Registration Statement No. 333-275898
Filed Pursuant to Rule 424(b)(2)

Capital Markets

Pricing Supplement

Pricing Supplement dated April 25, 2025 to the Prospectus dated December 20, 2023, the Prospectus Supplement dated December 20, 2023, the Index Supplement No. SPMKTD-1 dated May 14, 2024 and the Product Supplement No. 1A dated May 16, 2024

$1,083,000
Enhanced Return Notes
Linked to the S&P 500 Market Agility 10 TCA 0.5% Decrement Index,
Due April 28, 2028

Royal Bank of Canada

Royal Bank of Canada is offering Enhanced Return Notes (the "Notes") linked to the performance of the S&P 500 Market Agility 10 TCA 0.5% Decrement Index (the "Underlier").

- **Enhanced Return Potential** — If the Final Underlier Value is greater than the Initial Underlier Value, at maturity, investors will receive a return equal to 105% of the Underlier Return.
- **Return of Principal at Maturity** — If the Final Underlier Value is less than or equal to the Initial Underlier Value, at maturity, investors will receive only the principal amount of their Notes, with no additional return.
- The Notes do not pay interest.
- Any payments on the Notes are subject to our credit risk.
- The Notes will not be listed on any securities exchange.

CUSIP: 78017KZV7

Investing in the Notes involves a number of risks. See "Selected Risk Considerations" beginning on page P-5 of this pricing supplement and "Risk Factors" in the accompanying prospectus, prospectus supplement, index supplement and product supplement.

None of the Securities and Exchange Commission (the "SEC"), any state securities commission or any other regulatory body has approved or disapproved of the Notes or passed upon the adequacy or accuracy of this pricing supplement. Any representation to the contrary is a criminal offense. 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. governmental agency or instrumentality. The Notes are not bail-inable notes and are not subject to conversion into our common shares under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act.

	Per Note	Total
Price to public[(1)]	100.00%	$1,083,000
Underwriting discounts and commissions[(1)]	2.47%	$26,745
Proceeds to Royal Bank of Canada	97.53%	$1,056,255

[(1)] We or one of our affiliates may pay varying selling concessions of up to $25.00 per $1,000 principal amount of Notes in connection with the distribution of the Notes to other registered broker-dealers. Certain dealers who purchase the Notes for sale to certain fee-based advisory accounts may forgo 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 $975.00 and $1,000.00 per $1,000 principal amount of Notes. In addition, we or one of our affiliates may pay a broker-dealer that is not affiliated with us a referral fee of up to $7.50 per $1,000 principal amount of Notes. See "Supplemental Plan of Distribution (Conflicts of Interest)" below.

The initial estimated value of the Notes determined by us as of the Trade Date, which we refer to as the initial estimated value, is $950.00 per $1,000 principal amount of Notes and is less than the public offering price of the Notes. The market 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 the determination of the initial estimated value in more detail below.

KEY TERMS

The information in this "Key Terms" section is qualified by any more detailed information set forth in this pricing supplement and in the accompanying prospectus, prospectus supplement, index supplement and product supplement.

Issuer: Royal Bank of Canada

Underwriter: RBC Capital Markets, LLC ("RBCCM")

Minimum Investment: $1,000 and minimum denominations of $1,000 in excess thereof

Underlier: The S&P 500 Market Agility 10 TCA 0.5% Decrement Index. On each index calculation day, a decrement fee of 0.5% per annum (the "decrement fee") is deducted from the level of the Underlier and funding and transaction costs are deducted from the levels of its sub-indices. See "Selected Risk Considerations—Risks Relating to the Underlier—The Underlier and Its Sub-Indices Are Subject to Deductions That Will Adversely Affect Their Performance" below.

Bloomberg Ticker	Initial Underlier Value[(1)]
SPMKTD	3,476.35

[(1)] The closing value of the Underlier on the Trade Date

Trade Date: April 25, 2025

Issue Date: April 30, 2025

Valuation Date:* April 25, 2028

Maturity Date:* April 28, 2028

Payment at Maturity: Investors will receive on the Maturity Date per $1,000 principal amount of Notes:

- If the Final Underlier Value is ***greater than*** the Initial Underlier Value, an amount equal to:

$$\$1{,}000 + (\$1{,}000 \times \text{Underlier Return} \times \text{Participation Rate})$$

- If the Final Underlier Value is ***less than or equal to*** the Initial Underlier Value: $1,000

All payments on the Notes are subject to our credit risk.

Participation Rate: 105%

Underlier Return: The Underlier Return, expressed as a percentage, is calculated using the following formula:

$$\frac{\text{Final Underlier Value} - \text{Initial Underlier Value}}{\text{Initial Underlier Value}}$$

Final Underlier Value: The closing value of the Underlier on the Valuation Date

Calculation Agent: RBCCM

* Subject to postponement. See "General Terms of the Notes—Postponement of a Determination Date" and "General Terms of the Notes—Postponement of a Payment Date" in the accompanying product 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 dated December 20, 2023, relating to our Senior Global Medium-Term Notes, Series J, of which the Notes are a part, the index supplement no. SPMKTD-1 dated May 14, 2024 and the product supplement no. 1A dated May 16, 2024. This pricing supplement, together with these documents, contains the terms of the Notes and supersedes all other 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, fact sheets, brochures or other educational materials of ours.

We have not authorized anyone to provide any information or to make any representations other than those contained or incorporated by reference in this pricing supplement and the documents listed below. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. These documents are an offer to sell only the Notes offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in each such document is current only as of its date.

If the information in this pricing supplement differs from the information contained in the documents listed below, you should rely on the information in this pricing supplement.

You should carefully consider, among other things, the matters set forth in “Selected Risk Considerations” in this pricing supplement and “Risk Factors” in the documents listed below, as the Notes involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisers before you invest in the Notes.

You may access these documents on the SEC website at www.sec.gov as follows (or if such 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
- Index Supplement No. SPMKTD-1 dated May 14, 2024:
  https://www.sec.gov/Archives/edgar/data/1000275/000114036124025880/ef20029138_424b2.htm
- Product Supplement No. 1A dated May 16, 2024:
  https://www.sec.gov/Archives/edgar/data/1000275/000095010324006777/dp211286_424b2-ps1a.htm

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

HYPOTHETICAL RETURNS

The table and examples set forth below illustrate hypothetical payments at maturity for hypothetical performance of the Underlier, based on the Participation Rate of 105%. The table and examples are only for illustrative purposes and may not show the actual return applicable to investors.

Hypothetical Underlier Return	Payment at Maturity per $1,000 Principal Amount of Notes	Payment at Maturity as Percentage of Principal Amount
50.00%	$1,525.00	152.500%
40.00%	$1,420.00	142.000%
30.00%	$1,315.00	131.500%
20.00%	$1,210.00	121.000%
10.00%	$1,105.00	110.500%
5.00%	$1,052.50	105.250%
2.00%	$1,021.00	102.100%
0.00%	$1,000.00	100.000%
-5.00%	$1,000.00	100.000%
-10.00%	$1,000.00	100.000%
-20.00%	$1,000.00	100.000%
-30.00%	$1,000.00	100.000%
-40.00%	$1,000.00	100.000%
-50.00%	$1,000.00	100.000%
-60.00%	$1,000.00	100.000%
-70.00%	$1,000.00	100.000%
-80.00%	$1,000.00	100.000%
-90.00%	$1,000.00	100.000%
-100.00%	$1,000.00	100.000%

Example 1 — The value of the Underlier increases from the Initial Underlier Value to the Final Underlier Value by 2%.

Underlier Return: 2%

Payment at Maturity: $1,000 + ($1,000 × 2% × 105%) = $1,000 + $21 = $1,021

In this example, the payment at maturity is $1,021 per $1,000 principal amount of Notes, for a return of 2.10%.

Because the Final Underlier Value is greater than the Initial Underlier Value, investors receive a return equal to 105% of the Underlier Return.

Example 2 — The value of the Underlier decreases from the Initial Underlier Value to the Final Underlier Value by 10% (i.e., the Final Underlier Value is below the Initial Underlier Value).

Underlier Return: -10%

Payment at Maturity: $1,000

In this example, the payment at maturity is $1,000 per $1,000 principal amount of Notes, for a return of 0%.

Because the Final Underlier Value is less than the Initial Underlier Value, investors receive only the principal amount of their Notes, with no additional return.

SELECTED RISK CONSIDERATIONS

An investment in the Notes involves significant risks. We urge you to consult your investment, legal, tax, accounting and other advisers before you invest in the Notes. Some of the risks that apply to an investment in the Notes are summarized below, but we urge you to read also the "Risk Factors" sections of the accompanying prospectus, prospectus supplement, index supplement and product supplement. You should not purchase the Notes unless you understand and can bear the risks of investing in the Notes.

Risks Relating to the Terms and Structure of the Notes

- **You May Not Receive a Positive Return on the Principal Amount at Maturity** — If the Final Underlier Value is less than the Initial Underlier Value, you will receive only the principal amount of your Notes, with no additional return.

- **The Notes Do Not Pay Interest, and Your Return on the Notes 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 zero, 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.

- **Payments on the Notes Are Subject to Our Credit Risk, and Market Perceptions about Our Creditworthiness May Adversely Affect the Market Value of the Notes** — The Notes are our senior unsecured debt securities, and your receipt of any amounts due on the Notes is dependent upon our ability to pay our obligations as they come due. If we were to default on our payment obligations, you may not receive any amounts owed to you under the Notes and you could lose your entire investment. In addition, any negative changes in market perceptions about our creditworthiness may adversely affect the market value of the Notes.

- **Any Payment on the Notes Will Be Determined Based on the Closing Values of the Underlier on the Dates Specified** — Any payment on the Notes will be determined based on the closing values of the Underlier on the dates specified. You will not benefit from any more favorable value of the Underlier determined at any other time.

- **You May Be Required to Recognize Taxable Income on the Notes Prior to Maturity** — If you are a U.S. investor in a Note, under the treatment of a Note as a contingent payment debt instrument, you will generally be required to recognize taxable interest income in each year that you hold the Note. In addition, any gain you recognize under the rules applicable to contingent payment debt instruments will generally be treated as ordinary interest income rather than capital gain. You should review carefully the section entitled "United States Federal Income Tax Considerations" herein, in combination with the section entitled "United States Federal Income Tax Considerations" in the accompanying product supplement, and consult your tax adviser regarding the U.S. federal income tax consequences of an investment in the Notes.

Risks Relating to the Initial Estimated Value of the Notes and 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 the Notes; however, they are not required to do so and, if they choose to do so, may stop any market-making activities at any time. Because other dealers are not likely to make a secondary market for the Notes, the price at which you may be able to trade your Notes is likely to depend on the price, if any, at which RBCCM or any of our other affiliates is willing to buy the Notes. Even if a secondary market for the Notes develops, it may not provide enough liquidity to allow you to easily trade or sell the Notes. We expect that transaction costs in any secondary market would be high. As a result, the difference between bid and ask prices for your Notes in any secondary market could be substantial. If you sell your Notes before maturity, you may have to do so at a substantial discount from the price that you paid for them, and as a result, you may suffer significant losses. 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 Is Less Than the Public Offering Price** — The initial estimated value of the Notes is less than the public offering price of the Notes and does not represent a minimum price at which we, RBCCM or any of our other 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 value of the Underlier, the internal funding rate we pay to issue securities of this kind (which is lower than the rate at which we borrow funds by issuing conventional fixed rate debt) and the inclusion in the public offering price of the underwriting discount, the referral fee, our estimated profit 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, our estimated profit or the hedging costs relating to the Notes. In addition, any price at which you may sell the Notes is likely to reflect customary bid-ask spreads for similar trades. In addition to bid-ask spreads, the value of the Notes determined for any secondary market price is expected to be based on a secondary market rate rather than the internal funding rate used to price the Notes and determine the initial estimated value. As a result, the secondary market price will be less than if the internal funding rate were used.

- **The Initial Estimated Value of the Notes Is Only an Estimate, Calculated as of the Trade Date** — 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 internal funding rate (which represents a discount from 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 the Notes.

Risks Relating to Conflicts of Interest and Our Trading Activities

- **Our and Our Affiliates' Business and Trading Activities May Create Conflicts of Interest** — You should make your own independent investigation of the merits of investing in the Notes. Our and our affiliates' economic interests are potentially adverse to your interests as an investor in the Notes due to our and our affiliates' business and trading activities, and we and our affiliates have no obligation to consider your interests in taking any actions that might affect the value of the Notes. Trading by us and our affiliates may adversely affect the value of the Underlier and the market value of the Notes. See "Risk Factors—Risks Relating to Conflicts of Interest" in the accompanying product supplement.

- **RBCCM's Role as Calculation Agent May Create Conflicts of Interest** — As Calculation Agent, our affiliate, RBCCM, will determine any values of the Underlier and make any other determinations necessary to calculate any payments on the Notes. In making these determinations, the Calculation Agent may be required to make discretionary judgments, including those described under "—Risks Relating to the Underlier" below. In making these discretionary judgments, the economic interests of the Calculation Agent are potentially adverse to your interests as an investor in the Notes, and any of these determinations may adversely affect any payments on the Notes. The Calculation Agent will have no obligation to consider your interests as an investor in the Notes in making any determinations with respect to the Notes.

- **RBCCM Coordinated with the Index Sponsor in the Development of the Underlier and Its Sub-Indices** — Our affiliate, RBCCM, coordinated with the index sponsor (as defined below) in the development of the Underlier and its sub-indices. RBCCM had no obligation to consider your interests as an investor in the Notes in connection with that role. The inclusion of the securities or futures contracts in the sub-indices is not an investment recommendation by us or RBCCM of those securities or futures contracts, or indicative of any view that we or RBCCM have regarding those securities or future contracts.

Risks Relating to the Underlier

- **You Will Not Have Any Rights to the Securities or the Futures Contracts Underlying the Sub-indices of the Underlier** — As an investor in the Notes, you will not have voting rights or rights to receive dividends or other distributions or any other rights with respect to the securities or the futures contracts underlying the sub-indices of the Underlier.

- **The Underlier and Its Sub-Indices Are Subject to Deductions That Will Adversely Affect Their Performance** — On each index calculation day, the following fees are deducted in calculating the Underlier and its sub-indices:

    - the decrement fee of 0.5% per annum is deducted from the level of the Underlier;

    - a transaction cost (the "MA Index transaction cost") of 0.01% applied to the change in exposure to the S&P 500 Long/Short Risk Aware Daily Risk Control 10% TCA Excess Return Index (the "equity component") and 0.015% applied to the S&P U.S. Treasury Futures Long/Short Risk Aware Daily Risk Control 10% TCA Excess Return Index (the "fixed income component"), on a basket rebalance date, is deducted from the level of the S&P 500 Market Agility TCA Index (the "MA Index");

    - a synthetic financing fee ("funding cost") at a rate of 0.25% plus the Secured Overnight Financing Rate ("SOFR") applied to the notional exposure to the S&P 500® Total Return Index (the "SPXT") is deducted from the level of the equity component;

    - a transaction cost (the "equity component transaction cost") of 0.01% applied to the change in exposure to the SPXT, from the prior index calculation day to the current index calculation day, is deducted from the level of the equity component; and

    - a transaction cost (the "fixed income component transaction cost") of 0.015% applied to the change in exposure to each Treasury Index (as defined below), from the prior index calculation day to the current index calculation day, is deducted from the level of the fixed income component.

  These deductions will reduce the performance of the Underlier and its sub-indices. The following table provides the negative impact of the MA Index transaction cost, equity component transaction cost and fixed income component transaction cost on the performance of the Underlier based on hypothetical back-tested and historical performance from June 23, 2011 to March 31, 2025. Following that period, these deductions will depend on market conditions and the actual negative impact following that period may be greater, perhaps significantly greater, than the values set forth below.

Deductions	Average Per Annum Cost	Maximum Cost Over Any Annual Period
MA Index transaction cost, equity component transaction cost and fixed income component transaction cost	0.83%	1.17%

  See "—Risks Relating to the S&P 500 Long/Short Risk Aware Daily Risk Control 10% TCA Excess Return Index—The Equity Component Is Subject to a Funding Cost That Will Adversely Affect the Performance of the Equity Component and, Therefore, the Performance of the Underlier" below for additional information about the funding cost.

- **The Underlier Has a Limited Operating History and May Perform in Unanticipated Ways** — The Underlier was launched on February 23, 2024 (the "launch date"). As a result, the Underlier has a very limited operating history. Because the Underlier is of recent origin and limited actual historical performance data exists with respect to it, your investment in the Notes may involve a greater risk than investing in securities linked to an index with a more established record of performance.

The hypothetical back-tested performance data of the Underlier provided in this pricing supplement refers to simulated performance data created by applying the Underlier's calculation methodology to historical levels of the applicable indices and historical prices of the applicable Treasury futures contracts. Such simulated performance data has been produced by the retroactive application of a back-tested methodology in hindsight. Hypothetical back-tested results are neither an indicator nor a guarantee of future results.

- **The Underlier Relies on a Calculation of Realized Volatility to Predict Future Volatility and Thereby to Achieve the Volatility Target of 10%. There Is No Assurance that the Underlier's Method for Calculating Realized Volatility Is the Best Way to Calculate Realized Volatility or a Reliable Way to Predict Future Volatility or to Achieve the Volatility Target** — For the purposes of determining the Underlier's exposure to the MA Index on each index calculation day, the Underlier uses an exponentially weighted measure of realized volatility ("MA Index exponentially weighted volatility") to predict the deviation of returns of the MA Index. There are alternative methods one could use to measure realized volatility or predict future volatility. There is no assurance that using MA Index exponentially weighted volatility is the best way to measure realized volatility or a reliable way to predict future volatility or to achieve the volatility target. For example, an alternative measure of realized volatility may more accurately assess how volatile an asset is, or may better predict future volatility and more consistently achieve the volatility target. In addition, an alternative measure of realized volatility may produce more favorable investment results.

- **There Is No Guarantee that the Underlier Will Achieve the 10% Volatility Target** — The Underlier attempts to maintain the volatility target of 10% by adjusting exposure to the MA Index on a daily basis. The exposure of the Underlier to the MA Index is subject to a maximum exposure of 150%, which may limit the ability of the Underlier to achieve a volatility target of 10%, if achieving that volatility target would require exposure in excess of 150%. Additionally, the applicable measure of realized volatility (i.e., MA Index exponentially weighted volatility) is not necessarily an accurate predictor of future volatility and therefore the actual volatility may differ significantly from the target volatility. For example, the actual volatility may be higher or lower than the volatility target due to rapid moves in the market either intraday and/or overnight, and/or because the applicable measure of realized volatility may not be a reliable signal for future volatility. Therefore, there is no guarantee that the Underlier will achieve the 10% volatility target.

- **There May Be Overexposure to the MA Index When the Level of the MA Index Is Falling or Underexposure to the MA Index When the Level of the MA Index Is Rising** — The Underlier is designed to achieve a volatility target of 10%, subject to a maximum exposure of 150%. If the level of the MA Index is rising and the applicable measure of realized volatility (i.e., MA Index exponentially weighted volatility) is greater than the volatility target of 10%, some of the Underlier's exposure will be moved from the MA Index to the hypothetical non-interest bearing cash position, and the Underlier will experience lower returns than the MA Index. In contrast, if the level of the MA Index is falling and the applicable measure of realized volatility is less than the volatility target of 10%, the Underlier will be exposed to more than 100% of the losses in the MA Index and Index will experience lower returns than the MA Index. Therefore, the volatility target may adversely affect the level of the Underlier.

- **The Underlier's Exposure to the MA Index May Be Rebalanced into a Hypothetical Non-Interest Bearing Cash Position on Any or All Days During the Term of the Notes. The Non-Interest Bearing Cash Position Will Not Earn Interest or a Positive Yield** — The Underlier has a daily rebalancing feature which can result in a rebalancing between the exposure to the MA Index and the hypothetical non-interest bearing cash position. This could have the effect of reducing the Underlier's exposure to the MA Index to less than 100% in an attempt to reduce the volatility to 10%. The minimum exposure is 0%. Therefore, there is no guarantee that the Underlier will not be rebalanced so that the hypothetical non-interest bearing cash position represents a significant portion of the Underlier (up to 100% of the Underlier). In addition, the non-interest bearing cash position will not earn interest or a positive yield, because the Underlier has been designed as an excess return index (i.e., any positive or negative performance of the Underlier is therefore considered to be in excess of the prevailing cash rate). As a result, any rebalancing into a hypothetical non-interest bearing cash position will limit the performance of the Underlier.

- **Any Payment on the Notes May Be Postponed and Adversely Affected by the Occurrence of a Market Disruption Event** — The timing and amount of any payment on the Notes is subject to adjustment upon the occurrence of a market disruption event affecting the Underlier. If a market disruption event persists for a sustained period, the Calculation

Agent may make a determination of the closing value of the Underlier. See "General Terms of the Notes—Indices—Market Disruption Events," "General Terms of the Notes—Postponement of a Determination Date" and "General Terms of the Notes—Postponement of a Payment Date" in the accompanying product supplement.

- **Adjustments to the Underlier or Its Sub-Indices Could Adversely Affect Any Payments on the Notes** — The sponsor of the sub-indices may add, delete, substitute or adjust the securities composing the sub-indices or make other methodological changes to the sub-indices that could affect their performance and the performance of the Underlier. The Calculation Agent will calculate the value to be used as the closing value of the Underlier in the event of certain material changes in, or modifications to, the Underlier. In addition, the sponsor of the Underlier may also discontinue or suspend calculation or publication of the Underlier at any time. Under these circumstances, the Calculation Agent may select a successor index that the Calculation Agent determines to be comparable to the Underlier or, if no successor index is available, the Calculation Agent will determine the value to be used as the closing value of the Underlier. Any of these actions could adversely affect the value of the Underlier and, consequently, the value of the Notes. See "General Terms of the Notes—Indices—Discontinuation of, or Adjustments to, an Index" in the accompanying product supplement.

Risks Relating to the S&P 500 Market Agility TCA Index

- **MA Index Is Subject to a Transaction Cost That Will Adversely Affect Its Performance of and, Therefore, the Performance of the Underlier** — The MA Index is subject to a transaction cost that is calculated and deducted from the level of the MA Index. The transaction cost is equal to 0.01% of the level of the equity component times the absolute value of the incremental change in exposure to the equity component and 0.015% of the level of the fixed income component times the absolute value of the incremental change in exposure to the fixed income component, in each case, from the prior index calculation day to the current index calculation day. The transaction cost will reduce the performance of the MA Index and, therefore, the performance of the Underlier. The MA Index rebalances between the equity component and the fixed index component on a monthly basis, and therefore the transaction cost will be deducted from the MA Index on a monthly basis, when such rebalancing is scheduled to occur. See "—Risks Relating to the Underlier—The Underlier and Its Sub-Indices Are Subject to Deductions That Will Adversely Affect Their Performance" above.

- **The 70/30 Weighting Between the Equity Component and the Fixed Income Component in Respect of the MA Index May Not Be Suitable for All Market Conditions or Objectives** — The MA Index is subject to a monthly rebalancing mechanism between the equity component and the fixed income component to achieve a target weight of 70% with respect to the equity component and 30% with respect to the fixed income component. The choice of target weights may not be appropriate for all market conditions or objectives. For example, it is possible that a different choice of target weights may lead to a better investment outcome for the investor under different market conditions.

- **The MA Index is Rebalanced on a Monthly Basis. Such Rebalancing May Have an Adverse Effect on the Performance of the MA Index and/or May Result in Weighting Between the Equity Component and Fixed Income Component that Diverges Significantly From the 70/30 Weighting in Between Rebalance Days** — The MA Index is subject to a monthly rebalancing mechanism between the equity component and the fixed income component to achieve a target weight of 70% with respect to the equity component and 30% with respect to the fixed income component. Such a rebalancing mechanism may cause an adverse performance impact, if the equity component performance was higher (lower) following a reduction (increase) in exposure to the equity component and similarly, if the fixed income component performance was higher (lower) following a reduction (increase) in exposure to the fixed income component. Additionally, in the event of outperformance of one component over the other between monthly rebalance days, the weighting between components may diverge significantly from the 70/30 weighting, and the MA Index may be significantly more or less diversified between asset classes than on each basket rebalance day.

Risks Relating to the S&P 500 Long/Short Risk Aware Daily Risk Control 10% TCA Excess Return Index

- **Even Though the Title of the Equity Component Includes the Phrase "Risk Control," the Equity Component May Decrease Significantly or Not Increase Significantly Relative to the SPXT** — The equity component is linked to the daily percentage change of the SPXT, subject to a risk control strategy that dynamically increases or decreases

the target weight of the daily percentage change of the SPXT (by changing the number of units of the equity component) in an attempt to achieve a 10% volatility target, subject to a maximum target weight of 150%. The target weight can be greater than, less than or equal to 100%. While the performance of the equity component is taken into account to an extent in determining whether the equity component takes a long or short position, the performance of the equity component is not taken into account when implementing the risk control strategy, and therefore could result in leveraged exposure to the SPXT in a falling stock market or deleveraged exposure to the SPXT in a rising stock market (or, alternatively, could result in leveraged short exposure to the SPXT in a rising stock market or deleveraged short exposure to the SPXT in a falling stock market). Therefore, although the title of the equity component includes the phrase "Risk Control," the equity component may decrease significantly more or increase significantly less than the SPXT and/or may experience higher volatility than the SPXT. Similarly, the Notes are not necessarily less risky than, and will not necessarily have better returns or lower volatility than, any securities that are linked to the SPXT.

- **There Is No Guarantee that the Equity Component Will Achieve the 10% Volatility Target** — The equity component is linked to the daily percentage change of the SPXT, subject to a 10% volatility target. The exposure of the equity component to the daily percentage change of the SPXT is subject to a maximum exposure of 150%, which may limit the ability of the equity component to achieve a volatility target of 10%, if achieving that volatility target would require a leverage factor in excess of 150%. Additionally, historical realized volatility is not necessarily an accurate predictor of future volatility and therefore the actual volatility may differ significantly from the target volatility. For example, the actual volatility may be higher or lower than the target due to rapid moves in the market either intraday and/or overnight and/or because of the choice of method used to calculate the realized volatility of the SPXT. Therefore, there is no guarantee that the equity component will achieve the 10% volatility target.

- **There Is No Assurance that the Method for Calculating the Realized Volatility of the Equity Component for Purpose of the Volatility Targeting Will Be Successful** — For purposes of determining the exposure to the SPXT on each index calculation day, a volatility measure (i.e., daily SPXT volatility) is used to predict the deviation of returns of the SPXT using the two most recent index calculation days of price moves. Out of the various volatility measures, there is no assurance that the chosen measure as it is calculated in respect of the equity component is the most suitable way to measure realized volatility in a given market environment. For example, in a sideways, mean-reverting market, the use of this volatility measure may adversely impact the performance of the equity component as compared to other volatility measures based on longer-term, relatively more stable volatility measures. An alternative volatility method may produce more favorable investment results for the investor.

- **Controlled Volatility Does Not Mean the Equity Component Will Have Lower Volatility than the SPXT —**The equity component employs a risk-control strategy that uses mathematical equations to target 10% volatility. The strategy does not have a goal of achieving lower volatility than the SPXT. In fact, if the daily SPXT volatility is less than the volatility target of 10%, the exposure to the daily percentage change of the SPXT will be increased in an attempt to achieve the volatility target of 10%. Any time the equity component's exposure to the daily percentage change of the SPXT is greater than 100%, the equity component would be more volatile than the SPXT.

- **Because the Equity Component May Include Notional Short Positions, the Notes May Be Subject to Additional Risks** — The equity component takes long or short positions with respect to the SPXT using momentum and volatility indicators. Unlike long positions, short positions are subject to unlimited risk of loss because there is no limit on the appreciation of the value of the relevant asset before the short position is closed. It is possible that the SPXT may appreciate substantially while the equity component is providing notional short exposure to the SPXT, thus resulting in an adverse effect on the level of the equity component and the performance of the Underlier. Moreover, the short exposure to the SPXT may exceed 100% exposure, perhaps significantly, which increases the risk that the equity component will suffer losses, thereby adversely affecting the performance of the Underlier.

- **There May Be Overexposure to the SPXT When the Level of the SPXT Is Falling (or Rising in the Case of a Short Position) or Underexposure to the SPXT When the Level of the SPXT Is Rising (or Falling in the Case of a Short Position)** — The equity component is designed to achieve a volatility target of 10%, subject to a maximum exposure of 150%. For example, if the equity component has taken a long position and the level of the SPXT is rising and the daily SPXT volatility is greater than the volatility target of 10%, some of the equity component's exposure will be moved from the SPXT to the hypothetical non-interest bearing cash position, and the equity component will experience lower returns

than the SPXT. In contrast, if the equity component has taken a long position and the level of the SPXT is falling and the daily SPXT volatility is less than the volatility target of 10%, the equity component will be exposed to more than 100% of the losses in the SPXT and the equity component will experience greater losses than the SPXT. The inverse is true with respect to exposure of greater than or less than 100% when the equity component has taken a short position.

- **The Equity Component's Exposure to the SPXT May Be Rebalanced into a Hypothetical Non-Interest Bearing Cash Position on Any or All Days During the Term of the Notes. The Non-Interest Bearing Cash Position Will Not Earn Interest or a Positive Yield** — The equity component has a daily rebalancing feature which can result in a rebalancing between the exposure to the daily percentage change of the SPXT and the hypothetical non-interest bearing cash position. This could have the effect of reducing the equity component's exposure to the daily percentage change of the SPXT to less than 100% in an attempt to reduce the volatility to 10%. In theory, in the case of extreme volatility, the minimum exposure to the daily percentage change of the SPXT could approach 0%. Therefore, there is no guarantee that the equity component will not be rebalanced so that the hypothetical non-interest bearing cash position represents a significant portion of the equity component (up to 100% of the equity component). In addition, the non-interest bearing cash position will not earn interest or a positive yield. As a result, any rebalancing into a hypothetical non-interest bearing cash position will limit the performance of the equity component.

- **The Equity Component Is Subject to a Funding Cost That Will Adversely Affect the Performance of the Equity Component and, Therefore, the Performance of the Underlier** — The equity component is subject to a funding cost that is calculated and deducted from the level of the equity component on each index calculation day. The funding cost is equal to the funding cost rate times the change in the equity component's exposure to the daily percentage change of the SPXT from the prior index calculation day to the current index calculation day. Currently, the funding cost rate is the sum of 0.25% and SOFR. The funding cost will reduce the performance of the equity component and, therefore, the performance of the Underlier. SOFR has fluctuated significantly over time. For example, on December 31, 2021, SOFR was 0.05%, and on December 29, 2023, SOFR was 5.38%. SOFR in the future could be higher, perhaps significantly higher, than it has been in the past. Any increase in SOFR will increase the adverse effect of the funding cost on the performance of the Underlier.

- **The Equity Component Is Subject to a Transaction Cost That Will Adversely Affect the Performance of the Equity Component and, Therefore, the Performance of the Underlier** — The equity component is subject to a transaction cost that is calculated and deducted from the level of the equity component on each index calculation day. The transaction cost is equal to 0.01% of the level of the SPXT times the absolute value of the incremental exposure of the SPXT from the prior index calculation day to the current index calculation day. The transaction cost will reduce the performance of the equity component and, therefore, the performance of the Underlier. See "—Risks Relating to the Underlier—The Underlier and Its Sub-Indices Are Subject to Deductions That Will Adversely Affect Their Performance" above.

- **The Methodology for Determining the Exposure Direction May Not Be a Reliable Predictor of Whether the Daily Percentage Change of the SPXT Will be Positive or Negative** — The equity component uses momentum and volatility indicators to determine "exposure direction" (i.e., whether the equity component will take a long or short position with respect to the SPXT). The investment thesis for the equity component assumes that these momentum and volatility indicators are useful to predict whether the daily percentage change of the SPXT will be positive or negative. However, these momentum and volatility indicators may not be reliable predictors of the direction of the daily percentage change of the SPXT. Even if these indicators predicted the direction of the daily percentage change of the SPXT in the past, it may not do so again in the future. Additionally, there are multiple ways and time periods over which to measure momentum and volatility and the methods used by the equity component may not be the best indicators to predict the future direction of the daily percentage change of the SPXT. Therefore, the investment thesis for the equity component may be incorrect and the method for determining the exposure direction may not predict the future direction of the daily percentage change of the SPXT at all or as well as alternative momentum indicators. As a result, the exposure direction could adversely affect the performance of the equity component and, consequently, the performance of the Underlier.

Risks Relating to the S&P U.S. Treasury Futures Long/Short Risk Aware Daily Risk Control 10% TCA Excess Return Index

- **Even Though the Title of the Fixed Income Component Includes the Phrase "Risk Control," the Fixed Income Component May Decrease Significantly or Not Increase Significantly Relative to the Treasury Indices** — The fixed income component is linked to the daily percentage changes of the 10-Year Treasury Index and the 2-Year Treasury Index, subject to a risk control strategy that dynamically increases or decreases the target weights of the Treasury Indices in an attempt to achieve a 10% volatility target, subject to a maximum target weight of 150%, with respect to the 10-Year Treasury Index, and a maximum target weight of 300%, with respect to the 2-Year Treasury Index. The target weights can be greater than, less than or equal to 100%. The risk control method could result in leveraged exposure to the 10-Year Treasury Index when the relevant Treasury futures prices are falling or a deleveraged exposure to the 10-Year Treasury Index when relevant Treasury futures prices are rising (or, alternatively, could result in leveraged short exposure to the 2-Year Treasury Index when relevant Treasury futures prices are rising or deleveraged short exposure to the 2-Year Treasury Index when relevant Treasury futures prices are falling). Therefore, although the title of the fixed income component includes the phrase "Risk Control," the fixed income component may decrease significantly more or increase significantly less than the Treasury Indices, and the Notes are not necessarily less risky than, and will not necessarily have better returns than, any securities that are linked to the Treasury Indices.

- **There Is No Guarantee that the Fixed Income Component Will Achieve the 10% Volatility Target** — The fixed income component is linked to the daily percentage changes of the 10-Year Treasury Index and the 2-Year Treasury Index, subject to a 10% volatility target. The exposure of the fixed income component to the daily percentage changes of the 10-Year Treasury Index and the 2-Year Treasury Index is subject to a maximum exposure of 150%, with respect to the 10-Year Treasury Index, and a maximum exposure of 300%, with respect to the 2-Year Treasury Index, which may limit the ability of the fixed income component to achieve a volatility target of 10%, if achieving that volatility target would require a leverage factor in excess of 150%, with respect to the 10-Year Treasury Index, or in excess of 300%, with respect to the 2-Year Treasury Index. Additionally, historical realized volatility is not necessarily an accurate predictor of future volatility and therefore the actual volatility may differ significantly from the target volatility. For example, the actual volatility may be higher or lower than the target due to rapid moves in the market either intraday and/or overnight and/or because of the choice of method used to calculate the realized volatility of the applicable Treasury Index. Therefore, there is no guarantee that the fixed income component will achieve the 10% volatility target.

- **Controlled Volatility Does Not Mean the Fixed Income Component Will Have Lower Volatility than the S&P 10-Year U.S. Treasury Note Futures Excess Return Index (the "10-Year Treasury Index") or the S&P 2-Year U.S. Treasury Note Futures Excess Return Index (the "2-Year Treasury Index" and, together with the 10-Year Treasury Index, each a "Treasury Index")** — The fixed income component employs a risk-control strategy that uses mathematical equations to target 10% volatility. The strategy does not have a goal of achieving lower volatility than the 10-Year Treasury Index or the 2-Year Treasury Index. In fact, if the daily volatility of the relevant Treasury Index is less than the volatility target of 10%, the exposure to the relevant Treasury Index will be increased in an attempt to raise the volatility of the fixed income component to 10%. Any time the exposure to a Treasury Index is greater than 100%, the fixed income component would be more volatile than that Treasury Index.

- **Because the Fixed Income Component May Include Notional Short Positions, the Notes May Be Subject to Additional Risks** — The fixed income component may take short positions with respect to the 2-Year Treasury Index based on the application of momentum and volatility indicators. Unlike long positions, short positions are subject to unlimited risk of loss because there is no limit on the appreciation of the price of the relevant asset before the short position is closed. It is possible that the 2-Year Treasury Index may appreciate substantially while the fixed income component is providing a notional short exposure to the 2-Year Treasury Index, thus resulting in an adverse effect on the level of the fixed income component and the performance of the Underlier. Moreover, the short position may have up to 300% exposure, which increases the risk that the fixed income component will suffer losses, thereby adversely affecting the performance of the Underlier.

- **There May Be Overexposure to a Treasury Index When the Level of a Treasury Index Is Falling (or Rising, in the Case of a Short Position) or Underexposure to a Treasury Index When the Level of a Treasury Index Is Rising (or Falling, in the Case of a Short Position)** — The fixed income component is designed to achieve a volatility target

of 10%, subject to a maximum exposure of 150%, with respect to the 10-Year Treasury Index, and a maximum exposure of 300%, with respect to the 2-Year Treasury Index. For example, if the fixed income component has taken a long position in the 10-Year Treasury Index and the level of such Treasury Index is rising and the daily volatility of such Treasury Index is greater than the volatility target of 10%, some of the fixed income component's exposure will be moved from the Treasury Index to the hypothetical non-interest bearing cash position, and the fixed income component will experience lower returns than the Treasury Index. In contrast, if the fixed income component has taken a long position in the 10-Year Treasury Index and the level of such Treasury Index is falling and the daily volatility of such Treasury Index is less than the volatility target of 10%, the fixed income component will be exposed to more than 100% of the losses in the Treasury Index and the fixed income component will experience lower returns than the Treasury Index. The inverse is true with respect to exposure of greater than or less than 100% when the fixed income component has taken a short position in the 2-Year Treasury Index.

- **The Fixed Income Component's Exposure to the Treasury Indices May Be Rebalanced into a Hypothetical Non-Interest Bearing Cash Position on Any or All Days During the Term of the Notes. The Non-Interest Bearing Cash Position Will Not Earn Interest or a Positive Yield** — The fixed income component has a daily rebalancing feature which can result in a rebalancing between the exposure to the daily exposures of the Treasury Indices and the hypothetical non-interest bearing cash position. This could have the effect of reducing the fixed income component's exposure to the daily percentage changes of the Treasury Indices to less than 100% in an attempt to reduce the volatility to 10%. In theory, in the case of extreme volatility, the minimum exposure to the daily percentage change of a Treasury Index could approach 0%. Therefore, there is no guarantee that the fixed income component will not be rebalanced so that the hypothetical non-interest bearing cash position represents a significant portion of the fixed income component (up to 100% of the fixed income component). In addition, the non-interest bearing cash position will not earn interest or a positive yield. As a result, any rebalancing into a hypothetical non-interest bearing cash position will limit the performance of the fixed income component.

- **The Fixed Income Component Is Subject to a Transaction Cost That Will Adversely Affect the Performance of the Fixed Income Component and, Therefore, the Performance of the Underlier** — The fixed income component is subject to a transaction cost that is calculated and deducted from the level of the fixed income component on each index calculation day. The transaction cost is calculated for each Treasury Index and is equal to 0.015% of the level of the Treasury Index times the absolute value of the change in the number of units of the Treasury Index from the prior index calculation day to the current index calculation day. The transaction cost will reduce the performance of the fixed income component and, therefore, the performance of the Underlier. See "—Risks Relating to the Underlier—The Underlier and Its Sub-Indices Are Subject to Deductions That Will Adversely Affect Their Performance" above.

- **The Methodology for Determining the Exposure Direction May Not Be a Reliable Predictor of Whether the Daily Percentage Change of a Treasury Index Will Be Positive or Negative** — The fixed income component uses a momentum indicator called the "exposure direction" to determine whether the fixed income component's exposure to the daily percentage change of the applicable Treasury Index will be short with respect to the 2-Year Treasury Index or long with respect to the 1-Year Treasury Index. The investment thesis for the fixed income component assumes that the 10-year Treasury yield and 10-year/2-year yield curve momentum indicators are useful to predict the future direction of the daily percentage change of a Treasury Index. However, these indicators may not be reliable predictors of the direction of the daily percentage change of a Treasury Index. Even if these indicators predicted the direction of the daily percentage change of a Treasury Index in the past, they may not do so again in the future. Additionally, there are multiple ways and time periods over which to measure momentum and the method used by the fixed income component may not be the best method to predict the future direction of the daily percentage change of a Treasury Index. Therefore, the investment thesis for the fixed income component may not be correct and the momentum indicators utilized may not predict the future direction of the daily percentage change of a Treasury Index at all or as well as alternative momentum indicators. As a result, the exposure direction could adversely affect the performance of the fixed income component and, consequently, the performance of the Underlier.

Risks Relating to the S&P 10-Year U.S. Treasury Note Futures Excess Return Index and the S&P 2-Year U.S. Treasury Note Futures Excess Return Index

- **The Underlier, Via the Fixed Income Component that Is Part of the MA Index, Is Linked In Part to the Performance of the Treasury Indices, Which Are Comprised of Futures Contracts** — The Underlier is linked in part to the performance of the 10-Year Treasury Index, which is comprised of the nearest maturity 10-year U.S. Treasury futures contract, and the 2-Year Treasury Index, which is comprised of the nearest maturity 2-year U.S. Treasury futures contract. Both underlying contracts are traded on the Chicago Mercantile Exchange ("CME"). On a given day, a "futures price" is the price at which market participants may agree to buy or sell the asset underlying a futures contract in the future, and the "spot price" is the current price of such underlying asset for immediate delivery. A variety of factors can lead to a disparity between the price of a futures contract at a given point in time and the spot price of its underlying asset, such as the expected yields of the Treasury securities that comprise such underlying assets, the implicit financing cost associated with the futures contract and market expectations related to the future price of the futures contract's underlying asset.

  Purchasing a futures contract is similar to borrowing money to buy the underlying asset of such futures contract, because it enables an investor to gain exposure to such underlying asset without having to pay the full cost of such exposure up front, and therefore entails a financing cost. As a result, the Underlier is expected to reflect not only the performance of the Treasury Indices, but also the implicit financing cost of the underlying futures contracts, among other factors. This implicit financing cost will adversely affect the level of the Underlier. Any increase in market interest rates will be expected to further increase this implicit financing cost and will have an adverse effect on the level of the Underlier and, therefore, the value of and return on the Notes.

  The price movement of a futures contract is typically correlated with the movements of the price of its underlying asset, but the correlation is generally imperfect, and price movements in the spot market may not be reflected in the futures market (and vice versa). Accordingly, the Notes may underperform a similar investment that more directly reflects the return on the underlying Treasury securities.

- **Negative Roll Yields Will Adversely Affect the Level of the Treasury Indices Over Time and Therefore the Payment at Maturity** — The 10-Year Treasury Index is linked to the U.S. 10-year U.S. Treasury futures contract and the 2-Year Treasury Index is linked to and the U.S. 2-year Treasury futures contract. Futures contracts normally specify a certain date for cash settlement of a financial future or delivery of the underlying physical commodity for a deliverable future. As the exchange-traded futures contract that comprises a Treasury Index approaches expiration, it is replaced by a similar contract that has a later expiration. Thus, for example, a futures contract purchased and held in September may specify a December expiration. As time passes, the contract expiring in December may be replaced by a contract for delivery in March. This process is referred to as "rolling."

  As a futures contract approaches expiration, its value will generally approach the spot price of its underlying asset because by expiration it will closely represent a contract to buy or sell such underlying asset for immediate delivery. If the market for a futures contract is in "contango," where the price of the futures contract with a later expiration date during a rolling period is higher than the spot price of its underlying asset, then the value of such futures contract would tend to decline over time (assuming the spot price and other relevant factors remain unchanged), because the higher futures price would decline as it approaches the lower spot price by expiration. This negative effect on the futures price is referred to as a negative "carry" or "roll yield" and is realized over the term of such contract. A negative roll yield will adversely affect the level of a Treasury Index over time and therefore the performance of the Underlier. Because of the potential effects of negative roll yields, it is possible for the level of the Underlier to decrease significantly over time.

- **The Treasury Indices Are Excess Return Indices, Not Total Return Indices** — The Treasury Indices are excess return indices, not total return indices. With respect to an index comprised of futures contracts, an "excess return" index reflects the "price yield" generated by a change in the price of the futures contract comprising the index and the "roll yield" that is generated when the first expiring futures contract is rolled into the second expiring futures contract, but it does not include interest earned on collateral that a hypothetical investor must provide to secure its performance under the futures contract. By contrast, a "total return" index, reflects interest earned on a hypothetical fully collateralized contract position, in addition to the price yield and the roll yield.

- **Owning the Notes Is Not the Same as Directly Owning the Treasuries or Futures Contract Directly or Indirectly Tracked by the Treasury Indices** — Your return on the Notes will not reflect the return you would have realized on a direct investment in the futures contracts currently listed for trading on the CME or any of the Treasury securities comprising the Treasury Indices. Therefore, the return on your investment may differ from the return based on the purchase of any futures contracts or Treasury securities that are tracked directly or indirectly by the Treasury Indices.

- **Suspension or Disruptions of Market Trading in Treasuries or Futures Contracts May Adversely Affect the Value of the Notes** — Treasury markets and futures markets are subject to temporary distortions or other disruptions due to various factors, including the lack of liquidity in the markets, the participation of speculators, and government regulation and intervention. In addition, futures markets typically have regulations that limit the amount of fluctuation in some futures contract prices that may occur during a single business day. These limits are generally referred to as "daily price fluctuation limits," and the maximum or minimum price of a contract on any given day as a result of these limits is referred to as a "limit price." Once the limit price has been reached in a particular contract, no trades may be made at a price beyond the limit, or trading may be limited for a specified period of time. Limit prices have the effect of precluding trading in a particular contract or forcing the liquidation of contracts at potentially disadvantageous times or prices. These circumstances could affect the levels of the Treasury Indices and, therefore, could adversely affect the performance of the Underlier.

- **Legal and Regulatory Changes Could Adversely Affect the Return on and Value of the Notes** — Futures contracts are subject to extensive statutes, regulations, and margin requirements, many of which have been subject to recent changes. The Commodity Futures Trading Commission, and the exchanges on which futures contracts trade are authorized to take extraordinary actions in the event of a market emergency, including, for example, the implementation of position limits or higher margin requirements, the establishment of daily limits and the suspension of trading. Furthermore, certain exchanges have regulations that limit the amount of fluctuations in futures contract prices that may occur during a single five-minute trading period. Any legal or regulatory changes could impact the levels of the Treasury Indices, and therefore the performance of the Underlier.

INFORMATION REGARDING THE UNDERLIER

All disclosures contained in this pricing supplement regarding the Underlier, including, without limitation, its make-up, method of calculation, and changes in composition, have been derived from publicly available sources. The information reflects the policies of, and is subject to change by, the index sponsor. The index sponsor has no obligation to continue to publish, and may discontinue publication of, the Underlier. Neither we nor RBCCM accepts any responsibility for the calculation, maintenance or publication of the Underlier or any successor index. Please see "The Index" in the accompanying index supplement for more detailed information.

S&P 500 Market Agility 10 TCA 0.5% Decrement Index

The S&P 500 Market Agility 10 TCA 0.5% Decrement Index (the "Underlier") (Bloomberg symbol: "SPMKTD") measures the performance of the S&P 500 Market Agility TCA Index (the "MA Index"), subject to a 10% volatility target, less a decrement fee of 0.5% per annum. The Underlier was first calculated on February 23, 2024, with a base value of 1,000.00, as of the base date of June 23, 2011.

The Underlier, through its sub-indices, employs a rules-based quantitative investment strategy that tracks a synthetic 70/30 portfolio of equity and fixed income components (rebalanced monthly) and dynamically adjusts both the direction of the exposure of its components (i.e., short or long) and the quantum of exposure to its components based on momentum and volatility observations. The Underlier includes multiple layers of volatility targeting: at the level of the Underlier and at the level of the equity component and fixed income component that together comprise the MA Index. In general, a volatility target will result in exposure to its underlying asset greater than 100% when the applicable measure of realized volatility is below the volatility target and less than 100% when the applicable measure of realized volatility is above the volatility target in an effort to maintain a constant level of volatility, in each case subject to the applicable cap on maximum exposure. In each case, if the exposure is less than 100%, the difference between the exposure and 100% will be allocated to a non-interest bearing cash position, which offers some protection against decreases in the level of the applicable index but does not earn interest or a positive yield.

On each index calculation day, the following fees are deducted: (1) a decrement fee is deducted from the level of the Underlier, (2) a transaction cost based on the change in exposure to the equity component and the fixed income component, on a basket rebalance date, is deducted from the level of the MA Index, (3) a synthetic financing fee ("funding cost") based on the notional exposure to the SPXT is deducted from the level of the equity component, (4) a transaction cost based on the change in exposure to the SPXT, from the prior index calculation day to the current index calculation day, is deducted from the level of the equity component and (5) a transaction cost based on the change in exposure to each Treasury Index, from the prior index calculation day to the current index calculation day, is deducted from the level of the fixed income component. **The decrement fee, the transaction costs and the funding cost will reduce the performance of the Underlier.** See "Selected Risk Considerations—Risks Relating to the Underlier—The Underlier and Its Sub-Indices Are Subject to Deductions That Will Adversely Affect Their Performance" above.

Determining exposure using 10% volatility target: On each index calculation day, the Underlier's exposure to the MA Index is adjusted in an attempt to achieve the volatility target of 10%. Exposure to the MA Index will be greater than 100% (but not more than 150%) when exponentially weighted realized volatility of the MA Index (the "MA Index exponentially weighted volatility") (calculated as described below) is less than the volatility target of 10% and will be less than 100% when such measure of realized volatility is greater than the volatility target of 10%.[1]

The MA Index exponentially weighted volatility used for the volatility targeting is calculated as the greater of two exponentially weighted volatility measures: (1) "short-term volatility" and (2) "long-term volatility."

[1] On each index calculation day, the exposure to the MA Index, as described above, is equal to the volatility target of 10% divided by the realized volatility on the prior index calculation day, subject to a maximum exposure of 150%. For example, if on the prior index calculation day the realized volatility were equal to 8%, the exposure would equal 125% (10% divided by 8%). The equivalent equation is also used for the other volatility targeting described herein.

While both short-term volatility and long-term volatility measure the historical daily percentage changes in the level of the MA Index over the same time period and apply a discount that gradually reduces the significance of a given index calculation day as it moves farther into the past, short-term volatility applies a larger discount than does long-term volatility. As a result, the 10 most recent days account for approximately 50% of the weighting when determining short-term volatility, while the 23 most recent days account for approximately 50% of the weighting when determining long-term volatility.

Calculating the decrement fee: On each index calculation day, the decrement fee is equal to (a) the closing level of the MA Index on the prior index calculation day, times (b) the decrement rate of 0.50%, times (c) the calendar day count fraction between the index calculation day and the prior index calculation day. The decrement fee will reduce the performance of the Underlier.

S&P 500 Market Agility TCA Index

The MA Index measures the performance of a basket consisting of an equity component and a fixed income component that is rebalanced on a monthly basis into a 70% equity/30% fixed income allocation, less a transaction cost subtracted from the level of the MA Index on each monthly rebalancing (as described below). The equity component is the S&P 500 Long/Short Risk Aware Daily Risk Control 10% TCA Excess Return Index (the "equity component") and the fixed income component is the S&P U.S. Treasury Futures Long/Short Risk Aware Daily Risk Control 10% TCA Excess Return Index (the "fixed income component"). The MA Index was first calculated on February 23, 2024, with a base value of 1,000.00, as of the base date of June 23, 2011.

Calculating the transaction cost: On each monthly basket rebalance day, a transaction cost at a rate of 0.01% with respect to the equity component and 0.015% with respect to the fixed income component is deducted from the level of the MA Index based on changes in the number of units of the equity component and the fixed income component. The transaction cost will reduce the performance of the MA Index and, therefore, the performance of the Underlier.

S&P 500 Long/Short Risk Aware Daily Risk Control 10% TCA Excess Return Index

The equity component is linked to the performance of the S&P 500 Total Return Index (the "SPXT") and a non-interest-bearing cash position. The equity component takes either a long or short position with respect to the SPXT using momentum and volatility indicators, and uses volatility observations from intraday high and low levels of the SPXT over the two most recent index calculation days (inclusive of the current index calculation day) to adjust its exposure to the SPXT on a daily basis, with a 10% target volatility, subject to a maximum exposure of 150%. The equity component level is reduced by a funding cost based on the notional exposure to the SPXT and a transaction cost based on the change in exposure to the SPXT. The equity component was first calculated on February 23, 2024, with a base value of 1,000.00 as of the base date of June 23, 2011.

Determining direction (i.e., long or short): The equity component will take a short position with respect to the SPXT if momentum of the SPXT is negative and a measure of short-term volatility of the SPXT is elevated, and otherwise will take a long position with respect to the SPXT. Momentum in the SPXT is deemed to be negative if the closing level of the SPXT on the relevant index calculation day is lower than the closing level of the SPXT on the twentieth prior index calculation day.

Determining exposure using 10% volatility target: On each index calculation day, the equity component's exposure to the SPXT is adjusted in an attempt to achieve the volatility target of 10%. The daily exposure (but not the direction) to the SPXT is determined based on a measure of short-term volatility that is calculated using intraday high and low levels of the SPXT. Exposure to the SPXT will be greater than 100% (but not more than the maximum exposure of 150%) when the realized volatility of the SPXT is less than the volatility target of 10% and will be less than 100% when such measure of realized volatility is greater than the volatility target of 10%.

Calculating the funding cost: On each index calculation day, a funding cost calculated based on the notional exposure to the SPXT is deducted from the level of the equity component. Prior to December 21, 2021, the funding cost rate is equal to USD 3 Month LIBOR. On or after this date, the funding cost rate is the sum of 0.25% and SOFR. The funding cost will reduce the performance of the equity component and, therefore, the performance of the Underlier.

Calculating the transaction cost: On each index calculation day, a transaction cost at a rate of 0.01% is deducted from the level of the equity component based on the incremental change in exposure to the SPXT from the prior index calculation day to the current index calculation day. The transaction cost will reduce the performance of the equity component and, therefore, the performance of the Underlier.

S&P 500 Total Return Index

The SPXT measures the performance of the large-cap segment of the U.S. market. The SPXT is calculated on a total return basis, meaning that the level of the index reflects the value of dividends paid on the index stocks. The SPXT consists of stocks of 500 companies selected to provide a performance benchmark for the U.S. equity markets. The equity component was first calculated on February 23, 2024, with a base value of 1,000.00 as of the base date of June 23, 2011.

S&P U.S. Treasury Futures Long/Short Risk Aware Daily Risk Control 10% TCA Excess Return Index

The fixed income component is linked to the performance of the S&P 10-Year U.S. Treasury Note Futures Excess Return Index (the "10-Year Treasury Index"), the S&P 2-Year U.S. Treasury Note Futures Excess Return Index (the "2-Year Treasury Index" and, together with the 10-Year Treasury Index, each a "Treasury Index") and a non-interest-bearing cash position. On each index calculation day, the fixed income component takes either a long position in the 10-Year Treasury Index or a or short position in the 2-Year Treasury Index using momentum indicators based on the 10-year Treasury yield and the 10-year/2-year yield curve (i.e., 10-year Treasury yield minus the 2-year Treasury yield) and uses volatility observations from intraday high and low levels of each Treasury Index over the most recent two days (inclusive of the current index calculation day) to adjust its exposure to the respective Treasury Index on a daily basis, with a 10% target volatility, subject to a maximum exposure of 150%, with respect to the 10-Year Treasury Index, and a maximum exposure of 300%, with respect to the 2-Year Treasury Index. The fixed income component subtracts a transaction cost (as described below) from the level of the fixed income component. The fixed income component was first calculated on February 23, 2024, with a base value of 1,000.00 as of the base date of March 29, 2011.

Determining direction (i.e., long or short): The fixed income component takes either a long position in the 10-Year Treasury Index or a or short position in the 2-Year Treasury Index using momentum indicators based on the 10-year Treasury yield and the 10-year/2-year yield curve (i.e., 10-year Treasury yield minus the 2-year Treasury yield). Generally, the fixed income component will take a short position in the 2-Year Treasury Index if momentum in the 10-year yield is positive and momentum in the 10-year/2-year yield curve is negative (i.e., trending towards inversion or greater inversion), and will otherwise take a long position in the 10-Year Treasury Index. Momentum in the 10-Year Treasury yield and the 10-year/2-year yield curve is assessed by comparing the change in such values over the most recent five-index calculation day period to the standard deviation (i.e., typical variability) of such changes assessed over the prior twenty index calculation days.

Determining exposure using 10% volatility target: On each index calculation day, the fixed income component's exposure to the relevant Treasury Index is adjusted in an attempt to achieve the volatility target of 10%. The daily exposure (but not the direction) to the relevant Treasury Index is determined based on a measure of short-term volatility that is calculated using intraday high and low levels of the relevant Treasury Index over the most recent two days (inclusive of the current index calculation day). Exposure to the respective Treasury Index will be greater than 100% (but not more than the maximum exposure of 150%, with respect to the 10-Year Treasury Index, or 300%, with respect to the 2-Year Treasury Index) when the realized volatility of the relevant Treasury Index is less than the volatility target of 10%, and will be less than 100% when such measure of realized volatility is greater than the volatility target of 10%.

Calculating the transaction cost: On each index calculation day, a transaction cost at a rate of 0.015% is deducted from the level of the fixed income component based on the incremental change in exposure to each Treasury Index from the prior index calculation day to the current index calculation day. The transaction cost will reduce the performance of the fixed income component and, therefore, the performance of the Underlier.

S&P 10-Year U.S. Treasury Note Futures Excess Return Index and the S&P 2-Year U.S. Treasury Note Futures Excess Return Index

The 10-Year Treasury Index and the 2-Year Treasury Index measure the performance of the nearest maturity U.S. Treasury futures contracts. The 10-Year Treasury Index is comprised of the nearest maturity 10-year U.S. Treasury futures contract, and the 2-Year Treasury Index is comprised of the nearest maturity 2-year U.S. Treasury futures contract. Both underlying contracts are traded on the Chicago Mercantile Exchange. Each Treasury Index is an excess return index, meaning that the level of the index reflects the "price yield" generated by a change in the price of the futures contract comprising the index and the "roll yield" that is generated when the first expiring futures contract is rolled into the second expiring futures contract, but it does not include interest earned on collateral that a hypothetical investor must provide to secure its performance under the futures contract. The 10-Year Treasury Index was first calculated on March 26, 2010, with a base value of 100.00, as of the base date of December 1, 1999 and 2-Year Treasury Index was first calculated on March 26, 2010, with a base value of 100.00, as of the base date of December 1, 1999. **The decrement fee, the transaction costs and the funding cost will reduce the performance of the Underlier.**

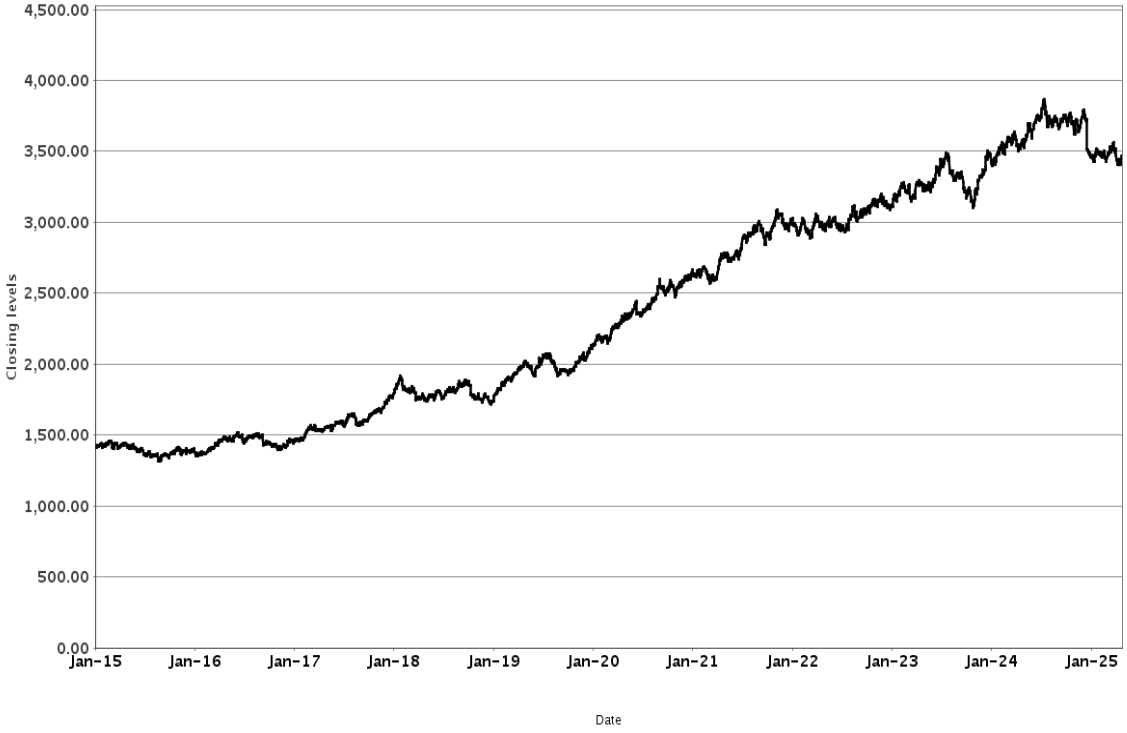
The Underlier, the MA Index, the equity component, the SPXT, the fixed income component, the 10-Year Treasury Index and the 2-Year Treasury Index are sponsored, calculated, published and disseminated by S&P Dow Jones Indices LLC (the "index sponsor"). Additional information regarding these indices, including a more complete description of the index methodology, may be obtained from the S&P website: www.spglobal.com. We are not incorporating by reference in this pricing supplement the index sponsor's website or any material it includes.

Hypothetical Back-Tested and Historical Information

The following graph sets forth hypothetical back-tested and historical closing values of the Underlier for the period from January 1, 2015 to April 25, 2025. The Underlier was launched on February 23, 2024. Accordingly, all closing values for periods prior to the launch date are based on hypothetical back-tested information, utilizing the same methodology as is currently in place for the Underlier. The hypothetical back-tested performance of the Underlier is based on criteria that have been applied retroactively with the benefit of hindsight; these criteria cannot account for all financial risk that may affect the actual performance of the Underlier in the future. The future performance of the Underlier may vary significantly from the hypothetical back-tested and historical performance illustrated in the graph below.

We obtained the information in the graph from Bloomberg Financial Markets, without independent investigation. **We cannot give you assurance that the performance of the Underlier will result in a positive return on your initial investment.**

S&P 500 Market Agility 10 TCA 0.5% Decrement Index



PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS

You should review carefully the section in the accompanying product supplement entitled "United States Federal Income Tax Considerations." The following discussion, when read in combination with that section, constitutes the full opinion of our counsel, Davis Polk & Wardwell LLP, regarding the material U.S. federal income tax consequences of owning and disposing of the Notes.

Generally, this discussion assumes that you purchased the Notes for cash in the original issuance at the stated issue price and does not address other circumstances specific to you, including consequences that may arise due to any other investments relating to the Underlier. You should consult your tax adviser regarding the effect any such circumstances may have on the U.S. federal income tax consequences of your ownership of a Note.

We intend to treat the Notes for U.S. federal income tax purposes as contingent payment debt instruments, or "CPDIs," as described in "United States Federal Income Tax Considerations—Tax Consequences to U.S. Holders—Notes Treated as Debt Instruments—Notes Treated as Contingent Payment Debt Instruments" in the accompanying product supplement. In the opinion of our counsel, which is based on current market conditions, this treatment of the Notes is reasonable under current law. Assuming this treatment is respected, regardless of your method of accounting for U.S. federal income tax purposes, you generally will be required to accrue interest income in each year on a constant yield to maturity basis at the "comparable yield," as determined by us, adjusted upward or downward to reflect the difference, if any, between the actual and projected payments on the Notes during the year. Upon a taxable disposition of a Note, you generally will recognize taxable income or loss equal to the difference between the amount received and your tax basis in the Notes. You generally must treat any income realized as interest income and any loss as ordinary loss to the extent of previous interest inclusions, and the balance as capital loss, the deductibility of which is subject to limitations.

After the original issue date, you may obtain the comparable yield and the projected payment schedule by requesting them from RBCCM at 1-877-688-2301.

Neither the comparable yield nor the projected payment schedule constitutes a representation by us regarding the actual amount(s) that we will pay on the Notes.

Non-U.S. Holders. If you are a Non-U.S. Holder, please also read the section entitled "United States Federal Income Tax Considerations—Tax Consequences to Non-U.S. Holders— Notes Treated as Debt Instruments" in the accompanying product supplement.

As discussed under "United States Federal Income Tax Considerations—Tax Consequences to Non-U.S. Holders—Dividend Equivalents under Section 871(m) of the Code" in the accompanying product supplement, Section 871(m) of the Internal Revenue Code and Treasury regulations promulgated thereunder ("Section 871(m)") generally impose a 30% withholding tax on dividend equivalents paid or deemed paid to Non-U.S. Holders with respect to certain financial instruments linked to U.S. equities or indices that include U.S. equities. The Treasury regulations, as modified by an Internal Revenue Service (the "IRS") notice, exempt financial instruments issued prior to January 1, 2027 that do not have a "delta" of one. Based on certain determinations made by us, our counsel is of the opinion that Section 871(m) should not apply to the Notes with regard to Non-U.S. Holders. Our determination is not binding on the IRS, and the IRS may disagree with this determination.

We will not be required to pay any additional amounts with respect to U.S. federal withholding taxes.

You should consult your tax adviser regarding the U.S. federal income tax consequences of an investment in the Notes, as well as tax consequences arising under the laws of any state, local or non-U.S. taxing jurisdiction.

SUPPLEMENTAL PLAN OF DISTRIBUTION (CONFLICTS OF INTEREST)

The Notes are offered initially to investors at a purchase price equal to par, except with respect to certain accounts as indicated on the cover page of this pricing supplement. We or one of our affiliates may pay the underwriting discount and may pay a broker-dealer that is not affiliated with us a referral fee, in each case as set forth on the cover page of this pricing supplement.

The value of the Notes shown on your account statement may be based on RBCCM's estimate of the value of the Notes if RBCCM or another of our affiliates were to make a market in the Notes (which it is not obligated to do). That estimate will be based on the price that RBCCM may pay for the Notes in light of then-prevailing market conditions, our creditworthiness and transaction costs. For a period of approximately six months after the Issue Date, the value of the Notes that may be shown on your account statement may be higher than RBCCM's estimated value of the Notes at that time. This is because the estimated value of the Notes will not include the underwriting discount, the referral fee or our hedging costs and profits; however, the value of the Notes shown on your account statement during that period may initially be a higher amount, reflecting the addition of the 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.

RBCCM or another of its affiliates or agents may use this pricing supplement in the initial sale 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.***

For additional information about the settlement cycle of the Notes, see "Plan of Distribution" in the accompanying prospectus. For additional information as to the relationship between us and RBCCM, see the section "Plan of Distribution—Conflicts of Interest" in the accompanying prospectus.

STRUCTURING THE NOTES

The Notes are our debt securities. 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. In addition, because structured notes result in increased operational, funding and liability management costs to us, we typically borrow the funds under structured notes at a rate that is lower than the rate that we might pay for a conventional fixed or floating rate debt security of comparable maturity. The lower internal funding rate, the underwriting discount, the referral fee and the hedging-related costs relating to the Notes reduce the economic terms of the Notes to you and result in the initial estimated value for the Notes being less than their public offering price. Unlike the initial estimated value, any value of the Notes determined for purposes of a secondary market transaction may be based on a secondary market rate, which may result in a lower value for the Notes than if our initial internal funding rate were used.

In order to satisfy our payment obligations under the Notes, we may choose to enter into certain hedging arrangements (which may include call options, put options or other derivatives) with RBCCM and/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, volatility and the tenor of the Notes. The economic terms of the Notes and the initial estimated value depend in part on the terms of these hedging arrangements.

See "Selected Risk Considerations—Risks Relating to the Initial Estimated Value of the Notes and the Secondary Market for the Notes—The Initial Estimated Value of the Notes Is Less Than the Public Offering Price" 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. References to the "indenture" in this paragraph mean the Indenture as defined in the opinion of Norton Rose Fulbright Canada LLP dated December 20, 2023, as further amended and supplemented by the sixth supplemental indenture dated as of July 23, 2024.

In the opinion of Davis Polk & Wardwell LLP, as special United States products counsel to the Bank, when the Notes offered by this pricing supplement have been issued by the Bank pursuant to the indenture, the trustee has made, in accordance with the indenture, the appropriate notation to the master note evidencing such Notes (the "master note"), and such Notes have been delivered against payment as contemplated herein, such Notes will be valid and binding obligations of the Bank, enforceable in accordance with their terms, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability (including, without limitation, concepts of good faith, fair dealing and the lack of bad faith) and possible judicial or regulatory actions or applications giving effect to governmental actions or foreign laws affecting creditors' rights, *provided* that such counsel expresses no opinion as to (i) the enforceability of any waiver of rights under any usury or stay law or (ii) the effect of fraudulent conveyance, fraudulent transfer or similar provision of applicable law on the conclusions expressed above. This opinion is given as of the date hereof and is limited to the laws of the State of New York. Insofar as the foregoing opinion involves matters governed by the laws of the Provinces of Ontario and Québec and the federal laws of Canada, you have received, and we understand that you are relying upon, the opinion of Norton Rose Fulbright Canada LLP, Canadian counsel for the Bank, set forth above. In addition, this opinion is subject to customary assumptions about the trustee's authorization, execution and delivery of the indenture and the authentication of the master note and the validity, binding nature and enforceability of the indenture with respect to the trustee, all as stated in the opinion of Davis Polk & Wardwell LLP dated May 16, 2024, which has been filed as an exhibit to the Bank's Form 6-K filed with the SEC on May 16, 2024. References to the "indenture" in this paragraph mean the Indenture as defined in the opinion of Davis Polk & Wardwell LLP dated May 16, 2024, as further amended and supplemented by the sixth supplemental indenture dated as of July 23, 2024.