Dated July 27, 2022

ROYAL BANK OF CANADA

(a Canadian chartered bank)

REGISTRATION DOCUMENT

INTRODUCTION

What is this document?

According to Article 8(6) of Regulation (EU) 2017/1129, as it forms part of domestic law of the United Kingdom (the "**UK**") by virtue of the European Union (Withdrawal) Act 2018 (as amended, the "**EUWA**") (as amended, the "**UK Prospectus Regulation**"), a prospectus may be drawn up as a single document or separate documents. A prospectus composed of separate documents shall divide the required information into a registration document, a securities note and a summary note. This document constitutes a registration document ("**Registration Document**") prepared in accordance with Article 6 of the Commission Delegated Regulation (EU) 2019/980 of 14 March 2019, as it forms part of domestic law of the UK by virtue of the EUWA, relating to wholesale non-equity securities for the purpose of giving information with respect to Royal Bank of Canada (the "**Bank**" or the "**Issuer**") and its subsidiaries (together with the Bank, the "**RBC Group**"). The Registration Document contains information describing the Bank's business activities as well as certain financial information and material risks faced by it which, according to the particular nature of the Bank and the debt or derivative securities which it may offer to the public or apply to have admitted to trading on a regulated market during the period of twelve months after the date hereof, is necessary to enable investors to make an informed assessment of the assets and liabilities, financial position, profit and losses and prospects of the Bank. Some of the information is incorporated by reference into the Registration Document.

Information on any debt or derivative securities issued by the Bank may be found in a separate securities note containing disclosure on such debt or derivative securities (and, where appropriate, in the relevant summary note applicable to the relevant debt or derivative securities) which, together with this Registration Document, constitutes a prospectus issued in compliance with Article 8(6) of the UK Prospectus Regulation.

How do I use this Registration Document?

You should read and understand fully the contents of this Registration Document, including any documents incorporated by reference. This Registration Document contains important information about the Issuer, as well as describing certain risks relating to the Issuer and its business. An overview of the various sections comprising this Registration Document is set out below.

- The *Caution Regarding Forward-Looking Statements* section sets out considerations that should be taken into account when reading any statement relating to future events and circumstances.

- A *Table of Contents* section, with corresponding page references, is set out on page vii.

- The *Risk Factors* section describes the principal material risks that the Issuer believes could affect its results of operations or financial conditions and its ability to satisfy its obligations under any debt or derivative securities issued by it.

- The *Documents Incorporated by Reference* section sets out the information that is incorporated by reference into, and forms part of, this Registration Document. This Registration Document should be read together with all information which is deemed to be incorporated into the Registration Document by reference.

- The *Description of Royal Bank of Canada* section provides certain information about the Bank, including its history and development, principal activities and markets, principal markets in which it competes, organisational structure, Issuer ratings, summary financial information, directors, major shareholders and material contracts.

- The *General Information* section sets out further information on the Issuer which the Issuer is required to include under applicable rules. These include the availability of certain relevant documents for inspection and confirmations from the Bank.

Responsibility for the information contained in this Registration Document

The Bank accepts responsibility for the information in this Registration Document. To the best of the knowledge of the Bank, the information contained in the Registration Document is in accordance with the facts and the Registration Document makes no omission likely to affect its import.

This Registration Document has been approved by, the Financial Conduct Authority (the "**FCA**"), as competent authority under the UK Prospectus Regulation. The FCA only approves this Registration Document as meeting the standards of completeness, comprehensibility and consistency imposed by the UK Prospectus Regulation, and such approval should not be considered as an endorsement of the Issuer that is the subject of this Registration Document. This Registration Document will be valid for 12 months following the date of approval and will expire on July 21, 2023. The obligation to supplement this Registration Document in the event of significant new factors, material mistakes or material inaccuracies does not apply once the Registration Document is no longer valid.

Credit Rating Agency Regulation notice

Each of Moody's Investors Service, Inc. ("**Moody's USA**"), Standard & Poor's Financial Services LLC ("**S&P USA**"), Fitch Ratings, Inc. ("**Fitch**") and DBRS Limited ("**DBRS**") has provided issuer ratings for the Issuer as specified under "*Description of Royal Bank of Canada – Issuer Ratings*".

In accordance with Article 4.1 of the Regulation (EC) No. 1060/2009, as amended by Regulation (EU) No. 513/2011 (the "**EU CRA Regulation**") or, in relation to the UK, such regulation as it forms part of domestic law of the UK by virtue of the EUWA (the "**UK CRA Regulation"**), please note that the following documents (as defined in the section entitled "Documents Incorporated by Reference") incorporated by reference in this Registration Document contain references to credit ratings from the same rating agencies:

(a) the Annual Information Form dated November 30, 2021 (the "**2021 AIF**") (pages 13 to 15 and 28 to 30);

(b) the 2021 Annual Report (page 84); and

(c) the Second Quarter 2022 Report to Shareholders (page 35).

None of S&P USA, Moody's USA, Fitch or DBRS (collectively, the "**non-EU CRAs**") is established in the European Union or certified under the EU CRA Regulation. However, S&P Global Ratings Europe Limited, Moody's Deutschland GmbH., DBRS Ratings GmbH and Fitch Ratings Ireland Limited, which are affiliates of S&P USA, Moody's USA, DBRS and Fitch, respectively, and which are established in the European Union and registered under the EU CRA Regulation have endorsed the ratings of their affiliated non-EU CRAs. As such, the ratings issued by S&P USA, Moody's USA, Fitch and DBRS may be used for regulatory purposes in the European Union in accordance with the EU CRA Regulation. See "*Description of Royal Bank of Canada – Issuer Ratings".*

None of S&P USA, Moody's USA, Fitch or DBRS is established in the UK. However the S&P Issuer ratings have been endorsed by S&P Global Ratings UK Limited, the Moody's Issuer ratings have been endorsed by Moody's Investors Service Limited, the DBRS Ratings have been endorsed by DBRS Ratings Limited and the Fitch Issuer ratings have been endorsed by Fitch Ratings Limited, in each case in accordance UK CRA Regulation before the end of the transition period and have not been withdrawn. Moody's Canada and S&P Canada ratings of any debt or derivative securities of the Bank will also be endorsed by Moody's Investors Service Limited and S&P Global Ratings UK Limited, respectively, each of which is established and registered under the UK CRA Regulation. As such, the ratings issued by S&P USA, Moody's USA, Fitch and DBRS may be used for regulatory purposes in the UK in accordance with the UK CRA Regulation. See "*Description of Royal Bank of Canada – Issuer Ratings".*

In general, EEA regulated investors are restricted under the EU CRA Regulation from using credit ratings for regulatory purposes in the EEA, unless such credit ratings are issued by a credit rating agency established in the European Union ("**EU**") and registered under the EU CRA Regulation (and such registration has not been withdrawn or suspended, subject to transitional provisions that apply in certain circumstances). Such general restriction will also apply in the case of credit ratings issued by third country non-EEA credit rating agencies, unless the relevant credit ratings are endorsed by an EU registered credit rating agency or the relevant third country rating agency is certified in accordance with the EU CRA Regulation (and such endorsement action or certification, as the case may be, has not been withdrawn or suspended, subject to transitional provisions that apply in certain circumstances). The list of registered and certified rating agencies published by the European Securities and Markets Authority ("**ESMA**") on its website in accordance with the EU CRA Regulation is not conclusive evidence of the status of the relevant rating agency included in such list, as there may be delays between certain supervisory measures being taken against a relevant rating agency and the publication of the updated ESMA list.

Investors regulated in the UK are subject to similar restrictions under the UK CRA Regulation. As such, UK regulated investors are required to use for UK regulatory purposes ratings issued by a credit rating agency established in the UK and registered under the UK CRA Regulation. In the case of ratings issued by third country non-UK credit rating agencies, third country credit ratings can either be: (a) endorsed by a UK registered credit rating agency; or (b) issued by a third country credit rating agency that is certified in accordance with the UK CRA Regulation. Note this is subject, in each case, to (a) the relevant UK registration, certification or endorsement, as the case may be, not having been withdrawn or suspended, and (b) transitional provisions that apply in certain circumstances. In the case of third country ratings, for a certain limited period of time, transitional relief accommodates continued use for regulatory purposes in the UK, of existing pre-2021 ratings, provided the relevant conditions are satisfied.

The list of registered and certified rating agencies published by the FCA on its website in accordance with the UK CRA Regulation is not conclusive evidence of the status of the relevant rating agency included in such list, as there may be delays between certain supervisory measures being taken against a relevant rating agency and the publication of the updated FCA list.

Use of certain defined terms in this Registration Document

All references in this Registration Document to "**$**", "**C$**" or "**Canadian dollars**" are to the lawful currency of Canada. In this Registration Document, the term "**PRA**" shall mean the Prudential Regulation Authority.

CAUTION REGARDING FORWARD-LOOKING STATEMENTS

From time to time, the Issuer makes written or oral forward-looking statements within the meaning of certain securities laws, including the "safe harbour" provisions of the *United States Private Securities Litigation Reform Act of 1995* and any applicable Canadian securities legislation. The Issuer may make forward-looking statements in this Registration Document and in the documents incorporated by reference herein, in other filings with Canadian regulators, the United States Securities and Exchange Commission or other securities regulators or, in reports to shareholders and in other communications. The forward-looking statements contained in this Registration Document and in the documents incorporated by reference herein include, but are not limited to, statements relating to the Issuer's financial performance objectives, vision and strategic goals, the Economic, market, and regulatory review and outlook for Canadian, U.S., European and global economies, the regulatory environment in which the Issuer operates, and the risk environment including the Issuer's credit risk, market risk, liquidity and funding risk, and the potential continued impacts of the coronavirus ("**COVID-19**") pandemic on the Issuer's business operations, financial results, condition and objectives and on the global economy and financial market conditions and includes the Issuer's President and Chief Executive Officer's statements.

The forward-looking information contained in this Registration Document is presented for the purpose of assisting the holders and potential purchasers of debt or derivative securities issued by the Issuer and financial analysts in understanding the Issuer's financial position and results of operations as at and for the periods ended on the dates presented, as well as the Issuer's financial performance objectives, vision and strategic goals, and may not be appropriate for other purposes. Forward-looking statements are typically identified by words such as "believe", "expect", "foresee", "forecast", "anticipate", "intend", "estimate", "goal", "plan" and "project" and similar expressions of future or conditional verbs such as "will", "may", "should", "could" or "would".

By their very nature, forward-looking statements require the Issuer to make assumptions and are subject to inherent risks and uncertainties, which give rise to the possibility that the Issuer's predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that the Issuer's assumptions may not be correct and that the Issuer's financial performance objectives, vision and strategic goals will not be achieved. The Issuer cautions readers not to place undue reliance on these statements as a number of risk factors could cause the Issuer's actual results to differ materially from the expectations expressed in such forward-looking statements. These factors – many of which are beyond the Issuer's control and the effects of which can be difficult to predict – include: credit, market, liquidity and funding, insurance, operational, regulatory compliance (which could lead to the Issuer being subject to various legal and regulatory proceedings, the potential outcome of which could include regulatory restrictions, penalties and fines), strategic, reputation, competitive legal and regulatory environment, and systemic risks and other risks discussed in the risk sections and "Impact of COVID-19 pandemic" section of the Issuer's 2021 MD&A (as defined in the section entitled "Documents Incorporated by Reference") contained in the Issuer's 2021 Annual Report (and incorporated by reference herein) and in the "Risk management" section of the Issuer's Second Quarter 2022 MD&A (as defined in the section entitled "Documents Incorporated by Reference") contained in the Issuer's Second Quarter 2022 Report to Shareholders (and incorporated by reference herein); including business and economic conditions in the geographic regions in which the Issuer operates, information technology and cyber risks, environmental and social risk (including climate change), digital disruption and innovation, Canadian housing and household indebtedness, geopolitical uncertainty, privacy, data and third-party related risks, regulatory changes, culture and conduct, the effects of changes in government fiscal, monetary and other policies, tax risk and transparency, and the emergence of widespread health emergencies or public health crises such as pandemics and epidemics, including the COVID-19 pandemic and its impact on the global economy and financial market conditions and the Issuer's business operations, and financial results, condition and objectives. In addition, as the Issuer works to advance its climate goals, external factors outside of the Issuer's reasonable control may act as constraints on its achievement, including varying decarbonization efforts across economies, the need for thoughtful climate policies around the world, more and better data, reasonably supported methodologies, technological advancements, the evolution of consumer behaviour, the challenges of balancing interim emissions goals with an orderly and just transition, and other significant considerations such as legal and regulatory obligations.

The Issuer cautions that the foregoing list of risk factors is not exhaustive and other factors could also adversely affect the Issuer's results. When relying on the Issuer's forward-looking statements to make decisions with respect to the Issuer, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. Material economic assumptions underlying the forward-looking statements contained in this Registration Document and in the documents incorporated by reference herein are set out in the "Economic, market and regulatory review and outlook" section and for each business segment under the "Strategic priorities" and "Outlook" headings of the Issuer's 2021 MD&A contained in its 2021 Annual Report, as updated by the "Economic, market and regulatory review and outlook" section of the Issuer's Second Quarter 2022 MD&A contained in its Second Quarter 2022 Report to Shareholders, which sections are incorporated by reference herein. Except as required by law, none of the Issuer, any dealer appointed in relation to any issue of debt or derivative securities by the Issuer or any other person undertakes to update any forward-looking statement, whether written or oral, that may be made from time to time by or on behalf of the Issuer.

Additional information about these and other factors can be found in the risk sections and "Impact of COVID-19 pandemic" section of the Issuer's 2021 MD&A contained in its 2021 Annual Report and the Risk management section of the Issuer's Second Quarter 2022 MD&A contained in its Second Quarter 2022 Report to Shareholders, which sections are incorporated by reference herein.

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RISK FACTORS

The Issuer believes that the following factors, which are specific to the Issuer, may affect its ability to fulfil its obligations under its non-equity securities. Most of these factors are contingencies which may or may not occur.

The Issuer believes that the factors described below represent the material risks inherent in investing in non-equity securities issued by it at the date of this Registration Document. If any or a combination of these risks actually occurs, the business, results of operation, financial condition and/or prospects of the Issuer could be materially and adversely affected, which could result in the Issuer being unable to pay interest, principal or other amounts on or in connection with any non-equity securities issued by it or materially and adversely affect the trading price of any such non-equity securities.

Prospective investors should note that the risks relating to the Issuer summarised in this section are risks that the Issuer believes to be essential to an assessment by the prospective investor of whether to make an investment in the non-equity securities and the Issuer does not represent that the statements below regarding the risks of investing in its non-equity securities are exhaustive. Additional risks and uncertainties not presently known to the Issuer or that it currently believes to be immaterial could also have a material impact on its results of operations or financial condition or affect the ability of the Issuer to pay interest, principal or other amounts on or in connection with the non-equity securities issued by it. As the risks which the Issuer faces relate to events and depend on circumstances that may or may not occur, prospective investors should also read the detailed information set out elsewhere in this document (including information incorporated by reference) and any applicable securities note (and, where appropriate, summary note), final terms or pricing supplement to reach their own views prior to making any investment decisions.

Risks relating to the Issuer

Prospective investors should consider the following risks to which the Issuer's businesses are exposed.

1. Top and emerging risks

An important component of the Issuer's risk management approach is to ensure that top and emerging risks, as they evolve, are identified, managed, and incorporated into the Issuer's existing risk management assessment, measurement, monitoring and escalation processes and addressed in the Issuer's risk frameworks and policies. These practices are intended to ensure a forward-looking risk assessment is maintained by management in the course of business development and as part of the execution of ongoing risk oversight responsibilities. Top and emerging risks are discussed by the Issuer's senior management and the Board on a regular basis. The Issuer has developed supplementary internal guidance to support enterprise-wide identification and assessment of all material risks, including those that are not readily apparent.

Top and emerging risks encompass those that could materially impact the Issuer's financial results, financial and operational resilience, reputation, business model, or strategy, as well as those that could potentially impact the Issuer as the risks evolve.

In addition to the Impact of pandemic risk factor set out under "**6. Macroeconomic risks**" below which impacts multiple risk factors, the table below sets out the risk factors that the Issuer currently considers its top and emerging risks, but it should be highlighted that the risks set out in these tables are not exhaustive and investors should consider all the risk factors disclosed in this Risk Factors section.

Top & emerging risks	Description
1.1 Business and economic conditions	The Issuer's financial results may be affected to varying degrees by the general business and economic conditions in the geographic regions in which the Issuer operates. These conditions may include factors such as consumer saving, spending habits and sentiment, as well as consumer borrowing and repayment patterns, unemployment rates, the differing paths to economic recovery among nations across the globe, particularly in light of the prolonged COVID-19 pandemic and range of containment measures, the level of business investment and overall business sentiment, the long-term impact from the pandemic on vulnerable sectors, the level of activity and volatility of the financial markets, supply chain challenges and labour shortages affecting certain sectors, inflation or possible stagflation, the level of government spending, monetary policies that are adopted by the Bank of Canada (BoC), the Federal Reserve in the U.S., the European Central Bank in the European Union and monetary authorities in other jurisdictions in which the Issuer operates, and the fiscal policies of the governments of Canada, the U.S., Europe and such other jurisdictions. Such policies can also adversely affect the Issuer's clients and counterparties in Canada, the U.S. and internationally, which may increase the risk of default by such clients and counterparties. Moreover, interest rate changes and actions taken by central banks to manage inflation or the broader economy would have implications for the Issuer. The Issuer's financial results are sensitive to changes in interest rates, as described in the "Systemic Risk" section below. For example, a slowdown in economic growth or an economic downturn could adversely impact employment rates and household incomes, consumer spending, corporate earnings and business investment and could adversely affect the Issuer's business, including but not limited to the demand for its loan and other products, and result in lower earnings, including higher credit losses. Additional risks are emerging around governments' withdrawal of COVID-19 pandemic support measures, and how they will seek to recoup the unprecedented levels of support. This may include, for example, changes to tax policy to address fiscal capacity concerns and to balance budgets in the future.

	There are also emerging risks related to changing demographics as well as the potential implications that an elevated inflation and rising interest rate environment could have, for example, on increasing wealth inequality.
1.2 Information technology and cyber risks	Information technology (IT) and cyber risks remain top risks, not only for the financial services sector, but for other industries worldwide. Cyber risks are the risks to the business associated with cyber-attacks initiated to disrupt or disable the Issuer's operations or to expose or damage data. The Issuer continues to be subject to heightened risks in the form of cyber-attacks, data breaches, cyber extortion and similar compromises, due to: (i) the size, scale, and global nature of the Issuer's operations; (ii) the Issuer's heavy reliance on the internet to conduct day-to-day business activities; (iii) the Issuer's intricate technological infrastructure; and (iv) the Issuer's use of third-party service providers. Additionally, clients' use of personal devices can create further avenues for potential cyber-related incidents, as the Issuer has little or no control over the safety of these devices. Ransomware threats are growing in sophistication and being used to launch major supply chain attacks. IT and cyber risks have increased during the COVID-19 pandemic, as increased malicious activities are creating more threats for cyber-attacks including COVID-19 phishing emails, malware-embedded mobile apps that purport to track infection rates, and targeting of vulnerabilities in remote access platforms as companies continue to operate with work from home arrangements. Resulting implications could include business interruptions, service disruptions, financial loss, theft of intellectual property and confidential information, litigation, enhanced regulatory attention and penalties, as well as reputational damage. Furthermore, the adoption of emerging technologies, such as cloud computing, AI and robotics, call for continued focus and investment to manage risks effectively. Not managing this risk effectively may have an adverse effect on the Issuer's financial performance and condition.
1.3. Environmental and social risk (including climate change)	Environmental and Social ("**E&S**") risk is the potential for an E&S issue associated with the Issuer, a client, transaction, product, supplier or activity, to have a negative impact on the Issuer's financial position, operations, legal and regulatory compliance, or reputation. E&S issues include, but are not limited to, site contamination, waste management, land and resource use, biodiversity, water quality and availability, climate change, environmental regulation, human rights (including, but not limited to, Indigenous Peoples' rights), and community engagement. The Issuer, like other organizations, is increasingly under scrutiny to address social and racial inequality and human rights issues, and failure to do so may result in strategic, reputational and regulatory risks. Risks associated with climate change are evolving as it relates to the global transition to a net-zero economy and physical climate risks (e.g., extreme

	weather events), which could result in a broad range of impacts including potential strategic, reputational, regulatory, compliance, operational and credit related risks for the Issuer and its clients. If not managed effectively, these risks could lead to negative reputational and and financial impacts.
1.4 Digital disruption and innovation	The COVID-19 pandemic has changed the way consumers interact with financial services providers. Demand for digital banking services has increased, and while this represents an opportunity for the Issuer to leverage its technological advantage, the need to meet the rapidly evolving needs of clients and compete with non-traditional competitors has increased the Issuer's strategic and reputational risks. Additional risks also continue to emerge as demographic trends, evolving client expectations, the increased power to analyze data and the emergence of disruptors are creating competitive pressures across a number of sectors. Moreover, established technology companies, newer competitors, and regulatory changes continue to foster new business models that could challenge traditional banks and financial products. Finally, while the adoption of new technologies, such as AI and machine learning, presents opportunities for the Issuer, it could result in new and complex strategic, reputational, operational, regulatory and compliance risks that would need to be managed effectively and, if not, may adversely impact its financial performance and condition.
1.5 Canadian housing and household indebtedness	Canadian housing and household indebtedness risks remain elevated, but have moderated as restrictions related to the COVID-19 pandemic have eased and employment has rebounded. The labour market has continued to improve with the unemployment rate falling to a multi-decade low of 5.2% in April 2022, and intensifying labour shortages have shown signs of strengthening wage growth. Concerns related to housing affordability in certain markets and levels of mortgage-related Canadian household debt – which were already elevated before and during the COVID-19 pandemic – could escalate if additional waves of the COVID-19 pandemic emerge, if the period of economic recovery is prolonged, or if the lending environment changes, potentially resulting in, among other things, higher credit losses. While real estate rental activity has rebounded in certain markets, changing consumer preferences and work arrangements, and the impact from possible future waves of the COVID-19 pandemic, may continue to have an impact on future real estate investment and demand. As at October 31, 2021, the Issuer's retail credit risk exposure, which includes residential mortgages, home equity lines of credit, credit cards, unsecured lines of credit and overdraft protection products, was C$685,344 million reflecting exposure at default. If this risk is not properly managed, it may have a negative impact on the Issuer's financial performance, condition and prospects.

1.6 Geopolitical uncertainty	Persistent trade tensions, supply chain disruptions, policy changes, COVID-19 vaccine nationalism and vaccine diplomacy continue to impact global economic growth prospects and market sentiment. The Canadian economy is vulnerable to continued trade tensions given the country's trading relationships with the U.S. and China. Tensions remain elevated between China and the U.S. and its allies over a number of issues, including trade, technology, human rights, Hong Kong, Macau, and Taiwan. Tensions between China and its neighbours over territorial claims add further global and economic uncertainty. In addition, tensions with Russia remain high over allegations of cyber-attacks, election interference, adventurism, and the mistreatment of anti-corruption and pro-democracy activists. Other geopolitical tensions, including the conflict between Russia and Ukraine, could also add to economic and market uncertainties. More broadly, the post-pandemic future of global trade remains uncertain, as countries look to decrease reliance on the global supply chain. Increased protectionism and economic nationalism could reshape global alliances as a steady COVID-19 vaccine supply and the supply of other critical goods of economic and national importance (e.g., semiconductors) remain one of the top priorities of governments. Failure to effectively manage this risk may adversely impact the Issuer's financial performance, position and prospects.
1.7 Privacy, data and third-party related risks	The protection and responsible use of personal information are critical to maintaining the Issuer's clients' trust. Privacy risk is the risk of improper creation or collection, use, disclosure, retention or destruction of information. In addition, the management and governance of the Issuer's data also remains a top risk given the high value attributed to its data for the insights it can generate for clients and communities. Data management risk is the risk of failing to manage information appropriately throughout its lifecycle due to inadequate processes and controls, resulting in legal or regulatory consequences, reputational damage or financial loss. Resulting implications from failing to manage data and privacy risks could include financial loss, theft of intellectual property and/or confidential information, litigation, enhanced regulatory attention and penalties, as well as reputational damage. Effective privacy and information management practices continue to grow in importance, as demonstrated by the continued development of complex regulations in the jurisdictions in which the Issuer operates. The Issuer's potential exposure to these risks increases as it continues to partner with third-party service providers and adopt new business models and technologies (e.g., cloud computing, AI and machine learning). Attackers gravitate towards vulnerabilities in an ecosystem, and the weakest link in the supply chain can be a supplier or third-party service provider, who may not have sufficiently robust controls. Third-party risk is the risk of failure to

	effectively manage third parties which may expose the Issuer to service disruptions, regulatory action, financial loss, litigation or reputational damage. Privacy, data and third-party related risks have been heightened as the use of work from home arrangements remains common practice. Third-party providers critical to the Issuer's operations are monitored for any impact on their ability to deliver services, including vendors of its third-party providers. The collection, use and sharing of data, as well as the management and governance of data, are increasingly important as the Issuer continues to invest in digital solutions and innovation, as well as, expanding its business activities. Failure to properly onboard and manage service providers may expose the Issuer to service disruption, financial loss and other risks that may negatively impact its financial performance and condition.
1.8 Regulatory changes	The ongoing introduction of new or revised regulations will continue to lead to increasing focus across the organization on meeting additional regulatory requirements across the multiple jurisdictions in which the Issuer operates. See "Business segment results" on pages 24 to 47 of the 2021 MD&A incorporated by reference in the Registration Document for information on the Issuer's business segments and the jurisdictions in which they operate. Financial and other reforms that have or are coming into effect, across multiple jurisdictions, such as Canadian anti-money laundering regulations, the interest rate benchmark reform, as well as privacy, climate and consumer protection, continue to impact the Issuer's operations and strategies and may negatively impact its financial performance, condition and prospects.
1.9 Culture and conduct risks	The Issuer's purpose, values and risk principles are key dimensions of its culture. The Issuer demonstrates its culture through its conduct – the behaviours, judgments, decisions, and actions of the organization and its employees. Culture and conduct risks are considered top risks for the financial services industry due to the impact the Issuer's choices, behaviours, and overall risk governance can have on outcomes for its stakeholders. The Issuer embeds client considerations into its decision-making processes and aims to ensure focus on the fair treatment of clients, and continues to implement regulatory changes that align with this objective. The Issuer is responsive to evolving employee needs while expecting employees to always act with integrity. Canadian, U.S. and global regulators have been increasingly focused on conduct matters and risks, and heightened expectations generally from regulators could lead to investigations, remediation requirements, and higher compliance costs. While the Issuer takes numerous steps to continue to strengthen its conduct practices, and prevent and detect outcomes which could potentially harm clients, customers, employees or the integrity of the markets, such outcomes may not always be prevented or detected and if not, may negatively impact its financial position and performance as well as its prospects.

2. Transactional/Positional risks

2.1 Credit risk

Credit risk is the risk of loss associated with an obligor's potential inability or unwillingness to fulfil its contractual obligations on a timely basis and may arise directly from the risk of default of a primary obligor of the Issuer (e.g., issuer, debtor, counterparty, borrower or policyholder), indirectly from a secondary obligor of the Issuer (e.g., guarantor or reinsurer), through off-balance sheet exposures, contingent credit risk, associated credit risk and/or transactional risk. Credit risk includes counterparty credit risk arising from both trading and non-trading activities.

Credit risk is inherent in a wide range of the Issuer's businesses. This includes lending to businesses, sovereigns, public sector entities, banks and other financial institutions, as well as certain high net worth individuals, which comprise the Issuer's wholesale portfolio and residential mortgages, personal loans, credit cards, and small business loans, which comprise the Issuer's retail portfolio.

The Issuer's gross credit exposure includes lending-related and other credit risk and trading-related credit risk. Lending-related and other credit risk includes: loans and acceptances outstanding, undrawn commitments, and other exposures, including contingent liabilities such as letters of credit and guarantees, debt securities carried at fair value through other comprehensive income ("**FVOCI**") or amortized cost and deposits with financial institutions. Trading-related credit risk includes: Repo-style transactions, which include repurchase and reverse repurchase agreements and securities lending and borrowing transactions, and derivative amounts. The Issuer's gross credit risk exposure as at October 31, 2021 was C$1,733,146 million. See the table "Credit Risk exposure by portfolio, sector and geography" on page 66 of the 2021 MD&A incorporated by reference in the Registration Document for further information.

Credit risk also includes (i) counterparty credit risk; and (ii) wrong-way risk. Counterparty credit risk is the risk that a party with whom the Issuer has entered into a financial or non-financial contract will fail to fulfil its contractual agreement and default on its obligation. It incorporates not only the contract's current value, but also considers how that value can move as market conditions change. Counterparty credit risk usually arises from trading-related derivative and repo-style transactions. Derivative transactions include forwards, futures, swaps and options, and can have underlying references that are either financial (e.g., interest rate, foreign exchange, credit or equity) or non-financial (e.g., precious metal and commodities). For more information on derivatives instruments and credit risk mitigation, see Note 8 of the 2021 Audited Consolidated Financial Statements incorporated by reference into the Registration Document.

Wrong-way risk is the risk that exposure to a counterparty is adversely correlated with the credit quality of that counterparty. There are two types of wrong-way risk: (i) specific wrong-way risk, which exists when the Issuer's exposure to a particular counterparty is positively correlated with the probability of default of the counterparty due to the nature of the Issuer's transactions with them (e.g., loans collateralized by shares or debt issued by the counterparty or a related party); and (ii) general wrong-way risk, which exists when there is a positive correlation between the probability of default of counterparties and general macroeconomic or market factors. This typically occurs with derivatives (e.g., the size of the exposure increases) or with collateralized transactions (e.g., the value of the collateral declines).

Geographically, as at October 31, 2021, Canada represented approximately 63% of the Issuer's credit risk exposure while the U.S. represented 23%, Europe 9% and the Other international regions 5%. Accordingly, deterioration in general business and economic conditions in Canada and the U.S. could adversely affect the credit quality of the Issuer's borrowers and counterparties and could thus affect the value of the Issuer's assets and result in an increase in credit losses.

The Issuer has put in place specific frameworks to manage credit risk. See pages 60 to 72 of the 2021 MD&A incorporated by reference in the Registration Document for more information. Notwithstanding such frameworks, the Issuer recorded provisions for credit losses ("**PCL**") to recognise estimated credit losses on all financial assets, except for financial assets classified or designated as fair value through profit or loss ("**FVTPL**") and equity securities designated as FVOCI, which are not subject to impairment assessment. For the year ended October 31, 2021, the Issuer's total PCL was C$(753) million. See the Credit quality performance section on pages 70 and 72 of the 2021 MD&A and page 26 of the Second Quarter 2022 MD&A incorporated by reference in the Registration Document.

Failure to effectively manage credit risk may have an adverse impact on the Issuer's financial condition and performance.

2.2 Market risk

Market risk is defined to be the impact of market prices upon the financial condition of the Issuer. This includes potential gains or losses due to changes in market determined variables such as interest rates, credit spreads, equity prices, commodity prices, foreign exchange rates and implied volatilities.

The Issuer has adopted specific frameworks to manage market risk as described on pages 72 to 78 of the 2021 MD&A incorporated by reference in the Registration Document. Despite these frameworks, the Issuer remains exposed to the risk of loss as a result of market risk which may negatively impact its financial performance and condition.

The measures of financial condition impacted by market risk are as follows:

1. Positions whose revaluation gains and losses are reported in revenue, which includes:

    a) Changes in the fair value of instruments classified or designated as FVTPL, and

    b) Hedge ineffectiveness.

2. Common Equity Tier 1 ("**CET1**") capital, which includes:

    a) All of the above, plus

    b) Changes in the fair value of FVOCI securities where revaluation gains and losses are reported as Other comprehensive income ("**OCI**"),

c) Changes in the Canadian dollar value of investments in foreign subsidiaries, net of hedges, due to foreign exchange translation, and

d) Changes in the fair value of employee benefit plan deficits.

3. CET1 ratio, which includes:

a) All of the above, plus

b) Changes in Risk-weighted assets ("**RWA**") resulting from changes in traded market risk factors, and

c) Changes in the Canadian dollar value of RWA due to foreign exchange translation.

4. The economic value of the Bank, which includes:

a) Points 1 and 2 above, plus

b) Changes in the economic value of other non-trading positions, net interest income, and fee based income, as a result of changes in market risk factors.

2.2.1 The key measures of market risk are as follows:

(a) FVTPL positions

FVTPL is an accounting concept which indicates that the assets and liabilities are measured at fair value on the balance sheet. The measurement is generally used for financial instruments that are part of the Issuer's trading activities (purchased with intent to sell or repurchase) and are classified as FVTPL, but can be elected for financial assets if it eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise from measuring assets or liabilities, or recognising related gains and losses on a different basis (an accounting mismatch).

The fair value option can be elected for financial liabilities if: (i) the election eliminates an accounting mismatch; (ii) the financial liability is part of a portfolio that is managed on a fair value basis, in accordance with a documented risk management or investment strategy; or (iii) there is an embedded derivative in the financial or non-financial host contract and the derivative is not closely related to the host contract. These instruments cannot be reclassified out of the FVTPL category while they are held or issued (i.e. designated as FVTPL). Any loss or gain in the fair value of these instruments between quarterly balance sheet dates due to changes in market prices and rates are accounted for as losses or gains, and so directly impact the Issuer's financial performance and condition. Financial liabilities designated as FVTPL are recorded at fair value and fair value changes attributable to changes in the Issuer's own credit risk are recorded in OCI. See "Fair value of financial instruments" on page 110 and "Securities" on page 141 of the 2021 Annual Report incorporated by reference in the Registration Document for more information on how fair value is determined.

As an element of the Enterprise Risk Appetite Framework, the Board approves the Issuer's overall market risk constraints. Group Risk Management ("**GRM**") creates and manages the control structure for FVTPL positions which ensures that business is conducted on a basis consistent with Board requirements. The Market and Counterparty Credit Risk function within GRM is responsible for creating and managing the controls and governance procedures that ensure that risk taken is consistent with risk appetite constraints set by the Board. These controls include limits on probabilistic measures of potential loss such as Value-at-Risk (VaR), Stressed Value-at-Risk (SVaR) and Incremental Risk Charge (IRC) as defined below:

> "**VaR**" is a statistical measure of potential loss for a financial portfolio computed at a given level of confidence and over a defined holding period. The Issuer measures VaR at the 99th percentile confidence level for price movements over a one-day holding period using historic simulation of the last two years of equally weighted historic market data. These calculations are updated daily with current risk positions, with the exception of certain less material positions that are not actively traded and are updated on at least a monthly basis.
>
> "**SVaR**" is calculated in an identical manner as VaR with the exception that it is computed using a fixed historical one-year period of extreme volatility and its inverse rather than the most recent two-year history. The stress period used is a one-year period covering the market volatility observed during Q2 2020. SVaR is calculated daily for all portfolios, with the exception of certain less material positions that are not actively traded and are updated on at least a monthly basis.
>
> "**IRC**" captures the risk of losses under default or rating changes for issuers of certain traded fixed income instruments. IRC is measured over a one year horizon at a 99.9% confidence level, and captures different liquidity horizons for instruments and concentrations in issuers under a constant level of risk assumption. Changes in measured risk levels are primarily associated with changes in inventory from the applicable fixed income trading portfolios.

See the table under "Market risk measures — FVTPL positions" on page 73 of the 2021 MD&A and on page 27 of the Second Quarter 2022 MD&A, both incorporated by reference in the Registration Document, for the quantitative impact of market risk on FVTPL positions for the year ended October 31, 2021 and the three- and six-month periods ended, respectively April 30, 2022.

(b) Interest Rate Risk in the Banking Book (IRRBB) positions

IRRBB activity arises primarily from traditional customer-originated banking products such as deposits and loans, and includes related hedges as well as the interest rate risk from securities held for liquidity management purposes. Factors contributing to IRRBB include mismatches between asset and liability repricing dates, relative changes in asset and liability rates in response to market rate scenarios, and other product features affecting the expected timing of cash flows, such as options to pre-pay loans or redeem term deposits prior to contractual maturity. IRRBB sensitivities are regularly measured and reported, and subject to limits and controls with independent oversight from GRM.

To monitor and control IRRBB, the Issuer assesses two primary metrics, Net Interest Income ("**NII**") risk and Economic Value of Equity ("**EVE**") risk, under a range of market shocks, scenarios, and time horizons. Market scenarios include currency-specific parallel and non-parallel yield curve changes, interest rate volatility shocks, and interest rate shock scenarios prescribed by regulators. The table on page 75 of the 2021 MD&A and the table on page 28 of the Second Quarter 2022 MD&A show the potential before-tax impact of an immediate and sustained 100 basis points increase or decrease in interest rates on projected 12-month NII and EVE assuming no subsequent hedging. Rate floors are applied within the declining rates scenarios which prevent EVE valuation and NII simulation rate levels from falling below a minimum average level of negative 25 bps across major currencies. Interest rate risk measures are based on current on and off-balance sheet positions which can change over time in response to business activity and management actions.

As at April 30, 2022, an immediate and sustained -100 bps shock would have had a negative impact to the Issuer's NII of C$1,214 million. An immediate and sustained +100 bps shock at the end of April 30, 2022 would have had a negative impact to the Issuer's EVE of C$2,054 million.

(c) Investment securities carried at FVOCI

The Issuer held C$78 billion of investment securities carried at FVOCI as at October 31, 2021. The Issuer holds debt securities carried at FVOCI primarily as investments, as well as to manage liquidity risk and hedge interest rate risk in the Issuer's non-trading banking balance sheet. As at October 31, 2021, the Issuer's portfolio of investment securities carried at FVOCI is interest rate sensitive and would impact OCI by a pre-tax change in value of C$8 million as measured by the change in the value of the securities for a one basis point parallel increase in yields. The portfolio also exposes the Issuer to credit spread risk of a pre-tax change in value of C$14 million, as measured by the change in value for a one basis point widening of credit spreads. The value of the investment securities carried at FVOCI included in the Issuer's IRRBB measure as at October 31, 2021 was C$75 billion. The Issuer's investment securities carried at FVOCI also include equity exposures of C$1 billion as at October 31, 2021.

(d) Non-trading foreign exchange rate risk

Foreign exchange rate risk is the potential adverse impact on earnings and economic value due to changes in foreign currency rates. The Issuer's revenue, expenses and income denominated in currencies other than the Canadian dollar are subject to fluctuations as a result of changes in the value of the average Canadian dollar relative to the average value of those currencies. The Issuer's most significant exposure is to the U.S. dollar, due to the Issuer's operations in the U.S. and other activities conducted in U.S. dollars. Other significant exposures are to the British pound and the Euro, due to the Issuer's activities conducted internationally in these currencies. A strengthening or weakening of the Canadian dollar compared to the U.S. dollar, British pound and the Euro could reduce or increase, as applicable, the translated value of the Issuer's foreign currency denominated revenue, expenses and earnings and could have a significant effect on the results of the Issuer's operations. The Issuer is also exposed to foreign exchange rate risk arising from its investments in foreign operations.

For unhedged equity investments, when the Canadian dollar appreciates against other currencies, the unrealized translation losses on net foreign investments decreases the Issuer's shareholder equity through the other components of equity and decreases the translated value of the RWA of the foreign currency-denominated asset. The reverse is true when the Canadian dollar depreciates against other currencies. Consequently, the Issuer considers these impacts in selecting an appropriate level of its investments in foreign operations to be hedged.

2.3 Liquidity and funding risk

Liquidity and funding risk ("**liquidity risk**") is the risk that the Issuer may be unable to generate sufficient cash or its equivalents in a timely and cost-effective manner to meet its commitments. Liquidity risk arises from mismatches in the timing and value of on-balance sheet and off-balance sheet cash flows.

Core funding, comprising capital, longer-term wholesale liabilities and a diversified pool of personal and, to a lesser extent, commercial and institutional deposits, is the foundation of the Issuer's structural liquidity position. The Issuer's ability to access unsecured funding markets and to engage in certain collateralized business activities on a cost-effective basis are primarily dependent upon maintaining competitive credit ratings. Credit ratings and outlooks provided by rating agencies reflect their views and methodologies. Ratings are subject to change, based on a number of factors including, but not limited to, the Issuer's financial strength, competitive position, liquidity and other factors not completely within the Issuer's control. A lowering of the Issuer's credit ratings may have potentially adverse consequences for the Issuer's funding capacity or access to the capital markets, may affect the Issuer's ability, and the cost, to enter into normal course derivative or hedging transactions and may require the Issuer to post additional collateral under certain contracts, any of which may have an adverse effect on its results of operations and financial condition.

The Liquidity Coverage Ratio ("**LCR**") is a Basel III metric that measures the sufficiency of high-quality liquid assets ("**HQLA**") available to meet liquidity needs over a 30-day period in an acute stress scenario. The Basel Committee on Banking Supervision ("**BCBS**") and Office of the Superintendent of Financial Institutions ("**OSFI**") regulatory minimum coverage level for LCR is 100%. The Issuer's average LCR for the quarter ended April 30, 2022 was 121%, which translates into a surplus of approximately C$64 billion. Net Stable Funding Ratio ("**NSFR**") is a Basel III metric that measures the sufficiency of available stable funding relative to the amount of required stable funding. The BCBS and OSFI regulatory minimum coverage level for NSFR is 100%. The Issuer's NSFR as at April 30, 2022 was 113%, which translates into a surplus of approximately C$97.0 billion. Despite the Issuer's liquidity risk management policy described on pages 78 through 90 of the 2021 MD&A incorporated by reference into the Registration Document, any significant deterioration in its liquidity position may lead to an increase in funding costs or constrain the volume of new lending. These factors may adversely impact the Issuer's financial performance and position.

2.4 Insurance risk

Insurance risk refers to the potential financial loss to the Issuer that may arise where the amount, timing and/or frequency of benefit and/or premium payments under insurance or reinsurance contracts are different than expected. Insurance risk is distinct from those risks covered by other parts of the Issuer's risk management framework (e.g., credit, market and operational risk) where those risks are ancillary to, or accompany, the risk transfer. The Issuer's five insurance sub-risks are: morbidity, mortality, longevity, policyholder behavior (lapse), and travel risk. Insurance risk may negatively impact the Issuer's financial performance and condition. See a description of the Issuer's insurance business on pages 38 to 41 of the 2021 MD&A incorporated by reference into the Registration Document.

3. Operational risk

Operational risk is the risk of loss or harm resulting from people, inadequate or failed internal processes, controls and systems or from external events. Operational risk is inherent in all of the Issuer's activities and third-party activities and failure to manage operational risk can result in direct or indirect financial loss, reputational impact or regulatory scrutiny and proceedings in the various jurisdictions where the Issuer operates.

Notwithstanding anything in this risk factor, this risk factor should not be taken as implying that the Issuer will be unable to comply with its obligations as a company with securities admitted to the Official List of the UK Financial Conduct Authority (the "**FCA**") or as a supervised firm regulated by the FCA or the UK Prudential Regulation Authority (the "**PRA**").

The Issuer's operations expose it to many different operational risks, which may adversely affect its businesses and financial results. In addition to cybersecurity, data management and privacy, and third-party risk, which are also discussed above in "**1. Top and emerging risks**", the Issuer's results could also be adversely affected by risks associated with money laundering and terrorist financing and business continuity.

Money laundering and terrorist financing risk is the risk that the Issuer's products and services are used to facilitate the laundering of proceeds of crime, including the financing of terrorist activity. The Issuer maintains an enterprise-wide program designed to deter, detect and report suspected money laundering and terrorist financing activities across its organization, while seeking to ensure compliance with the laws and regulations of the various jurisdictions in which the Issuer operates. Despite the Issuer's compliance programmes, non-compliance may still occur, leading to enforcement action, criminal prosecutions and reputational damage which could negatively impact its financial performance and condition.

Business continuity risk is the risk of being unable to maintain, continue or restore essential business operations during and/or after an event that prevents the Issuer from conducting business in the normal course. Exposure to disruptive operational events interrupts the continuity of the Issuer's business operations and could negatively impact the Issuer's financial results, reputation, client outcomes and/or result in harm to the Issuer's employees. These operational events could result from the impact of severe weather, pandemics, failed processes, technology failures or cyber threats.

4. *Regulatory compliance risk and legal and regulatory environment*

4.1 Regulatory compliance risk

Regulatory compliance risk is the risk of potential non-conformance with laws, rules, regulations and prescribed practices in any jurisdiction in which the Issuer operates. Issues regarding compliance with laws and regulations can arise in a number of areas in large complex financial institutions, such as the Issuer, and are often the result of inadequate or failed internal processes, controls, people or systems. The Issuer currently is, and may be at any given time, subject to a number of legal and regulatory proceedings and subject to numerous governmental and regulatory examinations, investigations and other inquiries.

Laws and regulations are in place to protect the financial and other interests of the Issuer's clients, investors and the public. As a large-scale global financial institution, the Issuer is subject to numerous laws and extensive and evolving regulation by governmental agencies, supervisory authorities and self-regulatory organizations in Canada, the U.S., the U.K., Europe and other jurisdictions in which it operates. Such regulation continues to become increasingly extensive and complex. In addition, regulatory scrutiny and expectations in Canada, the U.S., the U.K., Europe and other jurisdictions for large financial institutions with respect to, among other things, governance, risk management practices and controls, and conduct, as well as the enforcement of regulatory compliance matters, has intensified. Failure to comply with these regulatory requirements and expectations or to resolve any identified deficiencies could result in increased regulatory oversight and restrictions. Resolution of such matters can also result in the payment of substantial penalties, agreements with respect to future operation of their business, actions with respect to relevant personnel, admission of wrongdoing, and guilty pleas with respect to criminal charges.

Operating in this increasingly complex regulatory environment and intense regulatory enforcement environment, the Issuer is and has been subject to a variety of legal proceedings, including civil claims and lawsuits, criminal charges, regulatory scrutiny, examinations and proceedings, investigations, audits and requests for information by various governmental regulatory agencies and law enforcement authorities in various jurisdictions (see Note 21 and 24 of the 2021 Audited Consolidated Financial Statements and Note 12 of the Second Quarter 2022 Unaudited Interim Condensed Consolidated Financial Statements, both of which are incorporated by reference in the Registration Document, for information on current legal and regulatory matters as well as tax examinations and assessments), and the Issuer anticipates that its ongoing business activities will give rise to such matters in the future. The global scope of the Issuer's operations also means that a single issue may give rise to overlapping regulatory investigations, regulatory proceedings and or civil litigation claims in different jurisdictions. The Issuer can be subject to such proceedings due to alleged violations of law or, if determined by regulators, allegedly inadequate policies, procedures, controls or remediation of deficiencies. Changes to laws, including tax laws, regulations or regulatory policies, as well as the changes in how they are interpreted, implemented or enforced, could adversely affect the Issuer, for example, by lowering barriers to entry in the businesses in which it operates, increasing its costs of compliance, or limiting its activities and ability to execute its strategic plans. In addition, the severity of the remedies sought in legal and regulatory proceedings to which the Issuer is subject have increased. Further, there is no assurance that the Issuer always will be, or be deemed to be, in compliance with laws, regulations or regulatory policies or expectations. Accordingly, it is possible that the Issuer could receive a judicial or regulatory enforcement judgment or decision that results in significant fines, damages, penalties, and other costs or injunctions, criminal convictions, or loss of licenses or registrations that would damage its reputation, and negatively impact its earnings and ability to conduct some of its businesses. The Issuer is also subject to litigation arising in the ordinary course of its business and the adverse resolution of any litigation could have a significant adverse effect on its results or could give rise to significant reputational damage, which in turn could impact its future business prospects.

The Issuer's Regulatory Compliance Management Framework outlines how it manages and mitigates the regulatory compliance risks associated with failing to comply with, or adapt to, current and changing laws and regulations in the jurisdictions in which it operates. Regulatory compliance risk includes the regulatory risks associated with financial crimes (which include, but are not limited to, money laundering, bribery, and sanctions), privacy, market conduct, consumer protection, business conduct, as well as prudential and other generally applicable non-financial requirements. Specific compliance policies, procedures and supporting frameworks have been developed to manage regulatory compliance risk.

4.2 *Legal and regulatory environment*

Legal and regulatory environment risk is the risk that new or modified laws and regulations, and the interpretation or application of laws and regulations, will negatively impact the way in which the Issuer operates, both in Canada and in the other jurisdictions in which it conducts business. The full impact of some of these changes on the Issuer's business will not be known until final rules are implemented and market practices have developed in response. The Issuer continues to respond to these and other developments and is working to minimize any potential adverse business or economic impact. The following provides a high-level summary of some of the key regulatory changes that have the potential to increase or decrease the Issuer's costs, impact its profitability and increase the complexity of its operations. A summary of the additional regulatory changes instituted by governments globally and by OSFI in response to the COVID-19 pandemic are included in the Impact of COVID-19 pandemic and Capital management sections of the Issuer's 2021 Annual Report incorporated by reference in the Registration Document.

(i) Global uncertainty

The uncertainty around the COVID-19 pandemic has generally eased in most of the Issuer's operating regions, in part due to the lifting of containment measures, greater availability of vaccines, strong labour markets and GDP growth. However, there remains some level of uncertainty, particularly around supply chain disruptions from recent COVID-19 related lockdowns in many large cities in China. Supply chain disruptions have been further exacerbated by geopolitical tensions, in particular the conflict between Russia and Ukraine, as have inflationary and trade policy pressures, which all pose risks to the global economic outlook. In April 2022, the International Monetary Fund ("**IMF**") projected global growth of 3.6% in calendar year 2022, down 0.8% from its January forecast, reflecting downward revisions to the forecast due to the economic effects caused by the conflict between Russia and Ukraine. While tensions between Russia and Ukraine remain elevated and the outcome of the conflict remains uncertain, the Issuer's exposure to Russia and Ukraine is extremely limited, as it does not have operations in these countries, consistent with its strategy and risk appetite. While the Issuer's diversified business model, as well as its product and geographic diversification, continue to help mitigate the risk posed by global uncertainty and in particular its effect on the Canadian and U.S. economies, it may still have an adverse impact on the Issuer's financial performance and condition.

(ii) Consumer protection

On August 18, 2021, the Canadian federal government published the Financial Consumer Protection Framework Regulations which are the underlying regulations to support the new Financial Consumer Protection Framework ("**FCPF**"). The FCPF includes existing consumer provisions of the Bank Act and Regulations, with substantive revisions and new prescriptive obligations, particularly around areas such as complaint handling, consent, and disclosure. The coming into force date for the consumer provisions of the Framework was June 30, 2022. The Issuer is in compliance with all material aspects of the FCPF.

(iii) Minimum qualifying rates for insured and uninsured mortgages in Canada

The current minimum qualifying rate for uninsured mortgages is the greater of the mortgage contract rate plus 2% or 5.25%. OSFI also announced that it will review and communicate the qualifying rate at a minimum annually, every December. The Department of Finance Canada, who is responsible for setting the benchmark rate for qualifying insured mortgages, also announced that it would align the rate for insured mortgages with the rate set by OSFI for uninsured mortgages and that this new rate would apply to insured mortgages approved on June 1, 2021 or later. The minimum qualifying rate for insured mortgages will be subject to review and periodic adjustment.

(iv) Interest rate benchmark reform

London Interbank Offered Rate ("**LIBOR**") is the most widely referenced benchmark interest rate across the globe for derivatives, bonds, loans and other floating rate instruments; however, there is a regulator-led push to transition the market away from LIBOR and certain other benchmark rates to alternative benchmark rates ("**ABRs**") that are based on actual overnight transactions. On March 5, 2021, the FCA, the regulator of the ICE Benchmark Administration ("**IBA**") which administers LIBOR, announced the permanent cessation or loss of representativeness of all 35 LIBOR benchmark settings currently published by the IBA as of December 31, 2021 or June 30, 2023.

Details related to certain settings to which the Issuer is exposed are noted below.

- Publication of the 1-week and 2-month USD LIBOR settings ceased immediately after December 31, 2021. Publication of the overnight and 12-month USD LIBOR settings will cease immediately after June 30, 2023, while the 1-month, 3-month and 6-month USD LIBOR settings will no longer be representative of the underlying market and economic reality they are intended to measure after June 30, 2023. The FCA may consult on requiring the IBA to publish 1-month, 3-month and 6-month USD LIBOR settings after the end of June 2023 on a non-representative "synthetic" basis.

- Publication of the overnight, 1-week, 2-month and 12-month GBP LIBOR settings ceased immediately after December 31, 2021, while the 1-month, 3-month and 6-month GBP LIBOR settings were no longer representative of the underlying market and economic reality they were intended to measure after December 31, 2021. The FCA will require the IBA to continue to publish 1, 3 and 6 month GBP LIBOR settings until the end of 2022 on a non-representative "synthetic" basis.

The FCA announcement engaged contractual triggers for the calculation and future application of fallback provisions related to the Issuer's LIBOR linked products, including certain loans, bonds and derivatives.

Additionally, on June 22, 2021, OSFI issued a letter setting out their expectation that Federally Regulated Financial Institutions ("**FRFIs**") would stop using USD LIBOR settings as soon as possible and would not enter into new transactions referencing these rates after December 31, 2021. OSFI further expected FRFIs to prioritize system and model updates to accommodate ABRs by December 31, 2021, and be fully prepared to transact in ABRs that are available in markets in which the FRFI operates by December 31, 2021.

On May 16, 2022, Refinitiv Benchmark Services (UK) Limited ("**RBSL**"), the administrator of the Canadian Dollar Offered Rate ("**CDOR**"), announced that the calculation and publication of all remaining tenors of CDOR will permanently cease after June 28, 2024. Concurrently, OSFI published their expectation that FRFIs transition all new derivatives and securities to an alternative benchmark rate by June 30, 2023, with no new CDOR exposure after that date, with limited exceptions for risk management requirements. Furthermore, OSFI also expects all loan agreements referencing CDOR to be transitioned by June 28, 2024.

(v) Client focused reforms

The Canadian Securities Administrators published amendments to National Instrument 31-103 to implement the Client Focused Reforms ("**Reforms**"), which are intended to increase the standard of conduct required for Canadian securities registrants. The Reforms enhance core requirements relating to conflicts of interest, suitability, know-your-product and know-your-client requirements, and also introduce new requirements relating to relationship disclosure, training and recordkeeping. The changes came into effect in two phases: the first phase relating to conflicts of interest and the related disclosure requirements came into effect on June 30, 2021, and the second phase relating to the remaining requirements came into effect on December 31, 2021. The requirements primarily impact the Issuer's Personal & Commercial Banking and Wealth Management platforms. The Issuer is well positioned to comply with the requirements.

(vi) Government of Canada Budget 2022

On April 7, 2022, the Government of Canada presented its 2022 Budget, which included measures focused on ensuring banking and life insurers' groups help pay a portion of the costs of the Canadian federal government's COVID-19 pandemic response. These proposed measures include a Canada Recovery Dividend ("**CRD**"), a one-time 15% tax for 2022 determined based on 2021 taxable income above $1 billion and payable in equal installments over five years, as well as a permanent increase in the corporate income tax rate of 1.5% on taxable income above $100 million that would apply to taxation years that end after April 7, 2022. Legislation relating to these proposed measures has yet to be issued and timing of enactment remains uncertain. While the ultimate impact will depend on the final legislation, the CRD is expected to reduce the Issuer's net income when substantively enacted. The CRD is also expected to reduce the Issuer's CET1 ratio.

(vii) *Climate-related regulatory activity*

Climate change regulations, frameworks, and guidance that apply to banks, insurers and asset managers are rapidly evolving. The Issuer continues to monitor the development of applicable laws in this area and the evolution of disclosure requirements for public issuers, including the Government of Canada's recent announcement requiring banks and insurance companies to provide disclosures on their climate-related risks and exposures beginning in 2024, the proposed National Instrument 51-107 – Disclosure of Climate-related Matters issued by the Canadian Securities Administrators intended to introduce climate-related disclosure requirements for reporting issuers in Canada, the SEC's proposed rule changes that would require many registrants to include certain climate-related disclosures in their regulatory filings, including the financial statements, and the International Sustainability Standards Board's proposed standards for climate-related disclosures and general sustainability related disclosures.

(viii) *U.S. regulatory initiatives*

Policymakers continue to evaluate and implement reforms to various U.S. financial regulations, which could result in either expansion or reduction to the U.S. regulatory requirements and associated changes in compliance costs. On January 1, 2021, the U.S. Congress enacted the Anti-Money Laundering Act of 2020 (AMLA) which represents a comprehensive set of reforms to U.S. anti-money laundering laws. Regulations pertaining to this legislation have yet to be issued; the extent, timing and impact of which are unknown at this time. The Issuer will continue to monitor developments and any resulting implications for it.

(ix) *European regulatory reform*

EU Sustainability-Related Disclosures Regulation requires financial services firms to disclose their approaches to considering environmental, social and governance factors as part of their advice and investment decision processes. These requirements were effective on March 10, 2021 and to date there has been no material impact on the Issuer; however, the Issuer will continue to monitor future guidance and the impact, if any, on it.

All the regulations noted in (i) to (ix) above could increase compliance costs for the Issuer and the interpretation or application of these regulations could negatively impact the way in which the Issuer operates and consequently negatively impact its financial performance and condition and prospects.

5. Strategic risks

5.1 Strategic risk

Strategic risk is the risk that the Issuer or particular business areas of the Issuer will make inappropriate strategic choices, or will be unable to successfully implement selected strategies or achieve the expected benefits. For more information on the Issuer's strategic goals in each of its business segments, see pages 28, 33, 39, 42, and 44 of the 2021 MD&A incorporated by reference into the Registration Document. Business strategy is a major driver of the Issuer's risk appetite and consequently the strategic choices the Issuer makes in terms of business mix determine how the Issuer's risk profile changes. The Issuer's ability to execute on its objectives and strategic goals will influence its financial performance. If the Issuer is unable to successfully implement selected strategies or related plans and decisions, if the Issuer makes inappropriate strategic choices or if the Issuer makes a change to its strategic goals, its financial performance and condition could be adversely affected.

5.2 Reputation risk

Reputation risk is the risk of an adverse impact on stakeholders' perception of the Issuer due to (i) the actions or inactions of the Issuer, its employees, third-party service providers, or clients, (ii) the perceived misalignment of these actions or inactions with stakeholder expectations of the Issuer, or (iii) negative public sentiment towards a global or industry issue. The Issuer's reputation is rooted in the perception of its stakeholders, and the trust and loyalty they place in the Issuer is core to the Issuer's purpose as a financial services organization. A strong and trustworthy reputation will generally strengthen the Issuer's market position, reduce the cost of capital, increase shareholder value, strengthen its resiliency, and help attract and retain top talent. Conversely, damage to the Issuer's reputation can result in reduced share price and market capitalization, increased cost of capital, loss of strategic flexibility, inability to enter or expand into markets, loss of client loyalty and business, regulatory fines and penalties, restrictive agreements with regulators or prosecutors, or criminal prosecutions. The sources of reputation risk are widespread; risk to the Issuer's reputation can occur in connection with credit, regulatory, legal and operational risks. The Issuer can also experience reputation risk from a failure to maintain an effective control environment, exhibit good conduct and maintain appropriate culture practices.

5.3 Competitive risk

Competitive risk is the risk of an inability to build or maintain a sustainable competitive advantage in a given market or markets, and includes the potential for loss of market share due to competitors offering superior products and services. Competitive risk can arise within or outside the financial sector, from traditional or non-traditional competitors, domestically or globally. There is intense competition for clients among financial services companies in the markets in which the Issuer operates. Client loyalty and retention can be influenced by a number of factors, including new technology used or services offered by the Issuer's competitors, relative service levels and prices, product and service attributes, its reputation, actions taken by its competitors, and adherence with competition and anti-trust laws. Other companies, such as insurance companies and non-financial companies, as well as new technological applications, are increasingly offering services traditionally provided by banks. This competition could also reduce the Issuer's revenue which could adversely affect its results.

6. Macroeconomic risks

6.1 Impact of pandemic risk factor

Pandemics, epidemics or outbreaks of an infectious disease in Canada or worldwide could have an adverse impact on the Issuer's business, including changes to the way it operates, and on its financial results and condition. The spread of the COVID-19 pandemic, given its severity and scale, has affected and may continue to adversely affect the Issuer's business and its clients to varying degrees, and also continues to pose risks to the global economy. At the onset of the COVID-19 pandemic, governments and regulatory bodies in affected areas imposed a number of measures designed to contain the COVID-19 pandemic, including widespread business closures, social distancing protocols, travel restrictions, school closures, quarantines, and restrictions on gatherings and events. While rising vaccination rates have supported a substantial or full easing of containment measures in a number of regions, the extent of containment measures and progress towards reopening continues to vary and fluctuate across different regions. As a result, containment measures continue to impact the macroeconomic environment and global economic activity, including the pace and magnitude of recovery. As the impacts of the COVID-19 pandemic continue to evolve, the prolonged effects of the disruption continue to have an impact on the Issuer's business strategies and initiatives, and could adversely affect its financial results.

Governments, monetary authorities, regulators and financial institutions, including the Issuer, have taken and continue to take actions in support of the economy and financial system. These actions include fiscal, monetary and other financial measures to increase liquidity, and provide financial aid to individual, small business, commercial and corporate clients. The Issuer expects that these governments, monetary authorities, regulators, and institutions will continue to assess the need for these programs and measures. Additionally, the Issuer implemented various temporary relief programs beyond the available government programs to further support its clients in financial need. Although the temporary relief programs have largely concluded, the Issuer has assessed and will continue to assess the needs of each individual client and continue to provide support to clients on a case by case basis. For more information on these programs, refer to the Relief programs section on pages 18 through 20 of the Issuer's 2021 MD&A and the Liquidity and funding risk and Capital management sections on pages 100 through 109 of the Issuer's 2021 MD&A, which are incorporated by reference into the Registration Document.

Uncertainty remains as to the full impacts of the COVID-19 pandemic on the global economy, financial markets, and the Issuer, including on its financial results, regulatory capital and liquidity ratios and ability to meet regulatory and other requirements. The ultimate impacts will depend on future developments that are highly uncertain and cannot be predicted, including the scope, severity, duration and additional subsequent waves of the COVID-19 pandemic, as well as the effectiveness of actions and measures taken by government, monetary and regulatory authorities and other third parties. Despite positive developments, uncertainty remains regarding new variants of COVID-19, the potential impact of vaccine hesitancy, and global vaccine supply and availability, including uneven vaccine access.

The COVID-19 pandemic has and may continue to result in disruptions to some of the Issuer's clients and the way in which it conducts its business and could continue to adversely impact its business operations and the quality and continuity of service to clients. The Issuer has taken proactive measures through its business continuity plans to adapt to the ongoing work from home arrangements and carefully plan the return to premise for some of its employees, and are maintaining its focus on the well-being of its employees and its ability to serve clients.

In addition to the impact that the COVID-19 pandemic has had and continues to have on the Issuer's business, it may also continue to increase financial stress, possibly arising from support programs coming to an end, on some of its clients. This, in conjunction with operational constraints due to the impacts of social distancing, could lead to increased pressure on the financial performance of some of the Issuer's clients, which, to some extent, creates uncertainty around potential future expected credit losses for the Issuer.

If the COVID-19 pandemic is further prolonged, including the possibility of additional subsequent waves, or further diseases emerge that give rise to similar effects, the adverse impact on the economy could deepen and could potentially result in volatility and declines in financial markets. Moreover, it remains uncertain how the macroeconomic environment, and societal and business norms will be impacted following the COVID-19 pandemic. Unexpected developments in financial markets, regulatory environments, or consumer behaviour and confidence may also have adverse impacts on the Issuer's financial results and condition, business operations and reputation, for a substantial period of time.

The Issuer is closely monitoring the potential continued effects and impacts of the COVID-19 pandemic, which continues to be an evolving situation.

In virtually all aspects of its operations, the Issuer's view of risks is not static as its business activities expose it to a wide variety of risks. Consistent with its Enterprise Risk Management Framework ("**ERMF**"), the Issuer actively manages its risks to help protect and enable its businesses. Additionally, the Issuer continues to evaluate the impacts that the COVID-19 pandemic has had and continues to have on its business, including the impact on its top and emerging risks, operational and reputational risks as well as credit, market and liquidity and funding risks. For further details on the Issuer's top and emerging and operational risks, refer to the risk sections above.

6.2 Systemic Risk

Systemic risk is the risk that the financial system as a whole, or a major part of it – either in an individual country, a region, or globally – is put in real and immediate danger of collapse or serious damage due to an unforeseen event causing a substantive shock to the financial system with the likelihood of material damage to the economy, and which would result in financial, reputation, legal or other risks for the Issuer.

Systemic risk is considered to be the least controllable risk facing the Issuer, leading to increased vulnerabilities as experienced during the 2008 global financial crisis and the COVID-19 pandemic. The Issuer's ability to mitigate systemic risk when undertaking business activities is limited, other than through collaborative mechanisms between key industry participants, and, as appropriate, the public sector and regulators to reduce the frequency and impact of these risks. The two most significant measures in mitigating the impact of systemic risk are diversification and stress testing.

The Issuer's diversified business model, portfolios, products, activities and funding sources help mitigate the potential impacts from systemic risk as well as having established risk limits to ensure its portfolio is diversified, and concentration risk is reduced and remains within its risk appetite.

Stress testing involves consideration of the simultaneous movements in a number of risk factors. It is used to ensure the Issuer's business strategies and capital planning are robust by measuring the potential impacts of credit, market, liquidity, and operational risks on it, under adverse economic conditions. The Issuer's enterprise-wide stress testing program evaluates the potential effects of a set of specified changes in risk factors, corresponding to exceptional but plausible adverse economic and financial market events. These stress scenarios are evaluated across the organization, and results are integrated to develop an enterprise-wide view of the impacts on the Issuer's financial results and capital requirements. For further details on the Issuer's stress testing, refer to the Enterprise risk management section on pages 56 through 58 of the Issuer's 2021 MD&A incorporated by reference into the Registration Document.

The Issuer's financial results are affected by the business and economic conditions in the geographic regions in which it operates. These conditions include consumer saving and spending habits as well as consumer borrowing and repayment patterns, business investment, government spending, exchange rates, sovereign debt risks, the level of activity and volatility of the capital markets, strength of the economy and inflation. Given the importance of the Issuer's Canadian and U.S. operations, a continued economic downturn may largely affect its personal and business lending activities and may result in higher provisions for credit losses. Deterioration and uncertainty in global capital markets could result in continued high volatility that would impact results in Capital Markets, while in Wealth Management weaker market conditions could lead to lower average fee-based client assets and transaction volumes. In addition, worsening financial and credit market conditions may adversely affect the Issuer's ability to access capital markets on favourable terms and could negatively affect its liquidity, resulting in increased funding costs and lower transaction volumes in Capital Markets and Investor & Treasury Services.

The Issuer's financial results are also sensitive to changes in interest rates. Central banks globally reduced benchmark interest rates in 2020, largely in response to the impact of the COVID-19 pandemic in an effort to provide support to maintain the resilience and stability of the financial systems. While rates remained low in 2021, as inflation has surged higher and unemployment rates have continued to fall, central banks in Canada, the U.S. and the U.K. have increased interest rates and are expected to continue raising rates at the most aggressive pace in decades. Low interest rates generally unfavourably impact the Issuer's net interest income as a result of spread compression across most of the Issuer's businesses, while an increase in interest rates would benefit its businesses. A significant increase in interest rates could also adversely impact household balance sheets, leading to credit deterioration which could negatively impact the Issuer's financial results, particularly in some of its Personal & Commercial Banking and Wealth Management businesses.

7. Overview of other risks

In addition to the risks described above, there are other risk factors, described below, which may adversely affect the Issuer's businesses and financial results. The following discussion is not exhaustive as other factors could adversely affect the Issuer's results.

Tax risk and transparency

Tax risk refers to the risk of loss related to unexpected tax liabilities. The tax laws and systems that are applicable to the Issuer are complex and wide ranging. As a result, the Issuer ensures that any decisions or actions related to tax always reflect its assessment of the long-term costs and risks involved, including their impact on the Issuer's reputation and its relationship with clients, shareholders, and regulators.

The Issuer's tax strategy is designed to provide transparency and support its business strategy, and is aligned with the Issuer's corporate vision and values. The Issuer seeks to maximize shareholder value by structuring its businesses in a tax-efficient manner while considering reputational risk by being in compliance with all laws and regulations. The Issuer's policy requires that it:

- Act with integrity and in a straightforward, open and honest manner in all tax matters;
- Ensure tax strategy is aligned with the Issuer's business strategy supporting only bona fide transactions with a business purpose and economic substance;
- Ensure all intercompany transactions are conducted in accordance with applicable transfer pricing requirements;
- Ensure the Issuer's full compliance and full disclosure to tax authorities of its statutory obligations; and
- Endeavour to work with the tax authorities to build positive long-term relationships and where disputes occur, address them constructively.

With respect to assessing the needs of its clients, the Issuer considers a number of factors including the purpose of the transaction. The Issuer seeks to ensure that it only supports bona fide client transactions with a business purpose and economic substance. Should the Issuer become aware of client transactions that are aimed at evading their tax obligations, the Issuer will not proceed with the transactions.

Given that the Issuer operates globally, complex tax legislation and accounting principles have resulted in differing legal interpretations between the respective tax authorities the Issuer deals with and itself, and the Issuer is at risk of tax authorities disagreeing with prior positions the Issuer has taken for tax purposes. When this occurs, the Issuer is committed to an open and transparent dialogue with the tax authorities to ensure a quick assessment and prompt resolution of the issues where possible. Failure to adequately manage tax risk and resolve issues with tax authorities in a satisfactory manner could adversely impact the Issuer's results, potentially to a material extent in a particular period, and/or significantly impact the Issuer's reputation.

DOCUMENTS INCORPORATED BY REFERENCE

The following documents which have previously been published are hereby incorporated in, and form part of, this Registration Document:

(a) the entire 2021 AIF (available at: *https://www.rbc.com/investor-relations/_assets-custom/pdf/aif2021.pdf*), including, without limitation, the following sections:

(i) "Description of the Business – General Summary" on pages 2 and 3;

(ii) "Description of the Business – Competition" on page 3; and

(iii) "Appendix A – Principal Subsidiaries" on page 27; and

(b) the following sections of the Bank's 2021 Annual Report (the "**2021 Annual Report**") (available at: *https://www.rbc.com/investor-relations/_assets-custom/pdf/ar_2021_e.pdf*) for the year ended October 31, 2021:

(i) the audited annual consolidated financial statements, which comprise the consolidated balance sheets as of October 31, 2021 and 2020, and the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for the years then ended, including the related notes, prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board on pages 133 through 225, together with Management's Report on Internal Control over Financial Reporting as of October 31, 2021 on page 125, the Independent Auditor's Report and the Report of Independent Registered Public Accounting Firm, each dated November 30, 2021, on pages 126 through 129 and 130 through 132, respectively, (the "**2021 Audited Consolidated Financial Statements**");

(ii) the entire Management's Discussion and Analysis for the year ended October 31, 2021 (the "**2021 MD&A**") on pages 13 through 122, including, without limitation, a description of risk factors related to the Bank and its business, and the steps taken to manage such risks, under the risk sections on pages 52 to 99;

(iii) the information about tax examinations and assessments and legal and regulatory matters to which the Issuer and its Subsidiaries are or have been subject in Note 21 on page 210 to 212 and Note 24 on pages 215 and 216, respectively; and

the remainder of the 2021 Annual Report is either not relevant for investors or covered elsewhere in this Registration Document and is not incorporated by reference;

(c) the following sections of the Bank's Second Quarter 2022 Report to Shareholders (the "**Second Quarter 2022 Report to Shareholders**") (available at: *https://www.rbc.com/investor-relations/_assets-custom/pdf/2022q2_report.pdf*):

(i) the entire Management's Discussion and Analysis (the "**Second Quarter 2022 MD&A**") on pages 2 to 47;

(ii) the unaudited interim condensed consolidated financial statements, which comprise the unaudited interim condensed consolidated balance sheet of the Bank as of April 30, 2022 and the related unaudited interim condensed consolidated statements of income, comprehensive income, changes in equity, and cash flows for the three and six months ended April 30, 2022 and April 30, 2021 and selected explanatory notes (the "**Second Quarter 2022 Unaudited Interim Condensed Consolidated Financial Statements**"), set out on pages 49 to 78 presented in compliance with International Accounting Standard (IAS) 34 Interim Financial Reporting, which have not been audited or reviewed by auditors pursuant to the International Standard on Review Engagements (UK and Ireland) 2410; and

(iii) the information about legal proceedings and regulatory matters to which the Issuer and its subsidiaries are or have been subject in Note 12 on page 75;

the remainder of the Issuer's Second Quarter 2022 Report to Shareholders either is not relevant for an investor or is covered elsewhere in this Registration Document and is not incorporated by reference;

provided that any statement contained in a document, all or the relative portion of which is incorporated by reference, shall be deemed to be modified or superseded for the purpose of this document to the extent that a statement contained herein or in any supplement hereto filed under Article 23 of the UK Prospectus Regulation, including any document incorporated therein by reference, modifies or supersedes such earlier statement (whether expressly, by implication or otherwise).

Information, documents or statements expressed to be incorporated by reference into, or that form part of one or more of, the documents noted above form part of this document but do not form part of the Registration Document of the Issuer approved by the FCA for purposes of the UK Prospectus Regulation.

Copies of this Registration Document and the documents incorporated by reference herein and any supplement hereto approved by the FCA can be viewed on the Issuer's website at *https://www.rbc.com/investor-relations/european-senior-notes-program.html* and on the website of the Regulatory News Service operated by the London Stock Exchange at *http://www.londonstockexchange.com/exchange/news/market-news/market-news-home.html* under the name of the Issuer and the headline "Publication of Prospectus"; and (ii) obtained on written request and without charge from (a) the Issuer at 200 Bay Street, Toronto, Ontario, Canada M5J 2J5, Attention: Senior Vice President, Wholesale Finance and Investor Relations, (b) the office of the Issuing and Paying Agent, The Bank of New York Mellon, London Branch, One Canada Square, London E14 5AL, United Kingdom, Attention: Manager, EMEA Corporate & Sovereign, and (c) at the specified offices of any other paying agent (together with The Bank of New York Mellow, London Branch, the "**Paying Agents**") appointed in connection with the issuance of securities with respect to which the Registration Document forms part of a prospectus prepared by the Issuer or relating to such securities. For the avoidance of doubt, unless specifically incorporated by reference into this Registration Document, the information contained on the websites referred to above is not incorporated in, and does not form part of, this Registration Document or a prospectus.

DESCRIPTION OF ROYAL BANK OF CANADA

The information appearing below is supplemented by the more detailed information contained in the documents incorporated by reference in this Registration Document. See paragraphs (a), (b) and (c) of the section entitled "Documents Incorporated by Reference".

History and Development of the Issuer

Royal Bank of Canada (the "**Bank**") is a Schedule I bank under the *Bank Act* (Canada) (the "**Bank Act**"), which constitutes its charter. The Bank was created as Merchants Bank in 1864 and was incorporated under the "Act to Incorporate the Merchants' Bank of Halifax" assented to June 22, 1869. The Bank changed its name to The Royal Bank of Canada in 1901 and to Royal Bank of Canada in 1990.

The Bank's corporate headquarters are located at Royal Bank Plaza, 200 Bay Street, Toronto, Ontario, Canada M5J 2J5 and the telephone contact number is +1 (416) 974-5151. Its head office is located at 1 Place-Ville Marie, Montreal, Quebec, Canada. The Bank's website can be found at *http://www.rbc.com*. For the avoidance of doubt, unless specifically incorporated by reference into this Registration Document, the information contained on the websites referred to above is not incorporated in, and does` not form part of, the Registration Document or a prospectus.

On November 21, 2017, the Bank was added to the list of global systemically important banks ("**G-SIBs**") by the Financial Stability Board ("**FSB**") and was designated a G-SIB by the FSB. On November 23, 2021 the Issuer was re-designated as a G-SIB by the FSB. The Issuer does not expect any significant impacts resulting from the designation.

RBC Group and its Principal Activities and Markets

The Bank's business and powers are set out in Part VIII of the Bank Act. In particular, section 409 provides that, subject to the Bank Act, the Bank shall not engage in or carry on business other than the business of banking and such business as generally appertains thereto.

The RBC Group is a global financial institution with a purpose-driven, principles-led approach to delivering leading performance. The RBC Group's success comes from the 89,000+ employees who leverage their imaginations and insights to bring its vision, values and strategy to life so it can help its clients thrive and communities prosper. As Canada's biggest bank, and one of the largest in the world based on market capitalization, the RBC Group has a diversified business model with a focus on innovation and providing exceptional experiences to the Issuer's 17 million clients in Canada, the U.S. and 27 other countries. As at April 30, 2022, the RBC Group has total assets of approximately C$1.849 trillion and total equity attributable to shareholders of approximately C$104.304 billion.

The RBC Group's business segments are Personal & Commercial Banking, Wealth Management, Insurance, Investor & Treasury Services and Capital Markets. Additional information about the RBC Group's business and each segment (including segment results) can be found under "Overview and outlook" beginning on page 14 and under "Business segment results" beginning on page 24 of the Issuer's 2021 Annual Report, which sections form part of the 2021 MD&A

incorporated by reference herein and under “Overview and outlook” beginning on page 2 and under “Business segment results” beginning on page 11 of the Issuer’s Second Quarter 2022 Report to Shareholders, which sections form part of the Second Quarter 2022 MD&A incorporated by reference herein.

The Bank’s common shares are listed on the Toronto Stock Exchange in Canada, New York Stock Exchange in the U.S. and the SIX Swiss Exchange in Switzerland. The trading symbol is “RY”. Its preferred shares are listed on the Toronto Stock Exchange.

Except as indicated in Notes 18 and 19 of the 2021 Audited Consolidated Financial Statements, there are no other convertible bonds or options on the Bank’s common or preferred shares outstanding which have been issued by the Bank or by group companies of the Bank.

Pursuant to the Bank Act, the Issuer is not permitted to hold its own shares.

Competition

The principal markets in which the Bank competes as at October 31, 2021 are described in the 2021 MD&A incorporated by reference herein.

Organizational Structure

The Bank’s principal subsidiaries as at October 31, 2021 are listed in “Appendix A – Principal Subsidiaries” of the Issuer’s 2021 AIF, which is incorporated by reference herein.

ISSUER RATINGS

Each of the Bank's solicited debt and preferred share ratings as at the date of this Registration Document are listed below:

	Moody's USA	S&P USA	Fitch	DBRS
	Rating	**Rating**	**Rating**	**Rating**
Legacy Senior Long-term Debt[1]	Aa1	AA-	AA	AA (high)
Senior Long-term Debt[2]	A1	A	AA-	AA
Subordinated Debt	A3	A	A	AA (low)
NVCC Subordinated Debt[3]	A3(hyb)	A-	A	A
Short-term Debt	P-1	A-1+	F1+	R-1 (high)
Preferred Shares	Baa2	BBB+	-	Pfd-1 (low)
NVCC Preferred Shares[3]	Baa2(hyb)	BBB	-	Pfd-2(high)
Outlook	Stable	Stable	Stable	Stable

Notes:
[1] Includes senior long-term debt issued prior to September 23, 2018 and senior long-term debt issued on or after September 23, 2018 which is excluded from the Canadian Bank Recapitalization ("Bail-in") regime.
[2] Includes senior long-term debt issued on or after September 23, 2018 which is subject to conversion under the Bail-in regime.
[3] Non-viability contingent capital or NVCC.

Credit ratings including stability or provisional ratings (collectively, "**Ratings**") are not recommendations to purchase, sell or hold a security or financial obligation inasmuch as they do not comment on market price or suitability for a particular investor. Ratings may not reflect the potential impact of all risks on the value of securities or financial obligation. In addition, real or anticipated changes in the rating assigned to a security or financial obligation will generally affect the market value of that security or financial obligation. Ratings are determined by the rating agencies based on criteria established from time to time by them and are subject to revision or withdrawal at any time by the rating organization. Each Rating listed in the chart above should be evaluated independently of any other Rating applicable to the Issuer's debt and preferred shares. As is customary, the Issuer pays ratings agencies to assign Ratings for the parent company as well as its subsidiaries, and for certain other services.

FINANCIAL SUMMARY

With the exception of the figures for return on common equity, information in the tables below for the years ended October 31, 2021 and 2020 and for the six-month periods ended April 30, 2022 and 2021 have been extracted from the Issuer's 2021 audited consolidated financial statements, prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board ("**IFRS**") and the unaudited interim condensed consolidated financial statements for the six-month period ended April 30, 2022 and 2021 presented in compliance with IAS 34 Interim Financial Reporting, respectively, all of which are incorporated by reference in this Registration Document. The amounts under return on common equity for the years ended October 31, 2021 and 2020 and for the six-month periods ended April 30, 2022 and 2021 have been extracted from the Issuer's 2021 MD&A and its Second Quarter 2022 MD&A, respectively.

An audit comprises audit tests and procedures deemed necessary for the purpose of expressing an opinion on financial statements taken as a whole. An audit opinion has not been expressed on individual balances of accounts or summaries of selected transactions in the table below.

Selected Consolidated Balance Sheet Information

	As at April 30, 2022	As at October 31, 2021	As at October 31, 2020
	(in millions of Canadian dollars)		
Loans, net of allowance for loan losses	774,464	717,575	660,992
Total assets	1,848,572	1,706,323	1,624,548
Deposits	1,151,597	1,100,831	1,011,885
Other liabilities	579,635	494,471	514,107
Subordinated debentures	10,276	9,593	9,867
Non-controlling interests	101	95	103
Equity attributable to shareholders	104,304	98,667	86,664

Consolidated and Condensed Consolidated Statement of Income Information[2]

	Six-months ended April 30, 2022	Six-months ended April 30, 2021	Year ended October 31, 2021	Year ended October 31, 2020
	(in millions of Canadian dollars, except per share amounts and percentage amounts)			
Net interest income	10,545	9,889	20,002	20,835
Non-interest income	13,741	14,672	29,691	26,346
Total revenue	24,286	24,561	49,693	47,181
Provision for credit losses (PCL)	(237)	14	(753)	4,351
Insurance policyholder benefits, claims and acquisition expense	817	1,555	3,891	3,683
Non-interest expense	13,014	12,921	25,924	24,758
Net income	8,348	7,862	16,050	11,437
Earnings per share				
– basic	$5.81	$5.42	$11.08	$7.84
– diluted	$5.80	$5.42	$11.06	$7.82
Return on common equity (ROE)[1,2]	17.9%	19.0%	18.6%	14.2%

1. ROE represents net income available to common shareholders, expressed as a percentage of average common equity. This measure does not have a standardized meaning under generally accepted accounting principles (GAAP) and may not be comparable to similar measures disclosed by other financial institutions. For further details, refer to the Key performance and non-GAAP measures section of the Issuer's 2021 Management's Discussion and Analysis in the Issuer's 2021 Annual Report and the Key performance and non-GAAP measures section of the Issuer's Second Quarter 2022 Management's Discussion and Analysis in the Issuer's Second Quarter 2022 Report to Shareholders.

2. Average amounts are calculated using methods intended to approximate the average of the daily balances for the period. This includes average common equity used in the calculation of ROE. For further details, refer to the Key performance and non-GAAP measures section of the Issuer's 2021 Management's Discussion and Analysis in the Issuer's 2021 Annual Report and the Key performance and non-GAAP measures section of the Issuer's Second Quarter 2022 Management's Discussion and Analysis in the Issuer's Second Quarter 2022 Report to Shareholders.

DIRECTORS

The Directors of the Bank, each of whose address is the executive offices of the Bank, Royal Bank Plaza, 200 Bay Street, South Tower, Toronto, Ontario, Canada M5J 2J5, their function in the Bank and their other principal activities (if any) outside the Bank are as follows:

Name	Function	Other Principal Activities outside the Bank
Andrew A. Chisholm Toronto, Ontario	Director	Corporate Director
Jacynthe Côté Candiac, Québec	Director	Chair of the Board of Hydro-Québec
Toos N. Daruvala New York, New York	Director	Corporate Director
David F. Denison Toronto, Ontario	Director	Chair of the Board of Element Fleet Management Corp.
Cynthia Devine Toronto, Ontario	Director	Interim President and Chief Executive Officer and Chief Financial Officer, Maple Leaf Sports and Entertainment
Roberta L. Jamieson Ohsweken, Ontario	Director	Corporate Director
David I. McKay Toronto, Ontario	President and Chief Executive Officer and Director	Not applicable
Kathleen Taylor Toronto, Ontario	Chair of the Board and Director	Corporate Director
Maryann Turcke Toronto, Ontario	Director	Senior Advisor, Brookfield Infrastructure Partners L.P.
Bridget A. van Kralingen Point Pleasant Beach, New Jersey	Director	Corporate Director
Thierry Vandal Mamaroneck, New York	Director	President, Axium Infrastructure US Inc.

Frank Vettese Toronto, Ontario	Director	Co-founder of SummitNorth Advisory Corp.
Jeffery W. Yabuki Incline Village, Nevada	Director	Chairman of Sportradar AG

On July 13, 2022, the Bank announced that Mirko Bibic will be appointed to its board of directors, effective August 1, 2022. Mr. Bibic will join the Risk and Governance Committees and his principal activity outside the Bank is acting as President and CEO of BCE Inc. and Bell Canada.

There are no conflicts of interests between any duties owed to the Bank by the Directors and the private interests and/or other duties owed by these individuals. If a Director were to have a material interest in a matter being considered by the Board or any of its Committees, such Director would not participate in any discussions relating to, or any vote on, such matter.

MAJOR SHAREHOLDERS

To the extent known to the Bank, the Bank is not directly or indirectly owned or controlled by any person.

Subject to certain exceptions contained in the Bank Act, no person may be a major shareholder of a bank having equity of C$12 billion or more (which includes the Bank). A person is a major shareholder if: (a) the aggregate of the shares of any class of voting shares of the Bank beneficially owned by that person, by entities controlled by that person and by any person associated or acting jointly or in concert with that person is more than 20% of that class of voting shares, or (b) the aggregate of shares of any class of non-voting shares of the Bank beneficially owned by that person, by entities controlled by that person and by any person associated or acting jointly or in concert with that person is more than 30% of that class of non-voting shares.

Additionally, no person may have a significant interest in any class of shares of a bank (including the Bank) unless the person first receives the approval of the Minister of Finance. For purposes of the Bank Act, a person has a significant interest in a class of shares of a bank where the aggregate of any shares of the class beneficially owned by that person, by entities controlled by that person and by any person associated or acting jointly or in concert with that person exceeds 10% of all of the outstanding shares of that class of shares of such bank.

MATERIAL CONTRACTS

The Bank has not entered into any contracts outside the ordinary course of the Bank’s business which could materially affect the Bank’s obligations in respect of any securities to be issued by the Bank.

GENERAL INFORMATION

1. The Registration Document was authorized by (i) resolutions of the Board of Directors of the Issuer passed on February 29, 2012 amending and restating prior resolutions of the Board of the Issuer in respect of the Programme and Administrative Resolutions of the Board of Directors of the Issuer adopted on October 14, 2004 and most recently amended at a meeting held on May 26, 2021, and (ii) a resolution of the Board of Directors authorizing the issuance of subordinated indebtedness dated December 3, 2019, as amended on August 25, 2020, December 1, 2020 and May 26, 2021, or any subsequent resolution replacing such resolution as is specified in the relevant Final Terms. The Issuer has obtained or will obtain from time to time all necessary consents, approvals and authorizations in connection with the Registration Document.

2. Other than the matters disclosed under the subsection entitled "Tax examinations and assessments" in Note 21 of the 2021 Audited Consolidated Financial Statements set out on page 212 of the Issuer's 2021 Annual Report and the matters disclosed (with the exception of the subsection entitled "Other matters") in Note 24 of the 2021 Audited Consolidated Financial Statements set out on pages 215 and 216 of the Issuer's 2021 Annual Report and the legal and regulatory matters disclosed in Note 12 of the Second Quarter 2022 Unaudited Interim Condensed Consolidated Financial Statements set out on page 75 of the Issuer's Second Quarter 2022 Report to Shareholders and in each case incorporated by reference herein, there are no, nor have there been any governmental, legal or arbitration proceedings (including any such proceedings which are pending or threatened of which the Issuer is aware) during the twelve months prior to the date of this document which may have, or have had in the recent past, individually or in the aggregate, a significant effect on the financial position or profitability of the Issuer or of the Issuer and its subsidiaries taken as a whole.

3. Since April 30, 2022, the last day of the financial period in respect of which the most recent unaudited interim condensed consolidated financial statements of the Issuer have been published, there has been no significant change in the financial performance or financial position of the Issuer and its subsidiaries taken as a whole. Since October 31, 2021, the date of its last published audited annual consolidated financial statements, there has been no material adverse change in the prospects of the Issuer and its subsidiaries taken as a whole.

4. The independent auditor and independent registered public accounting firm of the Issuer is PricewaterhouseCoopers LLP ("**PwC**") who are Chartered Professional Accountants, and Licensed Public Accountants and are subject to oversight by the Canadian Public Accounting Board and Public Company Accounting Oversight Board (United States). PwC is also registered in the Register of Third Country Auditors maintained by the Financial Reporting Council in the UK in accordance with the requirements of Directive 2006/43/EC as it forms part of the domestic law of the UK by virtue of the EUWA. PwC is independent of the Bank within the meaning of the Rules of Professional Conduct of the Chartered Professional Accountants of Ontario and has no material interest in the Bank. The address for PwC is set out on the last page hereof.

5. The 2021 Audited Consolidated Financial Statements, prepared in accordance with IFRS, were audited in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States) by PwC. PwC expressed an unmodified opinion on the audited consolidated financial statements as at October 31, 2021 and 2020 and for the years ended October 31, 2021 and 2020 in the Independent Auditor's Report dated November 30, 2021; and also expressed an unmodified opinion on the audited consolidated financial statements as at October 31, 2021 and 2020 and for the years ended October 31, 2021 and 2020 and on the effectiveness of internal control over financial reporting as of October 31, 2021 in the Report of Independent Registered Public Accounting Firm dated November 30, 2021.

6. For so long as the Issuer may issue securities with respect to which this Registration Document forms part of a prospectus prepared by the Bank relating to such securities, copies of the following documents may be inspected free of charge at *http://www.rbc.com*, namely

    (i) the *Bank Act* (Canada) (being the charter of the Issuer) and by-laws of the Issuer;

    (ii) the latest Annual Report of the Issuer for the two most recently completed fiscal years, which includes audited annual consolidated financial statements of the Issuer, management's report on internal control over financial reporting and the auditor's reports;

    (iii) the most recent quarterly report including the unaudited interim condensed consolidated financial statements; and

    (iv) a copy of the Registration Document together with any supplement to the Registration Document.

In addition, copies of this Registration Document will be available for inspection on the website of the Regulatory News Service operated by the London Stock Exchange at http://www.londonstockexchange.com/exchange/news/market-news/market-newshome.html or the National Storage Mechanism at *https://data.fca.org.uk/#/nsm/nationalstoragemechanism*. Copies of the Bank's periodic financial reports may also be available for viewing under the name of the Issuer on the Canadian System for Electronic Document Analysis and Retrieval (SEDAR) at *www.sedar.com* (an internet based securities regulatory filing system). For the avoidance of doubt, unless specifically incorporated by reference into this Registration Document, the information contained on the websites referred to above is not incorporated in, and does not form part of, the Registration Document or a prospectus.

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