of the Notes to other registered broker dealers. See "Supplemental Plan of Distribution (Conflicts of Interest)" below. 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 \$980.00 and \$1,000 per \$1,000 in principal amount. In addition, RBC Capital Markets, LLC, which we refer to as RBCCM, or one of its affiliates may pay a referral fee to a broker-dealer that is not affiliated with us in an amount equal to up to 0.25% of the principal amount of the Notes. See "Supplemental Plan of Distribution (Conflicts of Interest)" below.

The initial estimated value of each of the Notes as of the Trade Date is set forth in the table above for each \$1,000 in principal amount of the applicable Notes, and in each case was less than the price to public. The actual value of each 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.

## 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.*

Issuer:	Royal Bank of Canada (the “Bank”)
Underwriter:	RBC Capital Markets, LLC (“RBCCM”)
Reference Assets:	As set forth on the cover page.
Minimum Investment:	\$1,000 and minimum denominations of \$1,000 in excess thereof
Trade Date (Pricing Date):	January 26, 2024
Issue Date:	January 31, 2024
Valuation Date:	July 28, 2025
Maturity Date:	July 31, 2025, subject to extension for market and other disruptions, as described in the product prospectus supplement dated December 20, 2023.
Payment at Maturity (if held to maturity):	<p>If the Percentage Change for the applicable Notes is <b>positive</b>, then the investor will receive an amount per \$1,000 principal amount per Note equal to the <i>lesser of</i>:</p> <ol style="list-style-type: none"> <li>1. Principal Amount + [Principal Amount x (Percentage Change x Participation Rate)] and</li> <li>2. the Maximum Redemption Amount</li> </ol> <p>If the Percentage Change for the applicable Notes is less than or equal to 0%, but not by more than the Buffer Percentage (that is, the Percentage Change is between 0% and -10%), then the investor will receive the principal amount only.</p> <p>If the Percentage Change for the applicable Notes is <b>negative</b>, by more than the Buffer Percentage (that is, the Percentage Change is less than -10.00%), then the investor will receive a cash payment equal to:</p> $\text{Principal Amount} + [\text{Principal Amount} \times (\text{Percentage Change} + \text{Buffer Percentage})]$ <p>You could lose a substantial portion of the principal amount if the Final Level for the applicable Notes is less than the Initial Level by more than the Buffer Percentage.</p>
Percentage Change:	<p>The Percentage Change for the applicable Reference Asset, expressed as a percentage, is calculated using the following formula:</p> $\frac{\text{Final Level} - \text{Initial Level}}{\text{Initial Level}}$
Maximum Redemption Amount:	A percentage of the principal amount, as set forth on the cover page of this document.
Initial Level:	The closing level of the applicable Reference Asset on the Trade Date, as set forth on the cover page of this pricing supplement.
Final Level:	The closing level of the applicable Reference Asset on the Valuation Date.
Participation Rate:	200%

Buffer Percentage:	10%
Buffer Level:	90% of the Initial Level of the applicable Reference Asset, as set forth on the cover page of this pricing supplement.
Principal at Risk:	<b>The Notes are <i>NOT</i> principal protected. You may lose a substantial portion of your principal amount at maturity if the applicable Final Level is less than the Buffer Level of the applicable Reference Asset.</b>
Calculation Agent:	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 applicable Notes as a pre-paid cash-settled derivative contract 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 Ashurst LLP, our special U.S. tax counsel) in the product prospectus supplement dated December 20, 2023 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 each of the Notes after the issue date. <b>The amount that you may receive upon sale of your Notes prior to maturity may be less than the principal amount of your Notes.</b>
Listing:	The Notes will not be listed on any securities exchange.
Clearance and Settlement:	DTC global (including through its indirect participants Euroclear and Clearstream, Luxembourg as described under “Ownership and Book-Entry Issuance” in the prospectus dated December 20, 2023).
Terms Incorporated in the Master Note:	All of the terms appearing on the cover page and above the item captioned “Secondary Market” in this section and the terms appearing under the caption “General Terms of the Notes” in the product prospectus supplement, as modified by this pricing supplement.

## ADDITIONAL TERMS OF YOUR NOTES

You should read this pricing supplement together with the prospectus dated December 20, 2023, as supplemented by the prospectus supplement and the product prospectus supplement, each dated December 20, 2023, relating to our Senior Global Medium-Term Notes, Series J, of which each of 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 and in the product prospectus supplement, each dated December 20, 2023, 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 December 20, 2023:

<https://www.sec.gov/Archives/edgar/data/1000275/000119312523299520/d645671d424b3.htm>

Prospectus Supplement dated December 20, 2023:

<https://www.sec.gov/Archives/edgar/data/1000275/000119312523299523/d638227d424b3.htm>

Product Prospectus Supplement ERN-EI-1 dated December 20, 2023:

[https://www.sec.gov/Archives/edgar/data/1000275/000114036123058558/ef20016910\\_424b5.htm](https://www.sec.gov/Archives/edgar/data/1000275/000114036123058558/ef20016910_424b5.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.

## HYPOTHETICAL RETURNS

The examples set out below are included for illustration purposes only. The **hypothetical** Percentage Changes of each Reference Asset used to illustrate the calculation of the Payment at Maturity (rounded to two decimal places) are not estimates or forecasts of any Final Level or the level of any Reference Asset on any trading day prior to the Maturity Date. All examples are based on the Buffer Percentage of 10% (the Buffer Level is 90% of the Initial Level), the Participation Rate of 200% and a hypothetical Maximum Redemption Amount of 115% of the principal amount of the Notes, and assume that a holder purchased Notes with an aggregate principal amount of \$1,000 and that no market disruption event occurs on the Valuation Date. The actual Maximum Redemption Amount for each of the Notes is set forth on the cover page of this pricing supplement.

- Example 1 — Calculation of the Payment at Maturity where the Percentage Change is positive.
- Percentage Change: 2%
- Payment at Maturity:  $\$1,000 + [\$1,000 \times (2\% \times 200\%)] = \$1,000 + \$40 = \$1,040$
- On a \$1,000 investment, a 2% Percentage Change results in a Payment at Maturity of \$1,040, a 4% return on the Notes.
- Example 2 — Calculation of the Payment at Maturity where the Percentage Change is positive (and the Payment at Maturity is subject to the Maximum Redemption Amount).
- Percentage Change: 10%
- Payment at Maturity:  $\$1,000 + [\$1,000 \times (10\% \times 200\%)] = \$1,000 + \$200 = \$1,200$
- However, the hypothetical Maximum Redemption Amount is \$1,150 per \$1,000 in principal amount.
- On a \$1,000 investment, a 10% Percentage Change results in a Payment at Maturity of \$1,150, a 15% return on the Notes.
- Example 3 — Calculation of the Payment at Maturity where the Percentage Change is negative (but not by more than the Buffer Percentage).
- Percentage Change: -8%
- Payment at Maturity: At maturity, if the Percentage Change 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 -8% Percentage Change results in a Payment at Maturity of \$1,000, a 0% return on the Notes.
- Example 4 — Calculation of the Payment at Maturity where the Percentage Change is negative (by more than the Buffer Percentage).
- Percentage Change: -35%
- Payment at Maturity:  $\$1,000 + [\$1,000 \times (-35\% + 10\%)] = \$1,000 - \$250 = \$750$
- On a \$1,000 investment, a -35% Percentage Change results in a Payment at Maturity of \$750, a -25% return on the Notes.

Buffered Enhanced Return Notes  
Each Linked to a Different Equity Index

The table set forth below is included for illustration purposes only. The table illustrates the hypothetical payments at maturity for a hypothetical range of performance for the Reference Asset, based on the Participation Rate of 200%, the Buffer Percentage of 10% and a hypothetical Maximum Redemption Amount of 115% of the principal amount.

Hypothetical Percentage Changes are shown in the first column on the left. The second column shows the corresponding Redemption Amount for these Percentage Changes, expressed as a percentage of the principal amount of the Notes. The third column shows the Redemption Amount to be paid on the Notes per \$1,000 in principal amount.

Hypothetical Percentage Change	Redemption Amount as Percentage of Principal Amount	Redemption Amount per \$1,000 in Principal Amount
40.00%	115.00%	\$1,150.00
30.00%	115.00%	\$1,150.00
20.00%	115.00%	\$1,150.00
10.00%	115.00%	\$1,150.00
7.50%	115.00%	\$1,150.00
5.00%	110.00%	\$1,100.00
2.00%	104.00%	\$1,040.00
0.00%	100.00%	\$1,000.00
-5.00%	100.00%	\$1,000.00
-10.00%	100.00%	\$1,000.00
-20.00%	90.00%	\$900.00
-30.00%	80.00%	\$800.00
-40.00%	70.00%	\$700.00
-50.00%	60.00%	\$600.00
-60.00%	50.00%	\$500.00
-70.00%	40.00%	\$400.00
-80.00%	30.00%	\$300.00
-90.00%	20.00%	\$200.00
-100.00%	10.00%	\$100.00

## SELECTED RISK CONSIDERATIONS

An investment in any of the Notes involves significant risks. Investing in the Notes is not equivalent to investing directly in the applicable Reference Asset. 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:

### Risks Relating to the Terms of the Notes

- **You May Receive Less Than the Principal Amount at Maturity** — Investors in each of the Notes could lose a substantial portion of their principal amount if there is a decline in the level of the applicable Reference Asset. You will lose 1% of the principal amount of your Notes for each 1% that the applicable Final Level is less than the applicable Initial Level by more than 10%.
- **The Notes Do Not Pay Interest and Your Return May Be Lower than the Return on a Conventional Debt Security of Comparable Maturity** — There will be no periodic interest payments on the Notes as there would be on a conventional fixed-rate or floating-rate debt security having the same maturity. The return that you will receive on the Notes, which could be negative, may be less than the return you could earn on other investments. Even if your return is positive, your return may be less than the return you would earn if you purchased one of our conventional senior interest bearing debt securities.
- **Your Potential Payment at Maturity Is Limited** — The Notes will provide less opportunity to participate in the appreciation of the applicable Reference Asset than an investment in a security linked to that Reference Asset providing full participation in the appreciation, because the payment at maturity will not exceed the applicable Maximum Redemption Amount. Accordingly, your return on the Notes may be less than your return would be if you made an investment in a security directly linked to the positive performance of the applicable Reference Asset.
- **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 our senior unsecured debt securities. As a result, your receipt of the applicable amount due on the maturity date for your Notes is dependent upon our ability to repay our obligations at that time. This will be the case even if the level of the applicable Reference Asset increases after the Trade Date. No assurance can be given as to what our financial condition will be at the maturity of the Notes.

### Risks Relating to the Secondary Market for 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 our other affiliates may make a market for one or both of the Notes; however, they are not required to do so. RBCCM or any of our other affiliates may stop any market-making activities at any time. Even if a secondary market for any of 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.

### Risks Relating to the Initial Estimated Value of the Notes

- **The Initial Estimated Value of the Notes Is Less than the Price to the Public** — The initial estimated value of each of the Notes that is 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 level of the applicable Reference Asset, the borrowing rate we pay to issue securities of this kind, and the inclusion in



the price to the public of the underwriting discount, the referral fee 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, the referral fee or hedging costs relating to the Notes. In addition to bid-ask spreads, the value of the Notes determined 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 Each of the Notes that Is Set Forth 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 each 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 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 each 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.

#### **Risks Relating to Conflicts of Interest and Our Trading Activities**

- **Our Business Activities May Create Conflicts of Interest** — We and our affiliates expect to engage in trading activities related to the applicable Reference Asset that are not for the account of holders of the Notes or on their behalf. These trading activities 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 level of the applicable Reference Asset, 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 companies included in the applicable Reference Asset, 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 one or more of the Reference Assets. 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 applicable Notes. Any of these activities by us or one or more of our affiliates may affect the level of one or more of the Reference Assets, and, therefore, the market value of the applicable Notes.

#### **Risks Relating to the Reference Assets**

- **You Will Not Have Any Rights to the Securities Included in the Applicable Reference Asset** — As a holder of the Notes, you will not have voting rights or rights to receive cash dividends or other distributions or other rights that holders of securities included in the applicable Reference Asset would have. The Final Level for your Notes will not reflect any dividends paid on the securities included in the applicable Reference Asset, and accordingly, any positive return on any of the Notes may be less than the potential positive return on those securities.



- **The Payments on the Notes Are Subject to Postponement Due to Market Disruption Events and Adjustments** — The payment at maturity and the Valuation Date for each of the Notes 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.
- **An Investment in the Notes Linked to the NDX Is Subject to Risks Relating to Non-U.S. Securities Markets** — Because certain securities included in the NDX are issued by non-U.S. issuers and/or are traded outside of the U.S., an investment in the Notes involves particular risks. For example, the relevant 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.
- **An Investment in the Notes Linked to the RTY Is Subject to Risks Associated in Investing in Stocks With a Small Market Capitalization** — The RTY Index consists of stocks issued by companies with relatively small market capitalizations. These companies often have greater stock price volatility, lower trading volume and less liquidity than large-capitalization companies. As a result, the level of the RTY may be more volatile than that of a market measure that does not track solely small-capitalization stocks. Stock prices of small-capitalization companies are also generally more vulnerable than those of large-capitalization companies to adverse business and economic developments, and the stocks of small-capitalization companies may be thinly traded, and be less attractive to many investors if they do not pay dividends. In addition, small capitalization companies are often less well-established and less stable financially than large-capitalization companies and may depend on a small number of key personnel, making them more vulnerable to loss of those individuals. Small capitalization companies tend to have lower revenues, less diverse product lines, smaller shares of their target markets, fewer financial resources and fewer competitive strengths than large-capitalization companies. These companies may also be more susceptible to adverse developments related to their products or services.

## INFORMATION REGARDING THE REFERENCE ASSETS

All disclosures contained in this document 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. No index sponsor has any 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 any Reference Asset or any successor index.

### The S&P 500® Index ("SPX")

The SPX is intended to provide an indication of the pattern of price movements among U.S. large capitalization stocks. 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 payments on the Notes.

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.

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

Group Inc. and its affiliates may trade financial products which are linked to the performance of the SPX. It is possible that this trading activity will affect the value of the Notes.

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

#### **Nasdaq-100 Index® (“NDX”)**

The Nasdaq-100 Index® is a modified market capitalization-weighted index of the 100 largest stocks of both U.S. and non-U.S. non-financial companies listed on The Nasdaq Stock Market. It does not contain securities of financial companies, including investment companies. The Nasdaq-100 Index®, which includes companies across a variety of major industry groups, was launched on January 31, 1985, with a base index value of 250.00. On January 1, 1994, the base index value was reset to 125.00. The Nasdaq, Inc. (“Nasdaq”) publishes the NDX. Current information regarding the market value of the NDX is available from Nasdaq, as well as numerous market information services.

The share weights of the component securities of the NDX at any time are based upon the total shares outstanding in each of those securities and are additionally subject, in certain cases, to rebalancing. Accordingly, each underlying stock’s influence on the level of the NDX is directly proportional to the value of its share weight.

#### **Index Calculation**

At any moment in time, the level of the NDX equals the aggregate value of the then-current share weights of each of the component securities, which are based on the total shares outstanding of each such component security, multiplied by each such security’s respective last sale price on The Nasdaq Stock Market (which may be the official closing price published by The Nasdaq Stock Market), and divided by a scaling factor (the “divisor”), which becomes the basis for the reported level of the NDX. The divisor serves the purpose of scaling such aggregate value to a lower order of magnitude, which is more desirable for reporting purposes.

#### **Underlying Stock Eligibility Criteria and Annual Ranking Review**

##### Initial Eligibility Criteria

To be eligible for initial inclusion in the NDX, a security must be listed on The Nasdaq Stock Market and meet the following criteria:

- the security’s U.S. listing must be exclusively on the Nasdaq Global Select Market or the Nasdaq Global Market;
- the security must be issued by a non-financial company;
- the security may not be issued by an issuer currently in bankruptcy proceedings;
- the security must generally be a common stock, ordinary share, American Depositary Receipt, or tracking stock (closed-end funds, convertible debentures, exchange traded funds, limited liability companies, limited partnership interests, preferred stocks, rights, shares or units of beneficial interests, warrants, units and other derivative securities are not included in the NDX, nor are the securities of investment companies);
- the security must have a three-month average daily trading volume of at least 200,000 shares;
- if the security is issued by an issuer organized under the laws of a jurisdiction outside the United States, it must have listed options on a recognized market in the United States or be eligible for listed-options trading on a recognized options market in the United States;

- the issuer of the security may not have entered into a definitive agreement or other arrangement which would likely result in the security no longer being eligible;
- the issuer of the security may not have annual financial statements with an audit opinion that is currently withdrawn; and
- the security must have traded for at least three full calendar months, not including the month of initial listing, on an “eligible exchange,” as determined under the index rules. A security that was added to the index as the result of a spin-off event will be exempt from this requirement.

#### Continued Eligibility Criteria

In addition, to be eligible for continued inclusion in the NDX the following criteria apply:

- the security’s U.S. listing must be exclusively on the Nasdaq Global Select Market or the Nasdaq Global Market;
- the security must be issued by a non-financial company;
- the security may not be issued by an issuer currently in bankruptcy proceedings;
- the security must have an average daily trading volume of at least 200,000 shares in the previous three-month trading period as measured annually during the ranking review process described below;
- if the issuer of the security is organized under the laws of a jurisdiction outside the United States, then such security must have listed options on a recognized market in the United States or be eligible for listed-options trading on a recognized options market in the United States, as measured annually during the ranking review process;
- the issuer of the security may not have entered into a definitive agreement or other arrangement that would likely result in the security no longer being eligible;
- the security must have an adjusted market capitalization equal to or exceeding 0.10% of the aggregate adjusted market capitalization of the NDX at each month-end. In the event that a company does not meet this criterion for two consecutive month-ends, it will be removed from the NDX effective after the close of trading on the third Friday of the following month;
- the security that was added to the NDX as the result of a spin-off event has an adjusted market capitalization below 0.10% of the aggregated adjusted market capitalization of the NDX at the end of its second day of regular way trading as an NDX member; and
- the issuer of the security may not have annual financial statements with an audit opinion that is currently withdrawn.

These eligibility criteria may be revised from time to time by Nasdaq without regard to the Notes.

#### **Annual Ranking Review**

The component securities are evaluated on an annual basis (the “Ranking Review”), except under extraordinary circumstances, which may result in an interim evaluation, as follows. Securities that meet the applicable eligibility criteria are ranked by market value. The top 75 eligible securities will be selected for inclusion in the NDX. Any other securities that were already members of the NDX and are ranked within the top 100 (based on market capitalization) are retained in the NDX. In the event that fewer than 100 securities pass the above two criteria, the remaining positions will first be filled, in rank order, by securities currently in the NDX ranked in positions 101-125 that were ranked in the top 100 at the previous Ranking Reviews. The data used in the ranking includes end of October market data and is updated for total shares outstanding submitted in a publicly filed SEC document via EDGAR through the end of November.

Replacements are made effective after the close of trading on the third Friday in December. Moreover, if at any time during the year other than the Ranking Review, a component security is determined by Nasdaq to become ineligible for continued inclusion in the NDX, the security will be replaced with the largest market capitalization security meeting the eligibility criteria listed above and not currently included in the NDX.

#### **Index Maintenance**

In addition to the Ranking Review, the securities in the NDX are monitored every day by Nasdaq with respect to changes in total shares outstanding arising from corporate events, such as stock dividends, stock splits and certain spin-offs and rights issuances. Nasdaq has adopted the following quarterly scheduled weight adjustment procedures with respect to those changes. If the change in total shares outstanding arising from a corporate action is greater than or equal to 10%, that change will be made to the NDX as soon as practical after being sufficiently verified, normally within ten days of such corporate action. Otherwise, if the change in total shares outstanding is

less than 10%, then all such changes are accumulated and made effective at one time on a quarterly basis after the close of trading on the third Friday in each of March, June, September and December.

In either case, the share weights for those component securities are adjusted by the same percentage amount by which the total shares outstanding have changed in those securities. Ordinarily, whenever there is a change in the share weights, a change in a component security, or a change to the price of a component security due to spin-off, rights issuances or special cash dividends, Nasdaq adjusts the divisor to ensure that there is no discontinuity in the level of the NDX that might otherwise be caused by any of those changes. All changes will be announced in advance.

#### **Index Rebalancing**

The NDX is rebalanced on a quarterly basis in March, June, September and December in accordance with Nasdaq's rules. Rebalance changes become effective after the close of trading on the third Friday in March, June, September and December. A special rebalance may be conducted at any time based on specified weighting restrictions if it is determined to be necessary to maintain the integrity of the underlying index.

Ordinarily, new rebalanced weights will be determined by applying the above procedures to the current share weights. However, Nasdaq may from time to time determine rebalanced weights, if necessary, by instead applying the above procedure to the actual current market capitalization of the component securities. In those instances, Nasdaq would announce the different basis for rebalancing prior to its implementation.

#### **License Agreement**

The Notes are not sponsored, endorsed, sold or promoted by Nasdaq, Inc. or its affiliates (collectively, "Nasdaq"). Nasdaq has not passed on the legality or suitability of, or the accuracy or adequacy of descriptions and disclosures relating to, the Notes. Nasdaq makes no representation or warranty, express or implied to the owners of the Notes, or any member of the public regarding the advisability of investing in securities generally or in the Notes particularly, or the ability of the NDX to track general stock market performance. Nasdaq's only relationship to us is in the licensing of the Nasdaq®, NDX trademarks or service marks, and certain trade names of Nasdaq and the use of the NDX which are determined, composed and calculated by Nasdaq without regard to us or the securities. Nasdaq has no obligation to take the needs of us or the owners of the Notes into consideration in determining, composing or calculating the NDX. Nasdaq is not responsible for and has not participated in the determination of the timing of, prices at, or quantities of the Notes to be issued or in the determination or calculation of the equation by which the Notes are to be converted into cash. Nasdaq has no liability in connection with the administration, marketing or trading of the Notes.

NASDAQ DOES NOT GUARANTEE THE ACCURACY AND/OR UNINTERRUPTED CALCULATION OF THE NDX OR ANY DATA INCLUDED THEREIN. NASDAQ MAKES NO WARRANTY, EXPRESS OR IMPLIED, AS TO RESULTS TO BE OBTAINED BY LICENSEE, OWNERS OF THE NOTES, OR ANY OTHER PERSON OR ENTITY FROM THE USE OF THE NDX OR ANY DATA INCLUDED THEREIN. NASDAQ MAKES NO EXPRESS OR IMPLIED WARRANTIES, AND EXPRESSLY DISCLAIMS ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE WITH RESPECT TO THE NDX OR ANY DATA INCLUDED THEREIN. WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT SHALL NASDAQ HAVE ANY LIABILITY FOR ANY LOST PROFITS OR SPECIAL, INCIDENTAL, PUNITIVE, INDIRECT, OR CONSEQUENTIAL DAMAGES, EVEN IF NOTIFIED OF THE POSSIBILITY OF SUCH DAMAGES. NASDAQ®, NASDAQ 100® AND NASDAQ 100 INDEX® ARE TRADE OR SERVICE MARKS OF NASDAQ AND ARE INCENSED FOR USE BY US. THE NOTES HAVE NOT BEEN PASSED ON BY NASDAQ AS TO THEIR LEGALITY OR SUITABILITY. THE NOTES ARE NOT ISSUED, ENDORSED, SOLD OR PROMOTED BY NASDAQ. NASDAQ MAKES NO WARRANTIES AND BEARS NO LIABILITY WITH RESPECT TO THE NOTES.

#### **Russell 2000® Index ("RTY")**

The RTY was developed by Russell Investments ("Russell") before FTSE International Limited and Russell combined in 2015 to create FTSE Russell, which is wholly owned by London Stock Exchange Group. Russell began dissemination of the RTY (Bloomberg L.P. index symbol "RTY") on January 1, 1984. FTSE Russell calculates and publishes the RTY. The RTY was set to 135 as of the close of business on December 31, 1986. The RTY is designed to track the performance of the small capitalization segment of the U.S. equity market. As a subset of the Russell 3000® Index, the RTY consists of the smallest 2,000 companies included in the Russell 3000® Index. The Russell 3000® Index measures the performance of the largest 3,000 U.S. companies, representing approximately 96% of the investable U.S. equity market. The RTY is determined, comprised, and calculated by FTSE Russell without regard to the Notes.

#### **Selection of Stocks Underlying the RTY**

All companies eligible for inclusion in the RTY must be classified as a U.S. company under FTSE Russell's country-assignment methodology. If a company is incorporated, has a stated headquarters location, and trades in the same country (American Depositary



Receipts and American Depositary Shares are not eligible), then the company is assigned to its country of incorporation. If any of the three factors are not the same, FTSE Russell defines three Home Country Indicators ("HCIs"): country of incorporation, country of headquarters, and country of the most liquid exchange (as defined by a two-year average daily dollar trading volume) from all exchanges within a country. Using the HCIs, FTSE Russell compares the primary location of the company's assets with the three HCIs. If the primary location of its assets matches any of the HCIs, then the company is assigned to the primary location of its assets. If there is insufficient information to determine the country in which the company's assets are primarily located, FTSE Russell will use the country from which the company's revenues are primarily derived for the comparison with the three HCIs in a similar manner. FTSE Russell uses the average of two years of assets or revenues data to reduce potential turnover. If conclusive country details cannot be derived from assets or revenues data, FTSE Russell will assign the company to the country of its headquarters, which is defined as the address of the company's principal executive offices, unless that country is a Benefit Driven Incorporation "BDI" country, in which case the company will be assigned to the country of its most liquid stock exchange. BDI countries include: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bonaire, British Virgin Islands, Cayman Islands, Channel Islands, Cook Islands, Curacao, Faroe Islands, Gibraltar, Guernsey, Isle of Man, Jersey, Liberia, Marshall Islands, Panama, Saba, Sint Eustatius, Sint Maarten, and Turks and Caicos Islands. For any companies incorporated or headquartered in a U.S. territory, including Puerto Rico, Guam, and U.S. Virgin Islands, a U.S. HCI is assigned. "N-shares" of companies controlled by individuals or entities in mainland China are not eligible for inclusion.

All securities eligible for inclusion in the RTY must trade on a major U.S. exchange. Stocks must have a closing price at or above \$1.00 on their primary exchange on the "rank day" (typically the last trading day in May, but a confirmed timetable is announced each spring) to be eligible for inclusion during annual reconstitution. However, in order to reduce unnecessary turnover, if an existing member's closing price is less than \$1.00 on the rank day, it will be considered eligible if the average of the daily closing prices (from its primary exchange) during the 30 days prior to the rank date is equal to or greater than \$1.00. Initial public offerings are added each quarter and must have a closing price at or above \$1.00 on the last day of their eligibility period in order to qualify for index inclusion. If an existing stock does not trade on the rank day but does have a closing price at or above \$1.00 on another eligible U.S. exchange, that stock will be eligible for inclusion.

An important criterion used to determine the list of securities eligible for the RTY is total market capitalization, which is defined as the market price as of the rank day in May for those securities being considered at annual reconstitution times the total number of shares outstanding. Where applicable, common stock, non-restricted exchangeable shares and partnership units/membership interests are used to determine market capitalization. Any other form of shares such as preferred stock, convertible preferred stock, redeemable shares, participating preferred stock, warrants, rights, installment receipts or trust receipts, are excluded from the calculation. If multiple share classes of common stock exist, they are combined to determine total shares outstanding. In cases where the common stock share classes act independently of each other (e.g., tracking stocks), each class is considered for inclusion separately. If multiple share classes exist, the pricing vehicle will be designated as the share class with the highest two-year trading volume as of the rank day in May.

Companies with a total market capitalization of less than \$30 million are not eligible for the RTY. Similarly, companies with only 5% or less of their shares available in the marketplace are not eligible for the RTY. Royalty trusts, limited liability companies, closed-end investment companies (companies that are required to report Acquired Fund Fees and Expenses, as defined by the SEC, including business development companies), blank check companies, special purpose acquisition companies, and limited partnerships are also ineligible for inclusion. Exchange traded funds and mutual funds are also excluded. Bulletin board, pink sheets, and over-the-counter traded securities are not eligible for inclusion.

Annual reconstitution is a process by which the RTY is completely rebuilt. Based on closing levels of the company's common stock on its primary exchange on the rank day of May of each year, FTSE Russell reconstitutes the composition of the RTY using the then existing market capitalizations of eligible companies. Reconstitution of the RTY occurs on the fourth Friday in June. In addition, FTSE Russell adds initial public offerings to the RTY on a quarterly basis based on total market capitalization ranking within the market-adjusted capitalization breaks established during the most recent reconstitution.

After membership is determined, a security's shares are adjusted to include only those shares available to the public. This is often referred to as "free float." The purpose of the adjustment is to exclude from market calculations the capitalization that is not available for purchase and is not part of the investable opportunity set.

#### **License Agreement**

FTSE Russell and the Bank have entered into a non-exclusive license agreement providing for the license to the Bank, and certain of its affiliates, in exchange for a fee, of the right to use indices owned and published by FTSE Russell in connection with some securities, including the Notes. The license agreement provides that the following language must be stated in this pricing supplement.



Buffered Enhanced Return Notes  
Each Linked to a Different Equity Index

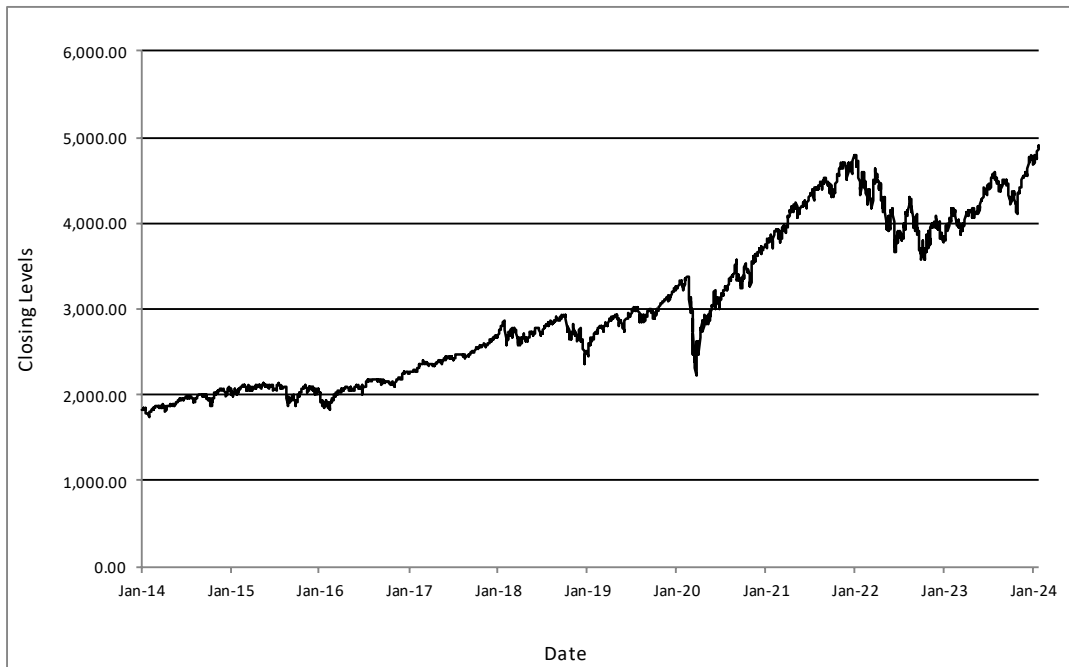
FTSE Russell does not guarantee the accuracy and/or the completeness of the RTY or any data included in the RTY and has no liability for any errors, omissions, or interruptions in the RTY. FTSE Russell makes no warranty, express or implied, as to results to be obtained by the calculation agent, holders of the Notes, or any other person or entity from the use of the RTY or any data included in the RTY in connection with the rights licensed under the license agreement described in this document or for any other use. FTSE Russell makes no express or implied warranties, and hereby expressly disclaims all warranties of merchantability or fitness for a particular purpose with respect to the RTY or any data included in the RTY. Without limiting any of the above information, in no event will FTSE Russell have any liability for any special, punitive, indirect or consequential damages, including lost profits, even if notified of the possibility of these damages.

The Notes are not sponsored, endorsed, sold or promoted by FTSE Russell. FTSE Russell makes no representation or warranty, express or implied, to the owners of the Notes or any member of the public regarding the advisability of investing in securities generally or in the Notes particularly or the ability of the RTY to track general stock market performance or a segment of the same. FTSE Russell's publication of the RTY in no way suggests or implies an opinion by FTSE Russell as to the advisability of investment in any or all of the stocks upon which the RTY is based. FTSE Russell's only relationship to the Bank is the licensing of certain trademarks and trade names of FTSE Russell and of the RTY, which is determined, composed and calculated by FTSE Russell without regard to the Bank or the Notes. FTSE Russell is not responsible for and has not reviewed the Notes nor any associated literature or publications and FTSE Russell makes no representation or warranty express or implied as to their accuracy or completeness, or otherwise. FTSE Russell reserves the right, at any time and without notice, to alter, amend, terminate or in any way change the RTY. FTSE Russell has no obligation or liability in connection with the administration, marketing or trading of the Notes.

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### Historical Information for the SPX

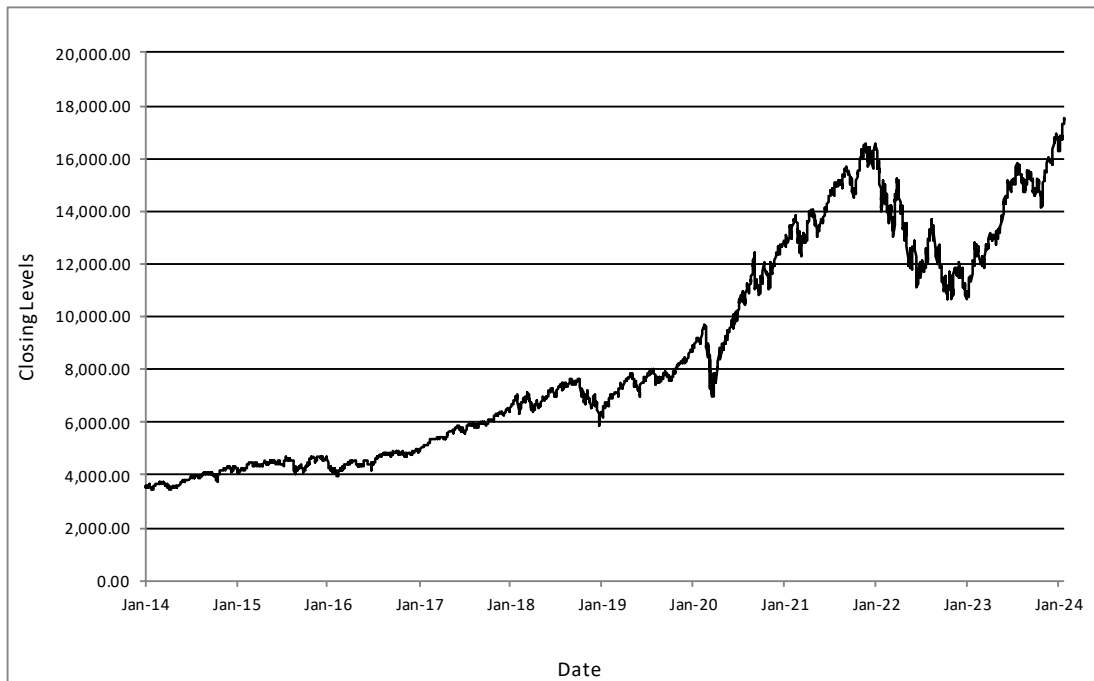
The graph below sets forth the information relating to the historical performance of the SPX for the period from January 1, 2014 through January 26, 2024. We obtained the information in the graph from Bloomberg Financial Markets, without independent verification.



***PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.***

### Historical Information for the NDX

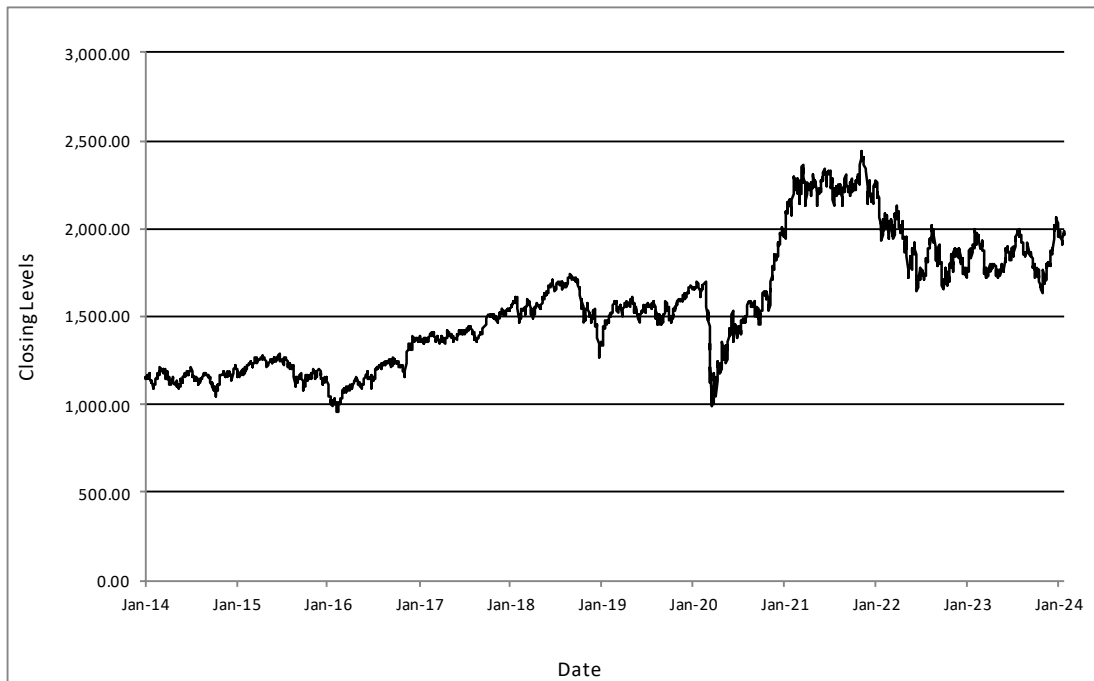
The graph below sets forth the information relating to the historical performance of the NDX for the period from January 1, 2014 through January 26, 2024. We obtained the information in the graph from Bloomberg Financial Markets, without independent verification.



***PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.***

#### Historical Information for the RTY

The graph below sets forth the information relating to the historical performance of the NDX for the period from January 1, 2014 through January 26, 2024. We obtained the information in the graph from Bloomberg Financial Markets, without independent verification.



***PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.***

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

The following disclosure supplements, and to the extent inconsistent supersedes, the discussion in the product prospectus supplement dated December 20, 2023 under “Supplemental Discussion of U.S. Federal Income Tax Consequences.”

Under Section 871(m) of the Code, a “dividend equivalent” payment is treated as a dividend from sources within the United States. Such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-U.S. holder. Under U.S. Treasury Department regulations, payments (including deemed payments) with respect to equity-linked instruments (“ELIs”) that are “specified ELIs” may be treated as dividend equivalents if such specified ELIs reference, directly or indirectly, an interest in an “underlying security,” which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. However, the Internal Revenue Service (the “IRS”) has issued guidance that states that the U.S. Treasury Department and the IRS intend to amend the effective dates of the U.S. Treasury Department regulations to provide that withholding on dividend equivalent payments will not apply to specified ELIs that are not delta-one instruments and that are issued before January 1, 2025. Based on our determination that the Notes are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the Notes. However, it is possible that the Notes could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the applicable Reference Asset or the applicable Notes (for example, upon a Reference Asset rebalancing), and following such occurrence the Notes could be treated as subject to withholding on dividend equivalent payments. Non-U.S. holders that enter, or have entered, into other transactions in respect of the applicable Reference Asset or the Notes should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the Notes and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable withholding agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

## SUPPLEMENTAL PLAN OF DISTRIBUTION (CONFLICTS OF INTEREST)

Delivery of each of the Notes will be made against payment for the Notes on January 31, 2024, which is the third (3rd) business day following the Trade Date (this settlement cycle being referred to as "T+3"). See "Plan of Distribution" in the prospectus dated December 20, 2023. For additional information as to the relationship between us and RBCCM, please see the section "Plan of Distribution—Conflicts of Interest" in the prospectus dated December 20, 2023.

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

In the initial offering of the Notes, they will be offered to investors at a purchase price equal to par, except with respect to certain accounts as indicated on the cover page of this document. In addition to the underwriting discount set forth on the cover page, we or one of our affiliates may also pay a referral fee to a selected dealer in the amount set forth on the cover page of this document. In addition, we or one of our affiliates may also pay an expected fee to a broker-dealer that is unaffiliated with us for providing certain electronic platform services with respect to this offering.

The value of the Notes shown on your account statement may be based on RBCCM's estimate of the value of the applicable Notes if RBCCM or another of our affiliates were to make a market in the Notes (which it is not obligated to do). That estimate will be based upon the price that RBCCM may pay for the applicable Notes in light of then prevailing market conditions, our creditworthiness and transaction costs. For a period of approximately three months after the issue date of the Notes, the value of the Notes that may be shown on your account statement may be higher than RBCCM's estimated value of the applicable Notes at that time. This is because the estimated value of the Notes will not include the underwriting discount, the referral fee or our hedging costs and profits; however, the value of the applicable Notes shown on your account statement during that period may initially be a higher amount, reflecting the addition of RBCCM's underwriting discount, the referral fee and our estimated costs and profits from hedging the Notes. This excess is expected to decrease over time until the end of this period. After this period, if RBCCM repurchases your Notes, it expects to do so at prices that reflect their estimated value.

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

## STRUCTURING THE NOTES

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

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

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

## VALIDITY OF THE NOTES

In the opinion of Norton Rose Fulbright Canada LLP, as Canadian counsel to the Bank, the issue and sale of the Notes has been duly authorized by all necessary corporate action of the Bank in conformity with the Indenture, and when the Notes have been duly executed, authenticated and issued in accordance with the Indenture and delivered against payment therefor, the Notes will be validly issued and, to the extent validity of the Notes is a matter governed by the laws of the Province of Ontario or Québec, or the federal laws of Canada applicable therein, will be valid obligations of the Bank, subject to the following limitations: (i) the enforceability of the Indenture may be limited by the Canada Deposit Insurance Corporation Act (Canada), the Winding-up and Restructuring Act (Canada) and bankruptcy, insolvency, reorganization, receivership, moratorium, arrangement or winding-up laws or other similar laws of general application affecting the enforcement of creditors' rights generally; (ii) the enforceability of the Indenture is subject to general equitable principles, including the principle that the availability of equitable remedies, such as specific performance and injunction, may only be granted at the discretion of a court of competent jurisdiction; (iii) under applicable limitations statutes generally, including that the enforceability of the Indenture will be subject to the limitations contained in the Limitations Act, 2002 (Ontario), and such counsel expresses no opinion as to whether a court may find any provision of the Indenture to be unenforceable as an attempt to vary or exclude a limitation period under such applicable limitations statutes; (iv) rights to indemnity and contribution under the Notes or the Indenture which may be limited by applicable law; and (v) courts in Canada are precluded from giving a judgment in any currency other than the lawful money of Canada and such judgment may be based on a rate of exchange in existence on a day other than the day of payment, as prescribed by the Currency Act (Canada). This opinion is given as of the date hereof and is limited to the laws of the Provinces of Ontario and Québec and the federal laws of Canada applicable therein. In addition, this opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and to such counsel's reliance on the Bank and other sources as to certain factual matters, all as stated in the opinion letter of such counsel dated December 20, 2023, which has been filed as Exhibit 5.3 to the Bank's Form 6-K filed with the SEC dated December 20, 2023.

In the opinion of Ashurst LLP, when the Notes have been duly completed in accordance with the Indenture and issued and sold as contemplated by the prospectus supplement and the prospectus, the Notes will be valid, binding and



enforceable obligations of the Bank, entitled to the benefits of the Indenture, subject to applicable bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and similar laws of general applicability relating to or affecting creditors' rights and subject to general principles of equity, public policy considerations and the discretion of the court before which any suit or proceeding may be brought. This opinion is given as of the date hereof and is limited to the laws of the State of New York. This opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and to such counsel's reliance on the Bank and other sources as to certain factual matters, all as stated in the legal opinion dated December 20, 2023, which has been filed as Exhibit 5.4 to the Bank's Form 6-K dated December 20, 2023.