

# Management's Discussion and Analysis

December 1, 2020

The following Management's Discussion and Analysis (MD&A) presents the financial condition and operating results of National Bank of Canada (the Bank). This analysis was prepared in accordance with the requirements set out in *National Instrument 51-102, Continuous Disclosure Obligations*, released by the Canadian Securities Administrators (CSA). It is based on the audited annual consolidated financial statements for the year ended October 31, 2020 (the consolidated financial statements) and prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), unless otherwise indicated. IFRS represent Canadian generally accepted accounting principles (GAAP). This MD&A should be read in conjunction with the consolidated financial statements and accompanying notes for the year ended October 31, 2020. All amounts are presented in Canadian dollars. Additional information about the Bank, including the *Annual Information Form*, can be obtained from the Bank's website at [nbc.ca](http://nbc.ca) and SEDAR's website at [sedar.com](http://sedar.com).

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## Caution Regarding Forward-Looking Statements

From time to time, the Bank makes written forward-looking statements such as those contained in this document, in other filings with Canadian securities regulators, and in other communications. In addition, representatives of the Bank may make forward-looking statements orally to analysts, investors, the media and others. All such statements are made in accordance with applicable securities legislation in Canada and the United States. Forward-looking statements in this document may include, but are not limited to, statements with respect to the economy—particularly the Canadian and U.S. economies—market changes, the Bank's objectives, outlook and priorities for fiscal year 2021 and beyond, its strategies or future actions for achieving them, expectations for the Bank's financial condition, the regulatory environment in which it operates, the potential impacts of—and the Bank's response to—the COVID-19 pandemic, and certain risks it faces. These forward-looking statements are typically identified by future or conditional verbs or words such as "outlook", "believe", "foresee", "forecast", "anticipate", "estimate", "project", "expect", "intend", "plan", and similar expressions of future or conditional verbs such as "will", "may", "should", "could" or "would". Such forward-looking statements are made for the purpose of assisting the holders of the Bank's securities in understanding the Bank's financial position and results of operations as at and for the periods ended on the dates presented, as well as the Bank's vision, strategic objectives and its financial performance targets, and may not be appropriate for other purposes.

By their very nature, these forward-looking statements require assumptions to be made and involve inherent risks and uncertainties, both general and specific. Assumptions about the performance of the Canadian and U.S. economies in 2021, including in the context of the COVID-19 pandemic, and how that will affect the Bank's business are among the main factors considered in setting the Bank's strategic priorities and objectives including provisions for credit losses. In determining its expectations for economic conditions, both broadly and in the financial services sector in particular, the Bank primarily considers historical economic data provided by the governments of Canada, the United States and certain other countries in which the Bank conducts business, as well as their agencies.

There is a strong possibility that the Bank's express or implied predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that its assumptions may not be confirmed and that its vision, strategic objectives and financial performance targets will not be achieved. The Bank recommends that readers not place undue reliance on forward-looking statements, as a number of factors, many of which are beyond the Bank's control, including the impacts of the COVID-19 pandemic, could cause actual results to differ significantly from the expectations, estimates or intentions expressed in these statements. These factors include credit risk, market risk, liquidity and funding risk, operational risk, regulatory compliance risk, reputation risk, strategic risk and environmental and social risk, all of which are described in more detail in the Risk Management section beginning on page 68 of this Annual Report, and more specifically, general economic environment and financial market conditions in Canada, the United States and certain other countries in which the Bank conducts business; regulatory changes affecting the Bank's business; geopolitical and sociopolitical uncertainty; important changes in consumer behaviour; the housing and household indebtedness situation and real estate market in Canada; changes in the Bank's customers' and counterparties' performance and creditworthiness; changes in the accounting policies the Bank uses to report its financial condition, including uncertainties associated with assumptions and critical accounting estimates; tax laws in the countries in which the Bank operates, primarily Canada and the United States; changes to capital and liquidity guidelines and to the manner in which they are to be presented and interpreted; changes to the credit ratings assigned to the Bank; potential disruption to key suppliers of goods and services to the Bank; potential disruptions to the Bank's information technology systems, including evolving cyberattack risk as well as identity theft and theft of personal information; and possible impacts of catastrophic events affecting local and global economies, including natural disasters and public health emergencies such as the COVID-19 pandemic. Statements about the expected impacts of the COVID-19 pandemic on the Bank's business, results of operations, reputation, financial position and liquidity, and on the global economy may be inaccurate and differ, possibly materially, from what is currently expected as they depend on future developments that are highly uncertain and cannot be predicted. The foregoing list of risk factors is not exhaustive. Additional information about these factors can be found in the Risk Management section and the COVID-19 Pandemic section of this Annual Report. Investors and others who rely on the Bank's forward-looking statements should carefully consider the above factors as well as the uncertainties they represent and the risk they entail. Except as required by law, the Bank does not undertake to update any forward-looking statements, whether written or oral, that may be made from time to time, by it or on its behalf.

## COVID-19 Pandemic

COVID-19 emanates from an emerging infectious disease, namely, the coronavirus disease. The coronavirus strain was detected in November 2019 in the city of Wuhan in central China, and then spread throughout the world. In early January 2020, the Chinese government implemented strict lockdown procedures and forced several cities—and then an entire region—to remain under lockdown, closing many public sites and enforcing considerable sanitary measures. On January 13, 2020, a first case was reported outside mainland China, and on January 30, 2020, the World Health Organization (WHO) declared that the outbreak of the new coronavirus constituted an international public health emergency.

On March 11, 2020, the WHO declared that the COVID-19 outbreak constituted a pandemic, requiring important protective measures be taken to prevent overcrowding at intensive care units and to strengthen preventive hygiene. The global pandemic prompted many countries, including Canada, to implement lockdown and social distancing measures designed to slow the development of new contagion hotbeds. Those measures included the closing of borders in many countries and the cancellation of sporting and cultural events around the world, triggering a sudden and widespread drop in market capitalizations on all major stock exchanges around the world arising from the uncertainty and fears about the global economy.

In May 2020, after several weeks of lockdown, Canadian provinces and territories began loosening some of the restrictions imposed at the start of the COVID-19 pandemic. The plans to re-open the economy differed from one location to the next, depending on the local situation with the epidemic. Although the provinces and territories announced how the re-opening would work, authorities warned that the plans could be postponed or modified, depending how the situation developed. Almost all restrictions in Canada were lifted in July 2020, while other countries were delaying their reopening or were simply returning to lockdown. During the summer of 2020, there was a recovery in the stock markets and a decrease in the unemployment rate, but the latter still remains high. Since the early fall of 2020, a second wave of COVID-19 has forced authorities in several countries, including Canada, to reintroduce some lockdown measures, effectively shutting down parts of the economy again.

In Canada, banking services are considered essential services and are therefore being maintained despite the lockdown and social distancing measures. Given the current economic and social conditions, the Bank is committed to supporting its employees, clients, and communities. The Bank has ensured the continuity of all its activities since the beginning of this unprecedented crisis. All of its experts have been mobilized to guide and support clients and answer their questions during this ongoing period of uncertainty.

### Impact of the COVID-19 risk factor

The COVID-19 pandemic has had disruptive and adverse impacts in the countries where the Bank conducts business and, more broadly, on the global economy. Among other things, COVID-19 sent stock markets into sharp decline and rendered them more volatile, disrupted global supply chains, and provoked a rapid and sudden rise in unemployment and an economic slowdown. Governments, monetary authorities and regulators have intervened to support the economy and the financial system, including by adopting fiscal and monetary measures to increase liquidity and support incomes; they have also eased the capital and liquidity requirements imposed on financial institutions.

Governments, monetary authorities and regulators around the world, including in Canada, continue to implement strong measures to provide financial assistance to households and businesses, stabilize markets and support economic growth. No-one can be sure whether these measures will be sufficient to fully mitigate the negative impacts of the COVID-19 pandemic or reverse the recessionary situation in the markets and countries where the Bank conducts business. Because of the scale and severity of ongoing developments in the COVID-19 pandemic, if it continues, its impacts on the global economy could become more serious, leading to greater volatility in the financial markets, heightened risks of corporate insolvency and even more negative impacts on household wealth.

In addition to the impacts of the COVID-19 pandemic on the global economy and in the countries where the Bank conducts business, the pandemic has affected and may continue to affect the Bank, the way it conducts business, and its clients.

There remains a possibility that the financial stress experienced by the Bank's clients as a result of the COVID-19 pandemic may become more intense, and when this is combined with operational constraints caused by social distancing requirements, including continued closures of certain facilities or reduced business hours, lower sales or increased operating costs, the Bank's clients may be under even greater pressure. Since a significant portion of the Bank's business involves granting loans or providing liquidity in multiple ways to its clients—which include individuals, businesses in various industries and governments—the impacts of the COVID-19 pandemic on these clients could have a material adverse effect on the Bank's business, results of operations, financial position and reputation by, for example, causing more credit losses than the Bank expects.

In the context of the COVID-19 pandemic, the Bank has also been forced, and may again be forced, to review the way it conducts business, including by closing some branches or reducing their business hours, having employees continue to work from home for a long period of time, or implement the operational changes required as a result of greater volumes of client requests and the problems they cause for the Bank's main suppliers of products and services. These factors have had an adverse effect and may continue to adversely affect the Bank's business and the quality and continuity of the services it provides to clients. Until now, the Bank has taken proactive measures through business continuity plans, carefully planning for the return of certain employees to the workplace, and its crisis management teams are working even harder to ensure the well-being of the Bank's employees and maintain its ability to serve clients. In addition, in order to help clients experiencing financial difficulties, the Bank has implemented various assistance programs in addition to those offered by governments. See the Relief Measures for Clients section on pages 18 and 19 for additional information on these assistance programs.

Lastly, as a result of the measures taken to enable employees to work from home and the increased use by clients of the digital tools that have been made available to them, the Bank, its clients and its service providers may be exposed to an increased risk of cyber threats, attacks, breaches, fraudulent activities and other compromises, as well as operational risks. The Bank is closely monitoring its operations for any indications of increased phishing, fraud, privacy breaches and cyberattacks by raising awareness about information security threats among its clients, employees and service providers.

Given these circumstances, the COVID-19 pandemic has put into perspective and may continue to put into perspective many of the principal and emerging risks to which the Bank is exposed, i.e., credit risk, market risk, liquidity and funding risk, operational risk, regulatory compliance risk, reputational risk, strategic risk, information security and cybersecurity risk, and the risk of reliance on technology and third parties. These risks are described in more detail in the Risk Management section of this MD&A.

The Bank continues to closely monitor the effects and potential consequences of the COVID-19 pandemic. It is not possible to predict the full impacts that this pandemic will have on the global economy, financial markets and the Bank, including its business, results of operations, financial position, regulatory capital and liquidity ratios, reputation, and ability to satisfy regulatory requirements, as well as the full impact on clients. The actual impacts will depend on future events that are highly uncertain and cannot be predicted with any certainty, including the extent, severity and duration of the COVID-19 pandemic, as well as the effectiveness of actions and measures taken by governments, monetary authorities and regulators over the long term.

The Bank's perception of the risks to which it is exposed continues to evolve. So in accordance with its risk management framework, which is more fully described in the Risk Management section of this MD&A, the Bank continues to assess the risks associated with the COVID-19 pandemic in order to proactively manage them and to implement appropriate mitigation strategies.

### **The Bank's Financial Performance**

In light of COVID-19 and its impact on global and local economies, Canadian banks are facing a difficult situation. This exceptional situation has led to significant changes in the overall market, such as business closures and temporary layoffs, low interest rates, declining and volatile stock markets, declining oil prices, and government measures implemented in response to COVID-19.

#### **Macroeconomic Factors**

Assumptions about the performance of the Canadian and U.S. economies in 2021, including in the context of the COVID-19 pandemic and how that will affect the Bank, are among the main factors considered in setting the Bank's strategic priorities and objectives, including provisions for credit losses. In determining its expectations for economic conditions, both broadly and in the financial services sector in particular, the Bank primarily considers historical economic data provided by the governments in Canada, the United States and certain other countries in which the Bank conducts business, as well as their agencies.

The main macroeconomic factors used when estimating allowances for credit losses on loans and other financial assets are as follows: gross domestic product (GDP), the unemployment rate, the housing price index, the rate spread on BBB bonds, the stock market (S&P/TSX), and the West Texas Intermediate (WTI) oil price. For each scenario, namely, the base scenario, upside scenario, and downside scenario, the average of the values over the next 12 months and the average of the values over the remaining forecast period for each macroeconomic factor are used to estimate the expected credit losses for the personal credit portfolio and for the business and government credit portfolio.

During the year ended October 31, 2020, certain macroeconomic factors were revised positively while others were revised negatively.

According to the base scenario, the Canadian economy will continue to recover next year, but the unemployment rate will be 8.6% at the end of 2021, significantly above its pre-recession level (5.7%). Given a difficult labour market and reduced immigration, housing prices will decline. The S&P/TSX will end 2021 at 16,200 points and the price of oil at US\$48.

According to the upside scenario, the economy will rebound more strongly thanks to medical breakthroughs that will help fight COVID-19. Fiscal and monetary stimulus measures enabled limitation of the damage arising from destroyed production capacity. The unemployment rate at year-end 2021 will be more favourable than the base scenario (5 tenths lower). Housing prices will only decline slightly, the S&P/TSX will end 2021 at 17,500 points and the price of oil at US\$58.

According to the downside scenario, delays in the discovery of an effective vaccine will cause increased stress in the financial markets. This will lead to an economic meltdown and a more significant destruction of capacity. The unemployment rate will therefore trend upward, reaching 10.6% at the end of 2021. Housing prices will decrease considerably. The S&P/TSX will end 2021 at 13,900 points and the price of oil at US\$24.

Given uncertainty surrounding the key inputs used to measure credit losses, the Bank has applied expert credit judgment to adjust the modelled ECL results.

For additional information, see the Economic Review and Outlook section of this MD&A and Note 7 to these consolidated financial statements.

#### Impact on Results

The Bank's results for the year ended October 31, 2020 were marked by the repercussions of this unprecedented crisis. During the second quarter of 2020, major disruptions in the global environment in which the Bank operates affected its financial results, as there was a considerable increase in provisions for credit losses to reflect a significant deterioration in the macroeconomic conditions caused by COVID-19 and the expected impacts on clients. Despite an upturn in economic activity in the third quarter of 2020, several sectors are facing financial difficulties due to social distancing rules and fears among consumers, which are causing significant downward pressure on sales or even the closure of some businesses, while others have experienced sales growth. However, the net result for the fourth quarter of 2020 was relatively unchanged from the same quarter of 2019, as higher provisions for credit losses were offset by the strong performance of most business segments.

For additional information, refer to the "Financial Analysis" and "Business Segment Analysis" sections of this MD&A.

#### **Relief Measures for Clients**

In response to the economic and financial environment resulting from COVID-19, at the start of the pandemic, the Bank announced a series of support measures for the clients of its main business segments, and some of these measures have been extended. Some of the measures were introduced by the Canadian government and regulatory authorities, together with the Canadian banks and were implemented quickly to come to the assistance of individuals and businesses. These measures are designed to provide financial support to clients facing the economic consequences of COVID-19. The main relief measures are described below.

#### Clients – Individuals

<b>Mortgages Personal loans</b>	<b>Credit cards</b>	<b>Transactions</b>
<ul style="list-style-type: none"> <li>• Payment deferrals of up to six months on mortgage loans (application date extended from June 30 to September 30, 2020).</li> <li>• Deferral of minimum payment for up to three months on home equity lines of credit (All-In-One™) (application date extended from June 30 to September 30, 2020).</li> <li>• Payment deferrals of up to three months on personal loans (ended September 30, 2020).</li> </ul>	<ul style="list-style-type: none"> <li>• Deferral of minimum monthly payment for a period of up to 90 days (ended September 30, 2020).</li> <li>• Annual interest rate reduced to 10.9% on purchases and cash advances during the deferral period, depending on an analysis of the file (ended September 30, 2020).</li> <li>• Permanent or temporary increase to credit card limit.</li> </ul>	<ul style="list-style-type: none"> <li>• Temporary removal of certain transaction fees:                             <ul style="list-style-type: none"> <li>○ Interac e-Transfer service charge (ended September 30, 2020);</li> <li>○ Charges for stop payment requests by cheque or preauthorized debit (ended September 30, 2020);</li> <li>○ Interest charges on an overdraft (ended September 30, 2020).</li> </ul> </li> </ul>

During the year ended October 31, 2020, the Bank approved payment deferrals for loans with a gross carrying value of \$10.9 billion for approximately 125,000 Personal Banking clients. The number of loans and the gross carrying value of loans subject to these deferrals are presented in the table below. In addition, through its insurance subsidiary, the Bank offered easing measures on home and auto insurance products, including discounts of 15% for a period of three months. Approximately 31,800 clients elected to avail themselves of these easing measures during the year ended October 31, 2020.

#### Clients – Businesses

Loans	Credit cards	Transactions
<ul style="list-style-type: none"> <li>Canada Emergency Business Account (CEBA) for small- and medium-sized enterprises and non-profit organizations: A \$40,000 interest-free loan up to December 31, 2022 (with certain eligibility conditions) supported by the Canadian government.</li> <li>Concerted Temporary Action Program for Businesses (CTAPB): Working capital loan of at least \$71,500 supported by Investissement Québec (Eligibility: History of satisfactory profitability).</li> <li>Business Credit Availability Program (BCAP) for exporting or non-exporting businesses, supported by Export Development Canada: Operating credit and cash flow term loans of up to \$6.25 million in Canadian dollars only.</li> <li>Financing program for medium-sized businesses with the Business Development Bank of Canada (BDC): subordinated loan in the amount of \$12.5 million to \$60 million for medium-sized businesses.</li> <li>Co-lending program with the BDC: loan amount varies based on sales, for a maximum amount of \$12.5 million for a company or a group of borrowers and the possibility of a repayment moratorium.</li> <li>Principal payment deferrals of up to six months.</li> </ul>	<ul style="list-style-type: none"> <li>Deferral of minimum monthly payment for a period of up to 90 days on certain Business cards (ended September 30, 2020).</li> <li>Reduction of the annual interest rate to 10.9% on purchases and cash advances during the deferral period, based on the file analysis (ended September 30, 2020).</li> <li>Contactless and mobile payments over \$100 at participating merchants.</li> </ul>	<ul style="list-style-type: none"> <li>Increase to the weekly limit of incoming Interac e-transfers.</li> <li>Temporary removal of charges for stop payment requests.</li> <li>Access to the 10% wage subsidy using the Nethris platform.</li> </ul>

As at October 31, 2020, the Bank had granted 30,722 loans under its CEBA program, 48 loans under CTAPB, 33 loans under BCAP and 1 co-loan with the BDC. In addition, the Bank addressed the specific needs of its Commercial Banking clients and Financial Markets clients to support them during this unprecedented crisis. During the year ended October 31, 2020, the Bank approved payment deferrals for loans with a gross carrying value of \$5.4 billion for approximately 3,100 Commercial Banking and Financial Markets clients. The number of loans and gross carrying value of loans subject to these deferrals are presented in the following table.

#### Payments Deferrals

(millions of Canadian dollars)	As at October 31, 2020		As at July 31, 2020		As at April 30, 2020	
	Number of loans	Gross carrying value of loans	Number of loans	Gross carrying value of loans	Number of loans	Gross carrying value of loans
Residential mortgage	2,865	695	14,405	3,651	38,682	8,624
Personal	–	–	40,820	319	65,935	756
Credit card	–	–	2,700	15	9,316	67
Business and government	780	1,182	2,739	4,479	3,148	4,482
	<b>3,645</b>	<b>1,877</b>	60,664	8,464	117,081	13,929

### Key Measures Introduced by the Regulatory Authorities

Like all Canadian financial institutions, the Bank is facing regulatory changes that are being implemented at an increasing rate. As described below, as part of a coordinated effort by Government of Canada agencies, Office of the Superintendent of Financial Institutions (Canada) (OSFI) and other regulatory authorities governing the Bank's activities have taken a number of actions to reinforce the resilience of Canadian banks and improve the stability of the Canadian financial system and economy in response to challenges posed by COVID-19 and current market conditions. Regulatory authorities are also stepping up their oversight activities and focusing on the effects of the pandemic on the activities, capital strength, and liquidity of regulated entities.

OSFI, market participants, and financial institutions all recognize the critical need for strong capital and liquidity and effective risk management. OSFI has strengthened its requirements and its supervisory efforts in all of these areas since the 2008 global financial crisis. These measures have improved the resilience of Canadian banks in periods of stress.

OSFI continues to actively monitor the evolving COVID-19 situation and has been in frequent contact with banks to assess their operational capacity and actions to address the current environment. As a result of these discussions and the measures announced at the start of the pandemic, OSFI announced a continuance of the regulatory flexibility measures to support COVID-19-related efforts while promoting financial resilience and stability. The main key measures are described on the following pages.

#### Capital Management

One of the requirements imposed by OSFI after the 2008 financial crisis was the creation of the Domestic Stability Buffer (the buffer) requirement applicable to Canadian domestic systemically important banks (D-SIBs). The buffer's countercyclical design enables D-SIBs to use the capital they have built up during good times when it may be needed most. On March 13, 2020, OSFI lowered the buffer from 2.25% of risk-weighted assets to 1.0%, effective immediately, and on June 23, 2020, it confirmed that the buffer requirement would remain at 1.0% until December 2020. This action is being taken in order to support D-SIBs' ability to supply credit to the economy during an expected period of disruption related to COVID-19 and market conditions. OSFI will continue to analyze the buffer level and could reduce it more as needed. OSFI also stated its commitment that any increases to the buffer will not take effect for at least 18 months from March 13, 2020 in addition to its expectation for all banks to interrupt any dividend increases and share buybacks for the time being.

On March 27, 2020, OSFI announced a series of additional measures for banks in response to the difficulties caused by the spread of COVID-19, including:

- Treatment of regulatory capital for expected credit loss (ECL) accounting purposes: As other regulatory agencies are doing, OSFI has introduced transitional arrangements applicable to the ECL provisioning method set out in the Basel framework. This will result in a portion of allowances that would otherwise be included in Tier 2 capital to be included in CET1 capital. Although the Basel Committee on Banking Supervision (BCBS) is allowing jurisdictions the option of applying a 100% add-back of allowances to CET1 capital, OSFI believes that a maximum add-back of 70% is appropriate. This increased amount is adjusted for tax effects and multiplied by a scaling factor that decreases over time. The scaling factor will be set at 70% in fiscal 2020, 50% in fiscal 2021, and 25% in fiscal 2022. The three-year transition will help banks to phase-in the impact of increased ECL allowances in CET1 capital while also acknowledging that these provisions are being taken.
- Deferral of loan payments: The bank loans subject to payment deferrals, such as mortgage loans, personal loans, and small business loans, continue to be treated as performing loans under the *Capital Adequacy Requirement* guideline until the end of the deferral and for a maximum period of six months. In this way, banks can help their clients deal with the problems created by the crisis. However, on July 31, 2020, OSFI announced that: (i) loans granted payment deferrals before August 31, 2020 will continue to be treated as performing loans for the duration of the deferral, up to a maximum of six months from the effective date of the deferral; (ii) loans granted new payment deferrals after August 30, 2020 and on or before September 30, 2020 will be treated as performing loans for the duration of the deferral, up to a maximum of three months from the approval date of the deferral; and (iii) loans granted payment deferrals with approval dates after September 30, 2020 will not be eligible for the special treatment.
- Reduction of stressed Value-at-Risk (VaR) multipliers under market risk: On a temporary basis, banks subject to market risk capital requirements and using the AIRB approach may reduce the stressed VaR multiplier that was being applied at the end of first quarter of 2020 by two. This reduction can be applied retrospectively to the beginning of the second quarter of 2020.
- Removal of funding valuation adjustment (FVA) hedges in market risk: Banks must remove hedges of FVA from the calculation of market risk capital. Doing so addresses an asymmetry in the current rule where these hedges of FVA are included in the calculation while the underlying exposures to FVA are not. This treatment should be back-dated to the beginning of the second quarter of 2020.

- **Capital floor:** OSFI is lowering the floor factor from 75% to 70%. The 70% floor factor is expected to stay in place until the domestic implementation of the Basel III capital floor in the first quarter of 2023. The 70% factor ensures that the floor continues to protect against model risk while maintaining the risk sensitivity of the capital framework for banks subject to the Advanced Internal Rating-Based approach.
- **Leverage ratio:** Banks can temporarily exclude the following exposures from the leverage ratio exposure measure: (1) Central bank reserves; (2) Sovereign-issued securities by borrowers that qualify as high-quality liquid assets (HQLA) under the *Liquidity Adequacy Requirements* guideline. On November 5, 2020, OSFI announced that this treatment will remain in place until December 31, 2021. Capital freed up through this measure should not be distributed (e.g., as dividends or bonus payments) and should rather be used to support lending and financial intermediation activities.
- **Margin required for non-centrally cleared derivatives:** In line with a decision by the BCBS and International Organization of Securities Commissions, OSFI is extending the deadline for the implementation of the final two phases of the initial margin requirements for non-centrally cleared derivatives outlined in OSFI's E-22 guideline by one year. With this extension, the final implementation phase will take place on September 1, 2022, at which point covered entities with an aggregate average notional amount (AANA) of non-centrally cleared derivatives greater than \$12 billion will be subject to the requirements. As an intermediate step, from September 1, 2021, covered entities with an AANA of non-centrally cleared derivatives greater than \$75 billion will be subject to the requirements.
- **Delaying implementation of the Basel III reforms:** The Group of Central Bank Governors and Heads of Supervision (GHOS), which oversees the BCBS, announced a postponement to the implementation of the reforms of the Basel III capital international standard published in December 2017. OSFI has therefore postponed until the first quarter of 2023 the implementation dates applicable to the revisions to the Standardized Approach and AIRB Approach to credit risk, the operational risk framework, and the leverage ratio framework, as well as the introduction of a more risk-sensitive capital floor. Implementation of the Pillar 3 financial disclosure requirements finalized by the BCBS in December 2018 has also been delayed until at least the first quarter of 2023. Lastly, implementation of the final set of revisions to the new market risk framework entitled *Fundamental Review of the Trading Book* published in January 2019 as well as the revised credit valuation adjustment (CVA) risk framework is being delayed to the first quarter of 2024.

For additional information, refer to the Capital Management section of this MD&A.

#### Liquidity Management

To help Canadians through this difficult period caused by the COVID-19 crisis, the Bank of Canada has taken policy actions designed to restore financial market functioning, to ensure that financial institutions have adequate liquidity, and to provide households and businesses with access to the credit they need. To ensure banks have sufficient liquidity to support clients and to alleviate impaired market liquidity in Canada, the central bank has implemented liquidity facilities and asset purchase programs. The liquidity facilities include the existing term repo facility where the terms of the loans have been extended and the list of eligible collateral has been expanded. Also, a new standing term liquidity facility (STLF) has been introduced to complement the existing liquidity tools and to further strengthen the resilience of the Canadian financial system. Asset purchase programs implemented by the Bank of Canada and the Canada Mortgage and Housing Corporation (CMHC) cover a wide range of securities (treasury bills, bankers' acceptances, bonds, and mortgage-backed securities) and issuers (government and corporate). All of these programs have stabilized the funding markets and supported the flow of credit to households and businesses.

The Bank of Canada has also used monetary policy to respond to the COVID-19 crisis. It has lowered its target for the overnight rate by 150 basis points to 0.25%. Longer-term interest rates have also gone down significantly, and the interest rates of the Government of Canada curve are now mostly below 1%. Also, the limit for covered bonds has been temporarily increased to provide better access to Bank of Canada facilities, and banks are allowed to draw on their HQLA assets, thereby falling below the 100% threshold required by the *Liquidity Adequacy Requirements* guideline for the liquidity coverage ratio (LCR).

The Bank entered the crisis with a strong liquidity position, and it has maintained sound and prudent liquidity management throughout fiscal 2020. During the quarter ended April 30, 2020, the Bank participated in certain Bank of Canada programs designed to provide credit to its clients and to substitute some short-term funding. Given the sustained growth in deposits and improvements in capital markets, the Bank did not participate in the term repurchase program during the quarters ended July 31, 2020 and October 31, 2020. In light of the government liquidity facilities and household and business needs, the Bank is maintaining a liquidity buffer that will enable it to further support its clients.

For additional information, refer to the Risk Management – Liquidity and Funding Risk section of the MD&A.

## Financial Reporting Method

As stated in Note 1 to the consolidated financial statements, the Bank adopted IFRS 16 on November 1, 2019. As permitted by the IFRS 16 transitional provisions, the Bank elected to apply IFRS 16 using the modified retrospective basis, with no restatement of comparative periods. Note 1 to these consolidated financial statements presents the impacts of IFRS 16 adoption on the Bank's Consolidated Balance Sheet as at November 1, 2019 and additional information about the adoption of IFRS 16.

## Reconciliation of Non-GAAP Financial Measures

Year ended October 31

(millions of Canadian dollars)

						2020	2019 <sup>(1)</sup>
	Personal and Commercial	Wealth Management	Financial Markets	USSF&I	Other		
Net interest income	2,445	442	744	807	(183)	4,255	3,596
Taxable equivalent	–	–	202	–	6	208	195
<b>Net interest income on a taxable equivalent basis</b>	<b>2,445</b>	<b>442</b>	<b>946</b>	<b>807</b>	<b>(177)</b>	<b>4,463</b>	<b>3,791</b>
Non-interest income	1,018	1,413	1,051	13	177	3,672	3,836
Taxable equivalent	–	–	57	–	–	57	135
Foreign currency translation loss on disposal of subsidiaries <sup>(2)</sup>	–	–	–	–	24	24	–
Gain on disposal of Fiera Capital shares <sup>(3)</sup>	–	–	–	–	–	–	(79)
Gain on disposal of premises and equipment <sup>(4)</sup>	–	–	–	–	–	–	(50)
Remeasurement at fair value of an investment <sup>(5)</sup>	–	–	–	–	–	–	33
<b>Non-interest income on a taxable equivalent basis and excluding specified items</b>	<b>1,018</b>	<b>1,413</b>	<b>1,108</b>	<b>13</b>	<b>201</b>	<b>3,753</b>	<b>3,875</b>
<b>Total revenues on a taxable equivalent basis and excluding specified items</b>	<b>3,463</b>	<b>1,855</b>	<b>2,054</b>	<b>820</b>	<b>24</b>	<b>8,216</b>	<b>7,666</b>
Non-interest expenses	1,849	1,115	809	319	453	4,545	4,301
Impairment losses on premises and equipment and on intangible assets <sup>(6)</sup>	–	–	–	–	(71)	(71)	(57)
Severance pay <sup>(7)</sup>	–	–	–	–	(48)	(48)	(10)
Charge related to Maple <sup>(8)</sup>	–	–	–	–	(13)	(13)	(11)
Provisions for onerous contracts <sup>(9)</sup>	–	–	–	–	–	–	(45)
<b>Non-interest expenses excluding specified items</b>	<b>1,849</b>	<b>1,115</b>	<b>809</b>	<b>319</b>	<b>321</b>	<b>4,413</b>	<b>4,178</b>
<b>Income before provisions for credit losses and income taxes on a taxable equivalent basis and excluding specified items</b>	<b>1,614</b>	<b>740</b>	<b>1,245</b>	<b>501</b>	<b>(297)</b>	<b>3,803</b>	<b>3,488</b>
Provisions for credit losses	517	7	239	80	3	846	347
<b>Income before income taxes on a taxable equivalent basis and excluding specified items</b>	<b>1,097</b>	<b>733</b>	<b>1,006</b>	<b>421</b>	<b>(300)</b>	<b>2,957</b>	<b>3,141</b>
Income taxes	290	194	7	69	(107)	453	462
Taxable equivalent	–	–	259	–	6	265	330
Income taxes on foreign currency translation loss on disposal of subsidiaries <sup>(2)</sup>	–	–	–	–	(12)	(12)	–
Income taxes on the gain on disposal of Fiera Capital shares <sup>(3)</sup>	–	–	–	–	–	–	(11)
Income taxes on the gain on disposal of premises and equipment <sup>(4)</sup>	–	–	–	–	–	–	(7)
Income taxes on the remeasurement at fair value of an investment <sup>(5)</sup>	–	–	–	–	–	–	6
Income taxes related to impairment losses on premises and equipment and on intangible assets <sup>(6)</sup>	–	–	–	–	19	19	15
Income taxes on severance pay <sup>(7)</sup>	–	–	–	–	13	13	3
Income taxes on the charge related to Maple <sup>(8)</sup>	–	–	–	–	3	3	3
Income taxes on provisions for onerous contracts <sup>(9)</sup>	–	–	–	–	–	–	12
<b>Income taxes on a taxable equivalent basis and excluding specified items</b>	<b>290</b>	<b>194</b>	<b>266</b>	<b>69</b>	<b>(78)</b>	<b>741</b>	<b>813</b>
<b>Net income excluding specified items</b>	<b>807</b>	<b>539</b>	<b>740</b>	<b>352</b>	<b>(222)</b>	<b>2,216</b>	<b>2,328</b>
<b>Specified items after income taxes</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>(133)</b>	<b>(133)</b>	<b>(6)</b>
<b>Net income</b>	<b>807</b>	<b>539</b>	<b>740</b>	<b>352</b>	<b>(355)</b>	<b>2,083</b>	<b>2,322</b>
Non-controlling interests	–	–	–	34	8	42	66
Non-controlling interests on the foreign currency translation loss on disposal of subsidiaries <sup>(2)</sup>	–	–	–	–	10	10	–
<b>Non-controlling interests excluding specified items</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>34</b>	<b>18</b>	<b>52</b>	<b>66</b>
<b>Net income attributable to the Bank's shareholders and holders of other equity instruments</b>	<b>807</b>	<b>539</b>	<b>740</b>	<b>318</b>	<b>(363)</b>	<b>2,041</b>	<b>2,256</b>
<b>Net income attributable to the Bank's shareholders and holders of other equity instruments excluding specified items</b>	<b>807</b>	<b>539</b>	<b>740</b>	<b>318</b>	<b>(240)</b>	<b>2,164</b>	<b>2,262</b>

- (1) For the year ended October 31, 2019, certain amounts have been reclassified.
- (2) During the year ended October 31, 2020, the Bank, through its subsidiary Credigy Ltd. (Credigy), recorded a foreign currency translation loss of \$24 million (\$36 million taking into account income taxes and \$26 million taking into account income taxes and non-controlling interests) in investments in foreign operations following the disposal of two subsidiaries in Brazil.
- (3) During the year ended October 31, 2019, following the Bank's disposal of a portion of its investment in Fiera Capital Corporation (Fiera Capital) the Bank recorded a gain on disposal of \$79 million (\$68 million net of income taxes), including a gain of \$31 million (\$27 million net of income taxes) upon remeasurement at fair value of the retained interest.
- (4) During the year ended October 31, 2019, the Bank completed the sale of its head office land and building located at 600 De La Gauchetière Street West, Montreal, Quebec, Canada, for gross proceeds of \$187 million, and a gain on disposal of premises and equipment of \$50 million (\$43 million net of income taxes) was recorded.
- (5) During the year ended October 31, 2019, the Bank remeasured at fair value its investment in NSIA Participations (NSIA) and recorded a loss of \$33 million (\$27 million net of income taxes).
- (6) During the year ended October 31, 2020, the Bank recorded \$71 million (\$52 million net of income taxes) in impairment losses on premises and equipment and on intangible assets related to computer equipment and technology developments (2019: \$57 million, \$42 million net of income taxes).
- (7) During the year ended October 31, 2020, following an optimization of certain organizational structures, the Bank recorded \$48 million (\$35 million net of income taxes) in severance pay (2019: \$10 million, \$7 million net of income taxes).
- (8) During the year ended October 31, 2020, the Bank recorded a charge of \$13 million (\$10 million net of income taxes) related to the company Maple Financial Group Inc. (Maple) following the event that occurred in December 2019, as described in the Contingent Liabilities section on page 111 of this MD&A (2019: \$11 million, \$8 million net of income taxes).
- (9) During the year ended October 31, 2019, the Bank reviewed all of its corporate building leases and had recorded provisions for onerous contracts of \$45 million (\$33 million net of income taxes).

## Non-GAAP Financial Measures

The Bank uses a number of financial measures when assessing its results and measuring overall performance. Some of these financial measures are not calculated in accordance with GAAP, which are based on IFRS. Presenting non-GAAP financial measures helps readers to better understand how management analyzes results, shows the impacts of specified items on the results of the reported periods, and allows readers to assess results without the specified items if they consider such items not to be reflective of the underlying performance of the Bank's operations. The Bank cautions readers that it uses non-GAAP financial measures that do not have standardized meanings under GAAP and therefore may not be comparable to similar measures used by other companies.

Like many other financial institutions, the Bank uses the taxable equivalent basis to calculate net interest income, non-interest income and income taxes. This calculation method consists of grossing up certain tax-exempt income (particularly dividends) by the income tax that would have been otherwise payable. An equivalent amount is added to income taxes. This adjustment is necessary in order to perform a uniform comparison of the return on different assets regardless of their tax treatment.

Fiscal 2020 was marked by the effects of the COVID-19 pandemic on macroeconomic factors, which resulted in a significant increase in the Bank's provisions for credit losses. Given the materiality of the provisions for credit losses recorded in accordance with IFRS, the Bank believes it is useful to show income before provisions for credit losses and income taxes, income before provisions for credit losses and income taxes on a taxable equivalent basis as well as income before provisions for credit losses and income taxes on a taxable equivalent basis and excluding specified items (as presented in the Consolidated Results table on page 29, in the Results by Segment tables on pages 32 to 52 and in the Quarterly Financial Information table on page 53 of this MD&A), thereby providing readers with additional information to help them better understand the main components of the financial results of the Bank and its business segments.

## Financial Disclosure

### Disclosure Controls and Procedures

The Bank's financial information is prepared with the support of a set of disclosure controls and procedures (DC&P) that are implemented by the President and Chief Executive Officer (CEO) and by the Chief Financial Officer and Executive Vice-President, Finance (CFO). During the year ended October 31, 2020, in accordance with *Regulation 52-109 Respecting Certification of Disclosure in Issuers' Annual and Interim Filings* (Regulation 52-109), released by the CSA, the design and operation of these controls and procedures were evaluated to determine their effectiveness.

As at October 31, 2020, the CEO and the CFO confirmed the effectiveness of the DC&P. These controls are designed to provide reasonable assurance that the information disclosed in annual and interim filings and in other reports filed or submitted under securities legislation is recorded, processed, summarized and reported within the time periods specified by that legislation. These controls and procedures are also designed to ensure that such information is accumulated and communicated to the Bank's management, including its signing officers, as appropriate, to allow for timely decisions regarding disclosure.

This Annual Report was reviewed by the Disclosure Committee, the Audit Committee, and the Bank's Board of Directors (the Board), which approved it prior to publication.

### Internal Controls Over Financial Reporting

The internal controls over financial reporting (ICFR) are designed to provide reasonable assurance that the financial information presented is reliable and that the consolidated financial statements were prepared in accordance with GAAP, which are based on IFRS, unless indicated otherwise as explained on pages 22 and 23 of this MD&A. Due to inherent limitations, the ICFR may not prevent or detect all misstatements in a timely manner.

The CEO and the CFO oversaw the evaluation work performed on the design and operation of the Bank's ICFR in accordance with Regulation 52-109. These controls were evaluated in accordance with the control framework of the Committee of Sponsoring Organizations of the Treadway Commission (COSO — 2013) for financial controls and in accordance with the control framework of the Control Objectives for Information and Related Technologies (COBIT) for general information technology controls.

Based on the evaluation results, the CEO and CFO concluded, as at October 31, 2020, that there are no material weaknesses, that the ICFR are effective and provide reasonable assurance that the financial reporting is reliable, and that the Bank's consolidated financial statements were prepared in accordance with GAAP.

### Changes to Internal Controls Over Financial Reporting

The CEO and CFO also undertook work whereby they were able to conclude that, during the year ended October 31, 2020, no changes were made to the ICFR that have materially affected, or are reasonably likely to materially affect, the design or operation of the ICFR.

### Disclosure Committee

The Disclosure Committee assists the CEO and CFO by ensuring that disclosure controls and procedures and internal control procedures for financial reporting are implemented and operational. In so doing, the committee ensures that the Bank is meeting its disclosure obligations under current regulations and that the CEO and CFO are producing the requisite certifications.

## Overview

### Highlights

As at October 31 or for the year ended October 31

(millions of Canadian dollars, except per share amounts)

	2020	2019	% change
<b>Operating results</b>			
Total revenues	7,927	7,432	7
Income before provisions for credit losses and income taxes <sup>(1)</sup>	3,382	3,131	8
Net income	2,083	2,322	(10)
Net income attributable to the Bank's shareholders and holders of other equity instruments	2,041	2,256	(10)
Return on common shareholders' equity	14.9 %	18.0 %	
Dividend payout ratio	49.6 %	41.6 %	
<b>Earnings per share</b>			
Basic	\$ 5.73	\$ 6.39	(10)
Diluted	5.70	6.34	(10)
<b>Operating results on a taxable equivalent basis and excluding specified items<sup>(1)</sup></b>			
Total revenues on a taxable equivalent basis and excluding specified items	8,216	7,666	7
Income before provisions for credit losses and income taxes on a taxable equivalent basis and excluding specified items	3,803	3,488	9
Net income excluding specified items	2,216	2,328	(5)
Return on common shareholders' equity excluding specified items	15.8 %	18.0 %	
Dividend payout ratio excluding specified items	46.6 %	41.6 %	
Efficiency ratio on a taxable equivalent basis and excluding specified items	53.7 %	54.5 %	
<b>Earnings per share excluding specified items<sup>(1)</sup></b>			
Basic	\$ 6.10	\$ 6.40	(5)
Diluted	6.06	6.36	(5)
<b>Common share information</b>			
Dividends declared	\$ 2.84	\$ 2.66	7
Book value	39.97	36.89	
Share price			
High	74.79	68.02	
Low	38.73	54.97	
Close	63.94	68.02	
Number of common shares ( <i>thousands</i> )	335,998	334,172	
Market capitalization	21,484	22,730	
<b>Balance sheet and off-balance-sheet</b>			
Total assets	331,625	281,458	18
Loans and acceptances, net of allowances	164,740	153,251	7
Deposits	215,878	189,566	14
Equity attributable to common shareholders	13,430	12,328	9
Assets under administration and under management	596,656	565,396	6
<b>Regulatory ratios under Basel III<sup>(2)</sup></b>			
Capital ratios			
Common Equity Tier 1 (CET1)	11.8 %	11.7 %	
Tier 1	14.9 %	15.0 %	
Total	16.0 %	16.1 %	
Leverage ratio	4.4 %	4.0 %	
Liquidity coverage ratio (LCR)	161 %	146 %	
<b>Regulatory ratios under Basel III (adjusted)<sup>(3)</sup></b>			
Capital ratios			
CET1	11.5 %		
Tier 1	14.6 %		
Total	16.0 %		
Leverage ratio	4.3 %		
<b>Other information</b>			
Number of employees – Worldwide	26,517	25,487	4
Number of branches in Canada	403	422	(5)
Number of banking machines in Canada	940	939	–

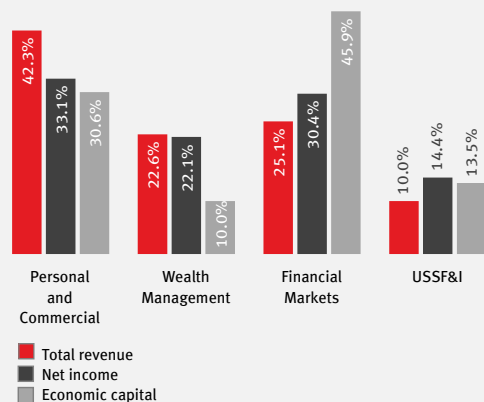
(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

(2) The ratios as at October 31, 2020 include the transitional measures granted by OSFI. For additional information, see the section entitled COVID-19 Pandemic – Key Measures Introduced by the Regulatory Authorities on pages 20 and 21 of this MD&amp;A.

(3) The adjusted ratios as at October 31, 2020 do not include the transitional measure applicable to expected credit loss provisioning. For additional information, see the section entitled COVID-19 Pandemic – Key Measures Introduced by the Regulatory Authorities on pages 20 and 21 of this MD&amp;A.

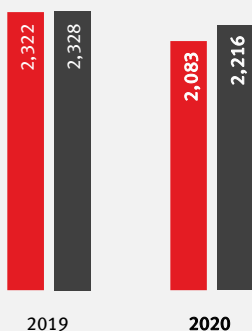
### Business Mix<sup>(1)</sup>

Year ended October 31, 2020  
(taxable equivalent basis)<sup>(2)</sup>



### Net income

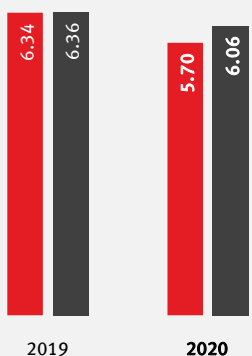
Year ended October 31  
(millions of Canadian dollars)



■ Including specified items  
■ Excluding specified items<sup>(2)</sup>

### Diluted earnings per share

Year ended October 31  
(Canadian dollars)



■ Including specified items  
■ Excluding specified items<sup>(2)</sup>

- (1) Excluding the *Other* heading.  
(2) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

## About National Bank

The Bank carries out its activities in four business segments: Personal and Commercial, Wealth Management, Financial Markets, and U.S. Specialty Finance and International. For presentation purposes, other operating activities, certain specified items, and treasury activities are grouped in the *Other* heading of segment results. Each reportable segment is distinguished by services offered, type of clientele, and marketing strategy. Additional information is provided in the Business Segment Analysis section of this MD&A.

## Objectives and 2020 Results

When setting its objectives, the Bank aims for a realistic challenge in the current business environment and factors in the predictable evolution in banking industry financial results as well as the Bank's business development plan. When the Bank sets its medium-term objectives, it does not take specified items<sup>(1)</sup> into consideration, as they are inherently unpredictable. Management therefore excludes specified items when assessing the Bank's performance against its objectives.

In fiscal 2020, the Bank recorded \$2,083 million in net income compared to \$2,322 million in fiscal 2019. Its 2020 diluted earnings per share stood at \$5.70 versus \$6.34 in fiscal 2019, and its 2020 return on common shareholders' equity (ROE) was 14.9% versus 18.0% in 2019. Net income excluding specified items<sup>(1)</sup> totalled \$2,216 million in fiscal 2020, and diluted earnings per share excluding specified items<sup>(1)</sup> stood at \$6.06, down 5% from \$6.36 in 2019. Furthermore, ROE excluding specified items<sup>(1)</sup> was 15.8% in 2020 versus 18.0% in 2019.

The following table compares the Bank's medium-term objectives with its 2020 results.

### Medium-Term Objectives and 2020 Results

	Medium-term objectives (%)	2020 results (%)
Growth in diluted earnings per share excluding specified items <sup>(1)</sup>	5-10	(5)
ROE excluding specified items <sup>(1)</sup>	15-20	15.8
Dividend payout ratio excluding specified items <sup>(1)</sup>	40-50	46.6
CET1 capital ratio	> 10.75	11.8
Leverage ratio	> 3.75	4.4

The Bank's financial results met all of the medium-term objectives, except for growth in diluted earnings per share. In fact, despite the growth in revenues from all operating segments, diluted earnings per share excluding specified items<sup>(1)</sup> was down 5% compared to the previous year. This target was not met primarily due to the significant increase in provision for credit losses during the year following the significant deterioration in the macroeconomic outlook caused by COVID-19 and the expected impact on clients. In addition, the ROE excluding specified items<sup>(1)</sup> is in line with the target set and the dividend payment ratio excluding specified items<sup>(1)</sup> is in the middle of the target range. The CET1 capital ratio and the leverage ratio, at 11.8% and 4.4% respectively, are also above the set targets.

- (1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

## Dividends

For fiscal 2020, the Bank declared \$953 million in dividends to common shareholders (2019: \$892 million), representing 50% of net income attributable to common shareholders (2019: 42%).

## Regulatory Capital Ratios

As at October 31, 2020, the Bank's CET1, Tier 1, and Total capital ratios were, respectively, 11.8%, 14.9% and 16.0%, i.e., above the regulatory requirements, compared to ratios of, respectively, 11.7%, 15.0% and 16.1% as at October 31, 2019. The increase in the CET1 capital ratio since October 31, 2019 was essentially due to net income net of dividends, transitional measures applicable to ECL provisioning, common share issuances under the Stock Option Plan, and remeasurements of pension plans and other post-employment benefit plans. The growth in risk-weighted assets, the expiry of transitional arrangements for specific wrong-way risk and for the revised securitization framework as well as the adoption of IFRS 16 contributed to offset this increase. The decreases in the Tier 1 capital ratio and the Total capital ratio were essentially due to growth in risk-weighted assets as well as to a redemption of trust units issued by NBC Asset Trust; however, the decrease was partly offset by the issuance of Limited Recourse Capital Notes (LRCN) – Series 1. As at October 31, 2020, the leverage ratio was 4.4% compared to 4.0% as at October 31, 2019. The increase in the leverage ratio is explained by the growth in Tier 1 capital, due to the same factors as described above, and by modest growth in total exposure, mainly from temporary measures announced by OSFI with respect to the exclusion of exposures from central bank reserves and sovereign-issued securities that qualify as HQLA securities under the *Liquidity Adequacy Requirements* guideline.

## High-Quality Loan Portfolio

Loans and acceptances, net of allowances, account for 50% of the Bank's total asset and amount to \$164.7 billion as at October 31, 2020. For fiscal 2020, the Bank recorded \$846 million in provisions for credit losses, \$499 million more than those recorded in fiscal 2019. This considerable increase mainly reflects a significant deterioration in the macroeconomic outlook (in particular GDP growth, the unemployment rate, and oil prices) caused by COVID-19 in fiscal 2020 and the expected impacts of the pandemic on the Bank's clients. The higher year-over-year provisions stem mainly from impaired loans in the Commercial Banking and Financial Markets segment. These increases were offset by lower provisions for credit losses on impaired loans from Personal Banking (including credit card receivables) as well as from lower provisions for credit losses in the USSF&I segment, related to the Credigy subsidiary. The 2020 provisions for credit losses represented 0.23% of average loans and acceptances, compared to 0.21% from fiscal 2019.

## Risk Profile

As at October 31 or for the year ended October 31  
(millions of Canadian dollars)

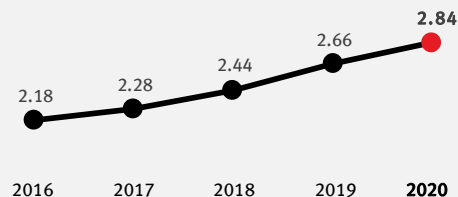
	2020	2019
Provisions for credit losses	846	347
Provisions for credit losses as a % of average loans and acceptances	0.53 %	0.23 %
Provisions for credit losses on impaired loans as a % of average loans and acceptances	0.23 %	0.21 %
Net write-offs as a % of average loans and acceptances	0.16 %	0.20 %
Gross impaired loans <sup>(1)</sup>	817	684
Net impaired loans <sup>(2)</sup>	465	450

(1) All loans classified in Stage 3 of the expected credit loss model are impaired loans. The impaired loans presented in this table exclude purchased or originated credit-impaired (POCI) loans.

(2) Net impaired loans are presented net of allowances for credit losses on Stage 3 loan amounts drawn. The net impaired loans presented in this table exclude POCI loans.

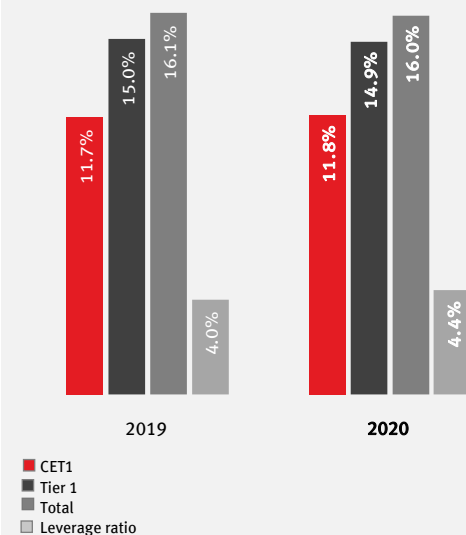
## Annual Dividend per Common Share

Year ended October 31  
(Canadian dollars)



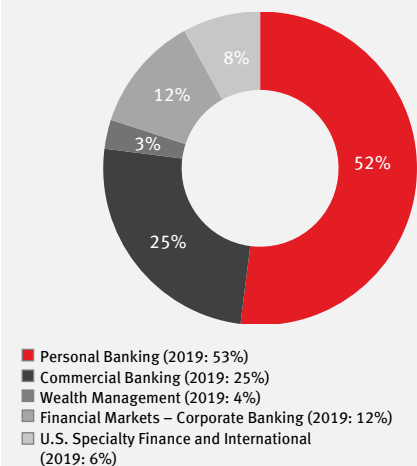
## Evolution of Regulatory Ratios under Basel III

As at October 31



## Breakdown of the Average Loan and Acceptance Portfolio<sup>(1)</sup>

As at October 31, 2020



(1) Excluding loans and acceptances in the *Other* heading

## Economic Review and Outlook

### Global economy

As expected, the global economy bounced back vigorously in the third quarter as several countries managed to flatten the coronavirus contagion curve and relax their social distancing rules. A strong rebound was expected as activities resumed in some sectors of the economy, especially since latent demand had accumulated during the lockdown period. The recovery was also driven by considerable assistance from public administrations in support of businesses and household income. But the situation is still far from normal. In the eurozone, GDP in the third quarter was still 4.3% below pre-crisis levels. In the United States the gap was 3.7%, similar to the shortfall logged at the height of the 2008-2009 recession. There is strong demand for goods whereas services are suffering due to physical distancing measures, and this is completely atypical in a recession that is benefiting manufacturing countries such as China, whose economy is performing better. We still have a long road ahead, and the global economy is expected to grow at a slower pace over the next few months, with several countries confronting a marked upsurge in the number of new COVID-19 infections. We expect the global economy to shrink 3.9%<sup>(1)</sup> in 2020, the sharpest contraction since the International Monetary Fund (IMF) began compiling the data in 1981. A 5.2%<sup>(1)</sup> rebound is expected next year, but this assumes that an effective vaccine will reach the general population in the second half of the year.

Two major factors will determine the performance of the U.S. economy over the next few months: developments in the pandemic and the size of Washington's next budget assistance program. In epidemiological terms, the situation has deteriorated rapidly in recent weeks. However, there does not appear to be any plans at this time to reinstate the kind of strict lockdowns now being implemented in several European countries. This does not mean that a resurgence of the coronavirus will have no impact on the economy. Looking ahead to next year, the strength of the economic recovery will depend largely on decisions taken in Washington. A larger fiscal stimulus package may have been possible had the Democrats swept to power in the presidential election with a decisive victory, since they have recently shown a greater willingness to loosen the purse strings. But it appears that the Republicans will likely maintain control of the Senate, which limits the size of any potential stimulus package. We expect the economy to bounce back 3.2%<sup>(1)</sup> in 2021, on the heels of a 3.6%<sup>(1)</sup> contraction in 2020.

### Canadian economy

In 2020, Canadian governments intervened in the economy with exceptional force, representing the strongest approach taken by an advanced country. As a result of this extraordinary support for workers who had lost their jobs and for businesses in difficulty, the economy has staged a surprisingly strong rally. In October, employment was only 3.3% short of its February highs, and the economy had recouped no less than 79% of the jobs that had been lost. But the employment figures do not fully reflect the damage done to the labour market. A significant share of the labour force is being underutilized, as evidenced by the 6.1% shortfall in hours worked compared to February's peak figure. It is important to note that in September, no fewer than 2.1 million workers (11% of the pre-pandemic workforce) were still indirectly receiving the emergency wage subsidy paid out by the federal government. This illustrates the large number of jobs that are still dependent on government interventions. While the ongoing spread of coronavirus is much more encouraging in Canada than in the other advanced countries, we are not immune to a sharp upturn. Despite the slump that is likely over the next few months due to physical distancing, we project the economy to grow 4.3%<sup>(1)</sup> in 2021 following a 5.5%<sup>(1)</sup> contraction in 2020. The light at the end of the tunnel (an effective vaccine) should support both business and consumer confidence.

### Quebec economy

In order to limit the spread of COVID-19 infections, which has been accelerating, Quebec has kept bars, restaurants dining rooms, theatres and gyms closed in several affected regions since the beginning of October. As a result, over 50,000 jobs were lost in October in the information/culture/leisure and accommodations/food services sectors. A net total of 13,000 jobs were lost during the month as other sectors picked up some of the slack. Despite this decline, employment was 2.9% below February levels, which compares favourably with the national average of 3.3%. We remain optimistic that the economy will continue to recover, given the Quebec government's fiscal flexibility and the fact that Quebec households are in better financial condition than those elsewhere in the country. Following a 6.1%<sup>(1)</sup> contraction in 2020, the Quebec economy could stage a 4.5%<sup>(1)</sup> rebound next year. Even though the recovery is expected to continue, the labour market is expected to have unused capacity for some time, while certain sectors where physical distancing remains an issue may continue to stand idle, pending the deployment of an effective vaccine.

(1) GDP growth forecasts, Economy and Strategy group, National Bank Financial

# Financial Analysis

## Consolidated Results

Year ended October 31

(millions of Canadian dollars)

	2020	2019	% change
<b>Operating results</b>			
Net interest income	4,255	3,596	18
Non-interest income	3,672	3,836	(4)
Total revenues	7,927	7,432	7
Non-interest expenses	4,545	4,301	6
Income before provisions for credit losses and income taxes <sup>(1)</sup>	3,382	3,131	8
Provisions for credit losses	846	347	144
Income before income taxes	2,536	2,784	(9)
Income taxes	453	462	(2)
Net income	2,083	2,322	(10)
Non-controlling interests	42	66	(36)
Net income attributable to the Bank's shareholders and holders of other equity instruments	2,041	2,256	(10)
Diluted earnings per share ( <i>dollars</i> )	5.70	6.34	(10)
<b>Taxable equivalent basis<sup>(1)</sup></b>			
Net interest income	208	195	
Non-interest income	57	135	
Income taxes	265	330	
Impact of taxable equivalent basis on net income	–	–	
<b>Specified items<sup>(1)</sup></b>			
Foreign currency translation loss on disposal of subsidiaries	(24)	–	
Impairment losses on premises and equipment and on intangible assets	(71)	(57)	
Severance pay	(48)	(10)	
Charge related to Maple	(13)	(11)	
Gain on disposal of Fiera Capital shares	–	79	
Gain on disposal of premises and equipment	–	50	
Provisions for onerous contracts	–	(45)	
Remeasurement at fair value of an investment	–	(33)	
Specified items before income taxes	(156)	(27)	
Income taxes on specified items	(23)	(21)	
Specified items after income taxes	(133)	(6)	
Non-controlling interests on specified items	(10)	–	
Specified items after income taxes and non-controlling interests	(123)	(6)	
<b>Operating results on a taxable equivalent basis and excluding specified items<sup>(1)</sup></b>			
Net interest income on a taxable equivalent basis	4,463	3,791	18
Non-interest income on a taxable equivalent basis and excluding specified items	3,753	3,875	(3)
Total revenues on a taxable equivalent basis and excluding specified items	8,216	7,666	7
Non-interest expenses excluding specified items	4,413	4,178	6
Income before provisions for credit losses and income taxes on a taxable equivalent basis and excluding specified items	3,803	3,488	9
Provisions for credit losses	846	347	144
Income before income taxes on a taxable equivalent basis and excluding specified items	2,957	3,141	(6)
Income taxes on a taxable equivalent basis and excluding specified items	741	813	(9)
Net income excluding specified items	2,216	2,328	(5)
Non-controlling interests excluding specified items	52	66	(21)
Net income attributable to the Bank's shareholders and holders of other equity instruments excluding specified items	2,164	2,262	(4)
Diluted earnings per share excluding specified items ( <i>dollars</i> )	6.06	6.36	(5)
Average assets	318,199	286,162	11
Average loans and acceptances	159,275	148,765	7
Average deposits	207,381	184,460	12
Efficiency ratio on a taxable equivalent basis and excluding specified items <sup>(1)</sup>	53.7 %	54.5 %	

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

## Analysis of Consolidated Results

### Financial Results

For fiscal 2020, the Bank's net income totalled \$2,083 million compared to \$2,322 million in fiscal 2019, a 10% decline. This decline was due to the considerable increase in provisions for credit losses during the fiscal year as a result of the significant deterioration in the macroeconomic outlook caused by COVID-19 and its expected impact on our clients. Income before provisions for credit losses and income taxes<sup>(1)</sup> stood at \$3,382 million for fiscal 2020, up 8% year over year, driven by revenue growth across all the Bank's business segments. Specified items, net of income taxes, had a \$133 million unfavourable impact on net income in 2020 compared to a \$6 million unfavourable impact one year earlier. The fiscal 2020 specified items, net of income taxes, consist of a \$36 million foreign currency loss on disposals of subsidiaries, \$52 million in impairment losses on premises and equipment and on intangible assets, \$35 million in severance pay and a \$10 million charge related to Maple. Specified items in fiscal 2019, net of income taxes, consisted of a \$68 million gain on disposal of Fiera Capital shares, a \$43 million gain on disposal of premises and equipment, a \$27 million loss on the remeasurement at fair value of the Bank's investment in NSIA, \$42 million in impairment losses on premises and equipment and on intangible assets, \$7 million in severance pay, an \$8 million charge related to Maple and \$33 million in provisions for onerous contracts. For fiscal 2020, the Bank's net income excluding specified items<sup>(1)</sup> totalled \$2,216 million, down 5% from \$2,328 million in fiscal 2019. Income before credit losses and income taxes on a taxable equivalent basis and excluding specified items<sup>(1)</sup> was \$3,803 million for fiscal 2020, up 9% year over year.

### Total Revenues

For fiscal 2020, the Bank's total revenues amounted to \$7,927 million, up \$495 million or 7% from \$7,432 million in fiscal 2019. The increase in total revenues was driven by revenue growth across all of the Bank's business segments. The fiscal 2020 total revenues include a \$24 million loss on disposals of subsidiaries, while fiscal 2019 total revenues included a \$79 million gain on disposal of Fiera Capital shares, a \$50 million gain on disposal of premises and equipment, and a \$33 million loss arising from the remeasurement at fair value of the Bank's investment in NSIA. The 2020 total revenues on a taxable equivalent basis and excluding specified items<sup>(1)</sup> were up \$550 million or 7% year over year. For additional information about total revenues on a taxable equivalent basis<sup>(1)</sup>, see Table 2 on page 116.

### Net Interest Income

For fiscal 2020, the Bank's net interest income totalled \$4,255 million, rising \$659 million or 18% from \$3,596 million in fiscal 2019. The 2020 net interest income on a taxable equivalent basis<sup>(1)</sup> was \$4,463 million compared to \$3,791 million in fiscal 2019 (Table 3, page 116).

In the Personal and Commercial (P&C) segment, the fiscal 2020 net interest income totalled \$2,445 million, a \$61 million or 3% year-over-year increase driven mainly by growth in loan volumes and in deposit volumes, which rose 4% and 8%, respectively, year over year. The growth in loans was primarily due to mortgage and commercial lending activity, while the growth in deposits was partly due to support measures granted by governments in the context of the COVID-19 pandemic. The increase in P&C's net interest income was tempered by a narrowing of the net interest margin, which was 2.19% in fiscal 2020 versus 2.23% in fiscal 2019, largely due to the decrease in deposit margins. In the Wealth Management segment, net interest income for fiscal 2020 was \$442 million, a 3% year-over-year decrease owing to lower interest rates, which more than offset the increase in deposit volumes.

As for the Financial Markets segment, its fiscal 2020 net interest income on a taxable equivalent basis<sup>(1)</sup> was up \$472 million year over year, mainly due to trading activities, and should be examined together with the other items of trading activity revenues. In the USSF&I segment, for fiscal 2020 net interest income was up \$151 million, or 23% year over year, owing to growth in loan and deposit volumes at the Advanced Bank of Asia Limited (ABA Bank) subsidiary in fiscal 2020 and the increase in net interest income at the Credigy subsidiary related to the volume growth in loan portfolios.

### Non-Interest Income

For fiscal 2020, non-interest income totalled \$3,672 million versus \$3,836 million in fiscal 2019. The 2020 non-interest income includes a \$24 million foreign currency translation loss on disposal of subsidiaries, while non-interest income in fiscal 2019 included a \$79 million gain on disposal of Fiera Capital shares, a \$50 million gain on disposal of premises and equipment, and a \$33 million loss arising from the remeasurement at fair value of the Bank's investment in NSIA. Non-interest income on a taxable equivalent basis and excluding specified items<sup>(1)</sup> amounted to \$3,753 million in fiscal 2020 compared to \$3,875 million in fiscal 2019. For additional information on non-interest income on a taxable equivalent basis<sup>(1)</sup>, see Table 4 on page 117.

The fiscal 2020 revenues from underwriting and advisory fees were up 26% year over year, in particular due to merger and acquisition activities in the Financial Markets segment. Revenues from securities brokerage commissions rose 10%. Mutual fund revenues and trust service revenues totalled \$1,152 million in fiscal 2020, a \$94 million year-over-year increase owing to growth in assets under administration and under management as a result of net inflows into various solutions and from stronger stock market performance in fiscal 2020.

Revenues from credit fees and revenues from acceptances and letters of credit and guarantee increased \$50 million from fiscal 2019, due to higher volumes of credit activity in Commercial Banking and the Financial Markets segment. In addition, card revenues and revenues from deposit and payment service charges were down 21% and 3%, respectively, in fiscal 2020 due to a sharp drop in the number of transactions as a result of the impacts of the pandemic, including the temporary closure of businesses and non-essential services and the lockdowns imposed by governments.

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

The trading revenues recorded in non-interest income amounted to \$604 million in fiscal 2020 compared to \$829 million in fiscal 2019. Trading revenues on a taxable equivalent basis<sup>(1)</sup> recorded in non-interest income totalled \$661 million, down from \$964 million in 2019. Including the portion recorded in net interest income, trading activity revenues on a taxable equivalent basis<sup>(1)</sup> amounted to \$1,466 million in 2020, a \$274 million year-over-year increase (Table 5, page 117) attributable to revenues from equity securities and from fixed-income securities, as well as revenues from commodities and foreign exchange activities of the Financial Markets segment. The trading revenues of other segments also increased.

In fiscal 2020, gains on non-trading securities and foreign exchange revenues were up \$16 million and \$8 million, respectively, compared to fiscal 2019. Insurance revenues decreased \$8 million year over year and the Bank's share in the net income of associates and joint ventures was also down \$6 million. Lastly, other revenues amounted to \$104 million in fiscal 2020, a \$147 million year-over-year decrease owing mainly to specified items recorded in fiscal 2020 and 2019, i.e. a foreign currency translation loss on disposal of subsidiaries in fiscal 2020 and, in fiscal 2019, a gain on disposal of Fiera Capital shares and a gain on disposal of premises and equipment, tempered by a loss arising from a fair value remeasurement of the Bank's investment in NSIA. These items had a \$120 million unfavourable impact on growth in other revenues.

#### **Non-Interest Expenses**

Non-interest expenses stood at \$4,545 million in fiscal 2020, up \$244 million from fiscal 2019 (Table 6, page 118). The 2020 non-interest expenses included \$71 million in impairment losses on premises and equipment and on intangible assets, \$48 million in severance pay and a \$13 million charge related to Maple. The 2019 non-interest expenses include \$57 million in impairment losses on premises and equipment and on intangible assets, \$10 million in severance pay, an \$11 million charge related to Maple and \$45 million in provisions for onerous contracts. Non-interest expenses excluding specified items<sup>(1)</sup> stood at \$4,413 million, up \$235 million or 6% year over year.

Compensation and employee benefits stood at \$2,713 million in fiscal 2020, a 7% year-over-year increase that was essentially due to the annual increase in salaries, an increase in the number of employees, expenses incurred by the Bank to deploy pandemic-related measures, and higher severance pay in fiscal 2020. The decrease in occupancy expenses is attributable to provisions for onerous contracts recorded in fiscal 2019, tempered somewhat by the expansion of ABA Bank's banking network on these expenses in 2020. The increase in the technology expenses, including amortization, were related to technology investments made by the Bank for its transformation plan and for business development purposes, as well as higher impairment losses on premises and equipment and on intangible assets in fiscal 2020. The decrease in travel and business development expenses in 2020 stems from the lockdown and social distancing measures imposed by governments in the context of the pandemic.

#### **Provisions for Credit Losses**

For fiscal 2020, the Bank recorded \$846 million in provisions for credit losses, compared to \$347 million in provisions recorded in fiscal 2019 (Table 7, page 119). This considerable increase came from provisions for credit losses on non-impaired loans mainly due to a significant deterioration in the macroeconomic conditions caused by COVID-19 in fiscal 2020, including the GDP growth rate, the unemployment rate and oil prices, as well as the expected impact of the pandemic on the Bank's clients. This was also due to provisions for credit losses on impaired loans in Commercial Banking and in the Financial Markets segment, which increased \$75 million and \$47 million, respectively, in fiscal 2020. These increases were offset by provisions for credit losses on impaired loans that were \$19 million lower in Personal Banking (including credit card receivables) and \$48 million in the USSF&I segment, attributable to the Credigy subsidiary related to repayments and maturities of certain loan portfolios. At \$372 million, the fiscal 2020 provisions for credit losses on impaired loans represent 0.23% of average loans and acceptances, up from 0.21% in fiscal 2019.

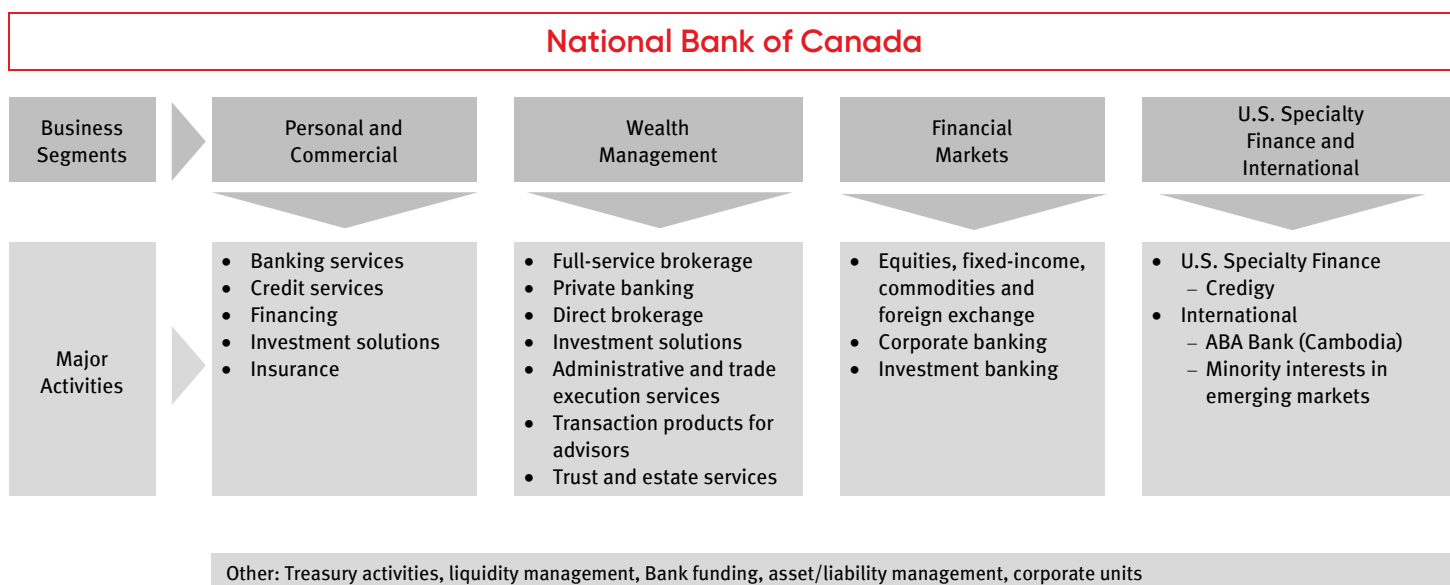
#### **Income Taxes**

Detailed information about the Bank's income taxes is provided in Note 24 to the consolidated financial statements. For fiscal 2020, income taxes stood at \$453 million, representing an effective tax rate of 18% compared to \$462 million and an effective tax rate of 17% in fiscal 2019. This change in effective tax rate stems from the tax impact of the disposal of the subsidiaries in Brazil, from a decrease in the income tax rate applicable to the ABA subsidiary, as the Cambodian government has granted tax incentive measures, as well as the realization of capital gains that were taxed at a lower rate in fiscal 2019.

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

## Business Segment Analysis

The Bank carries out its activities in four business segments, which are defined below. For presentation purposes, other activities are grouped in the *Other* heading. Each reportable segment is distinguished by services offered, type of clientele and marketing strategy.



## Results by Business Segment

Year ended October 31<sup>(1)</sup>  
(millions of Canadian dollars)

	Personal and Commercial		Wealth Management		Financial Markets		USSF&I		Other		Total	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Net interest income <sup>(2)</sup>	2,445	2,384	442	455	946	474	807	656	(385)	(373)	4,255	3,596
Non-interest income <sup>(2)</sup>	1,018	1,067	1,413	1,288	1,108	1,277	13	59	120	145	3,672	3,836
Total revenues	3,463	3,451	1,855	1,743	2,054	1,751	820	715	(265)	(228)	7,927	7,432
Non-interest expenses	1,849	1,837	1,115	1,073	809	756	319	285	453	350	4,545	4,301
Income before provisions for credit losses and income taxes <sup>(3)</sup>	1,614	1,614	740	670	1,245	995	501	430	(718)	(578)	3,382	3,131
Provisions for credit losses	517	237	7	–	239	30	80	80	3	–	846	347
Income before income taxes (recovery)	1,097	1,377	733	670	1,006	965	421	350	(721)	(578)	2,536	2,784
Income taxes (recovery) <sup>(2)</sup>	290	366	194	176	266	257	69	71	(366)	(408)	453	462
Net income	807	1,011	539	494	740	708	352	279	(355)	(170)	2,083	2,322
Non-controlling interests	–	–	–	–	–	–	34	40	8	26	42	66
Net income attributable to the Bank's shareholders and holders of other equity instruments	807	1,011	539	494	740	708	318	239	(363)	(196)	2,041	2,256
Average assets	117,338	112,798	5,917	6,219	123,943	112,493	14,336	10,985	56,665	43,667	318,199	286,162

(1) For the year ended October 31, 2019, certain amounts have been reclassified.

(2) The *Net interest income*, *Non-interest income* and *Income taxes (recovery)* items of the business segments are presented on a taxable equivalent basis. See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

(3) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

## Business Segment Analysis | Personal and Commercial

The Personal and Commercial segment meets the financial needs of close to 2.6 million individuals and over 138,000 businesses across Canada. These clients entrust the Bank to manage, invest, and safeguard their assets and to finance their projects. Clients turn to the Bank's experienced advisors who take the time to understand their specific needs and help them reach their financial goals. And thanks to the Bank's convenient self-banking channels, 403 branches and 940 banking machines across Canada, clients can do their daily banking whenever and wherever they wish.

### Personal Banking

Personal Banking provides a complete range of financing and investment products and services, mainly in Quebec, to help clients reach their financial goals throughout every stage in their lives. It offers everyday transaction solutions, mortgage loans and home equity lines of credit, consumer loans, payment solutions, savings and investment solutions as well as a range of insurance products.

### Commercial Banking

Commercial Banking serves the financial needs of small and medium-sized enterprises and large corporations, helping them to achieve growth. It offers a full line of financial products and services, including credit, deposit and investment solutions, international trade, foreign exchange transactions, payroll, cash management, insurance, electronic transactions and complementary services. With deep roots in the business community for over 160 years, Commercial Banking is Quebec's leading provider of the core banking products for businesses and is also known across Canada for its expertise in targeted specialized industries such as health, agriculture and agri-food, technology, creative industries, real estate, and energy.

### Economic and Market Review

The closure of non-essential services in March and April 2020 in Canada to limit the spread of COVID-19 could have had disastrous consequences for households and businesses. Fortunately, the federal government put in place generous programs to support them during the pandemic. Workers who have lost their jobs are benefiting from new income support programs that are much more generous than usual. Among other things, the government has helped businesses maintain an employment relationship with many employees despite their financial difficulties with the implementation of the wage subsidy. The budget measures implemented led to an impressive rebound in retail sales and real estate activity, which have also been stimulated by lower interest rates. Although Quebec was the epicentre of the pandemic and the government was forced to impose strict physical distancing measures, the most recent labour market data shows that job recovery is proceeding well and compares favourably with the rest of the country. We remain optimistic that the recovery will continue given the fiscal flexibility of the Quebec government and the fact that households are in a better financial position than elsewhere in the country because real estate remains more affordable. As for business investments, they should continue to rebound, especially since there is now a light at the end of the tunnel with the hope of an effective vaccine.

The economic environment in 2020 and the outlook for 2021 are discussed in more detail in the Economic Review and Outlook section on page 28.

### Key Success Factors

- Strong penetration in our core Quebec market thanks to a full range of personal and commercial services.
- Well-established and enduring client relationships grounded in an ability to provide both advice and a full range of solutions tailored to specific client needs.
- The largest sales force in Quebec, consisting of both generalists and specialists, positioning us to offer the best advice to clients.
- Unmatched closeness to Quebec entrepreneurs, with leading expertise in business lending and risk management solutions.
- Recognized expertise across Canada in specialized industries.
- Ability to meet all the needs facing businesses and entrepreneurs in collaboration with other Bank segments.

## Objectives and Strategies

The Personal and Commercial segment is targeting growth by becoming a more simple, efficient bank focused on constantly improving the client experience. In fact, the COVID-19 pandemic resulted in increased client satisfaction due to the mobilization of all employees to ensure that our advice and services would be accessible. The Bank significantly increased external communications (Facebook Live with various Bank experts and economic news capsules) to answer clients' questions during this period of uncertainty.

Strategic Priorities	2020 Achievements and Highlights
<p><b>Maintain volume growth and accelerate net client acquisition</b></p>	<ul style="list-style-type: none"> <li>&gt; As a result of COVID-19, deployed relief measures and implemented a distinctive and proactive advisory approach in order to offer solutions that could respond to each client's personal situation.</li> <li>&gt; As a result of COVID-19, deployed support measures for the elderly, including a dedicated telephone line in our Customer Service Centres used to handle calls on a priority basis.</li> <li>&gt; Continued efforts to grow our client base through expanded geographic coverage, the use of online origination solutions, and our various campaigns that focus on advice tailored to each stage of life.</li> <li>&gt; Personalized our advisory services to target strategic clients such as newcomers, millennials, professionals, people aged 50 to 64, and small and medium-sized enterprises (SMEs).</li> <li>&gt; Enhanced the product offering by improving our financial programs for our professional clients and launched a US\$ high yield account for businesses.</li> <li>&gt; Created the National Bank SME Growth Fund, L.P. in partnership with the Quebec government, to support businesses in their digital transformation and growth projects.</li> <li>&gt; Performance superior to the previous fiscal year in residential financing supporting a very active real estate market in this context of pandemic.</li> </ul>
<p><b>Improve the client experience</b></p>	<ul style="list-style-type: none"> <li>&gt; Enhanced the capabilities of the transactional platform and the mobile app to deliver a simpler, safer, and more intuitive digital experience.</li> <li>&gt; Improved the experience for personal banking clients by providing a consolidated view of all their investments and allowing them to do their banking simply and independently.</li> <li>&gt; Optimized the client onboarding process to enhance use levels of our banking solutions.</li> <li>&gt; Transformed the experience in more than 40 branches in Quebec to assist clients in their switch to self-service, by being proactive with the advisory offering.</li> <li>&gt; Opened a new Customer Contact Centre in Sherbrooke to diversify our call intake pool and support client accessibility.</li> </ul>
<p><b>Accelerate the digital transformation</b></p>	<ul style="list-style-type: none"> <li>&gt; As a result of COVID-19, quickly deployed new digital functionalities, including new forms for payment deferral requests (mortgages, personal loans and credit cards) and online registration for Canada Revenue Agency (CRA) direct deposit.</li> <li>&gt; As a result of COVID-19, implemented processes that enable clients to conduct business remotely with their advisor (electronic signature, virtual meeting).</li> <li>&gt; Enhanced online origination processes (Personal and Commercial account opening and instant credit card approvals).</li> <li>&gt; Added self-service functionalities.</li> <li>&gt; Launched a virtual assistant and online tutorials to help clients use our digital solutions.</li> <li>&gt; Deployed an online international money transfer solution for personal banking clients that will allow them to transfer money from Canada to foreign bank accounts (19 countries in the eurozone).</li> <li>&gt; Deployed a digital financing platform for our sales forces, improving the speed of our offers of financing to businesses.</li> </ul>
<p><b>Improve efficiency</b></p>	<ul style="list-style-type: none"> <li>&gt; Continued to simplify and automate client processes, both for retail clients (account openings, payments, residential financing and investing) and for business clients (account openings, financing and cash management).</li> </ul>

## Priorities and Outlook for 2021

### **Maintain volume growth and accelerate net client acquisition**

- Keep consulting at the core of our strategy by continuing to focus on client engagement and by:
  - equipping our employees to continuously improve the proactivity and relevance of their advice;
  - redefining our distribution network in order to foster proactive consulting, risk management and improved client accessibility.
- Continue our efforts to acquire key clients with high growth potential, particularly among Gen Z, millennials, newcomers to Canada already in the country, professionals, people aged 50 to 64 and SMEs, with our online origination capabilities and our competitive offer while enhancing the Bank's presence among these clients.
- Accelerate acquisitions and sales initiated on our digital channels.
- Continue to tailor our offering to market particularities, the competition, geographic location and micromarkets.

### **Optimize the client experience**

- Provide clients with a simple, unified experience characterized by an integrated approach across all products and distribution channels.
- Enhance our mobile application and expand self-service options on our digital channels.
- Make the most of client data and place it at the heart of our transformation.
- Help business clients grow by giving them access to the Bank's network of entrepreneurs.

### **Improve efficiency**

- Continue simplifying and automating certain targeted processes (transactional solutions, investments, payments, and commercial financing).
- Develop our product offering for our clients (transactional solutions, cards, payments, cash management).

## Segment Results – Personal and Commercial

Year ended October 31

(millions of Canadian dollars)

	2020	2019 <sup>(1)</sup>	% change
Net interest income	2,445	2,384	3
Non-interest income	1,018	1,067	(5)
Total revenues	3,463	3,451	–
Non-interest expenses	1,849	1,837	1
Income before provisions for credit losses and income taxes <sup>(2)</sup>	1,614	1,614	–
Provisions for credit losses	517	237	
Income before income taxes	1,097	1,377	(20)
Income taxes	290	366	(21)
<b>Net income</b>	<b>807</b>	<b>1,011</b>	<b>(20)</b>
Net interest margin <sup>(3)</sup>	2.19 %	2.23 %	
Average interest-bearing assets	111,488	106,995	4
Average assets	117,338	112,798	4
Average loans and acceptances	116,838	112,290	4
Net impaired loans <sup>(4)</sup>	412	409	1
Net impaired loans <sup>(4)</sup> as a % of average loans and acceptances	0.4 %	0.4 %	
Average deposits	67,390	62,301	8
Efficiency ratio	53.4 %	53.2 %	

(1) For the year ended October 31, 2019, certain amounts have been reclassified.

(2) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

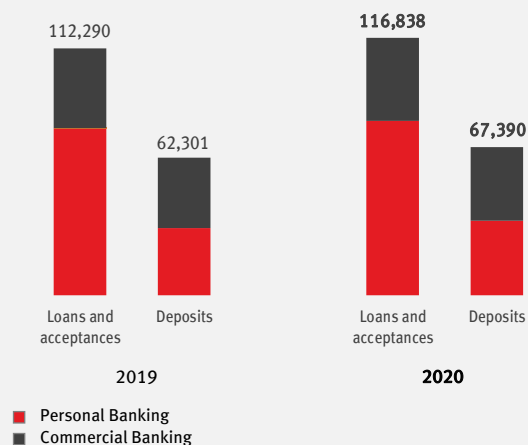
(3) Net interest margin is calculated by dividing net interest income by average interest-bearing assets.

(4) Net impaired loans are presented net of allowances for credit losses on Stage 3 loan amounts drawn.

### Average Loans and Acceptances and Deposits

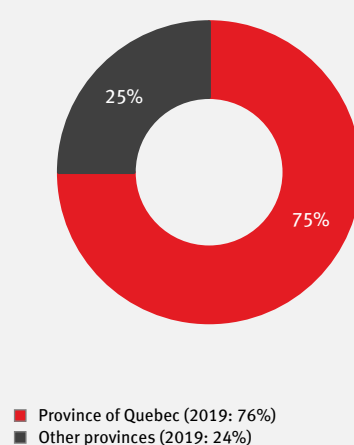
Year ended October 31

(millions of Canadian dollars)



### Total Revenues by Geographic Distribution

Year ended October 31, 2020



## Financial Results

In the Personal and Commercial segment, net income totalled \$807 million in fiscal 2020, down 20% from \$1,011 million in fiscal 2019, essentially due to the impacts of the COVID-19 pandemic, including a large increase in provisions for credit losses. The segment's total revenues rose \$12 million, as the \$61 million growth in net interest income was offset by a \$49 million decrease in non-interest income. The increase in net interest income was driven mostly by higher personal and commercial loan and deposit volumes. This growth was offset by a narrowing of the net interest margin, which was 2.19% in fiscal 2020 versus 2.23% in fiscal 2019, a decrease resulting mainly from deposit margins and, to a lesser extent, loan margins.

The segment's non-interest expenses stood at \$1,849 million in fiscal 2020, a 1% year-over-year increase attributable mainly to increases in compensation and employee benefits related to the annual increase in salaries and higher charges related to the segment's strategic initiatives. These increases were partly offset by the decline in certain variable expenses, including business development expenses, due to social distancing and lockdown measures imposed by governments. Given these results, the segment's fiscal 2019 income before provisions for credit losses and income taxes<sup>(1)</sup> was relatively unchanged year over year. And, at 53.4% for fiscal 2020, the segment's efficiency ratio was comparable to the ratio of 53.2% recorded in 2019.

For fiscal 2020, the segment recorded \$517 million in provisions for credit losses, compared to \$237 million in fiscal 2019, an increase of \$280 million. This increase came mainly from an increase in the provisions for credit losses on non-impaired loans in Personal Banking and Commercial Banking, as well as non-impaired credit card receivables, due to the significant deterioration in the macroeconomic outlook caused by COVID-19 and the pandemic's expected impact on the segment's clients. Provisions for credit losses on Commercial Banking's impaired loans also rose sharply when compared to fiscal 2019.

### Personal Banking

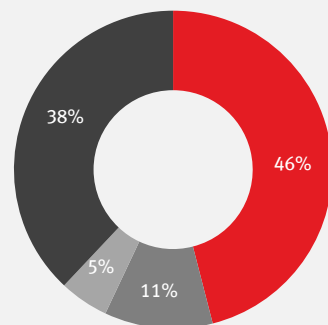
For fiscal 2020, Personal Banking's total revenues amounted to \$2,154 million, compared to \$2,163 million in fiscal 2019. A 4% increase in loan volumes and 10% growth in deposit volumes were tempered by a narrowing of the net interest margin on loans and deposits. In addition, the \$50 million decrease in non-interest income was essentially due to lower credit card revenues and revenues from deposit and payment service charges, as the number of transactions dropped due to the impacts of the pandemic, including the temporary closing of businesses and non-essential services and the lockdowns imposed by governments. Non-interest expenses increased \$6 million in fiscal 2020, owing mainly to higher technology investment expenses as well as higher compensation and employee benefits.

### Commercial Banking

For fiscal 2020, Commercial Banking's total revenues amounted to \$1,309 million, rising 2% from \$1,288 million in fiscal 2019. Its net interest income was up, essentially due to growth in loan volumes and deposit volumes, which rose 4% and 6%, respectively, tempered by a narrowing of the net interest margin on loans and deposits. Non-interest income was relatively stable year over year. The increase in revenues from bankers' acceptances was offset by lower revenues from deposit and payment service charges, a result of the context around the pandemic, as well as the decrease in revenues from foreign exchange activities. Commercial Banking's non-interest expenses rose \$6 million in fiscal 2020, mainly due to higher compensation and employee benefits.

#### Total Revenues by Category

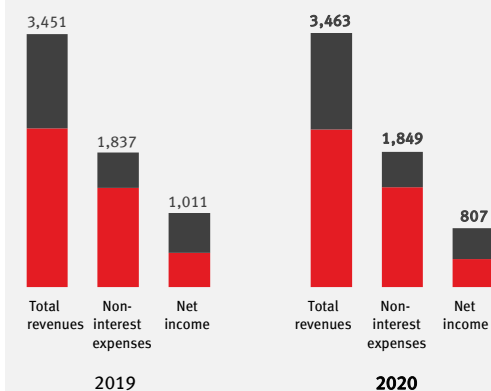
Year ended October 31, 2020



- Retail (2019: 45%)
- Payment Solutions (2019: 13%)
- Insurance (2019: 5%)
- Commercial Banking (2019: 37%)

#### Operating Results

Year ended October 31  
(millions of Canadian dollars)



- Personal Banking
- Commercial Banking

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

## Business Segment Analysis | Wealth Management

As a leader in Quebec and firmly established across Canada, the Wealth Management segment serves all market segments by emphasizing advisory services and close client relationships. It delivers a full range of wealth management products and solutions through a multi-channel distribution network and a differentiated business model. The Wealth Management segment also proposes investment solutions to independent advisors as well as solutions to institutional clients.

### Business Units

#### Full-Service Brokerage

Drawing on the largest network of investment advisors in Quebec, National Bank Financial – Wealth Management (NBFWM) provides wealth management advisory services with more than 800 advisors at close to 100 service points across Canada. Its advisors serve over 400,000 retail clients, proposing portfolio management services, financial and succession planning services, and insurance services while working in close collaboration with other segments of the Bank.

#### Private Banking

*Private Banking 1859* (PB1859) offers highly personalized wealth management services and advice across Canada, helping affluent clients to benefit from comprehensive management of their personal and family fortunes. As a true market leader in Quebec, PB1859 continues to expand its operations across Canada with its extensive range of financial solutions and strategies covering the protection, growth, and transition of wealth.

#### Direct Brokerage

National Bank Direct Brokerage (NBDB) offers a multitude of financial products and investment tools to self-directed investors across Canada through its online investment solution. NBDB helps customers who want to manage their own investments to do so through a trading platform and an optimized mobile trading platform or by speaking directly to a representative on the phone.

#### Investment Solutions

National Bank Investments Inc. (NBI) manufactures and offers mutual funds, investment solutions, and services to consumers and institutional investors through the Bank's extended network. With its open architecture model, NBI is Canada's largest investment fund manager to entrust the management of its investments exclusively to external portfolio managers.

#### Administrative and Trade Execution Services

National Bank Independent Network (NBIN) is a Canadian leader in providing administrative services such as trade execution, custodial services, and brokerage solutions to many independent financial services firms across Canada, in particular to introducing brokers, portfolio managers, and investment fund managers.

#### Transaction Products

The Wealth Management segment provides independent advisors across Canada with an extensive range of investment products, including guaranteed investment certificates (GICs), mutual funds, notes, structured products, and monetization, helping to support their own business needs and client relationships.

#### Trust and Estate Services

Through National Bank Trust Inc. (NBT), the Wealth Management segment provides retail and institutional clients with turnkey services and solutions. Its team of experts offers a full range of high value-added services designed to consolidate, protect, and transfer its customers' wealth and give them peace of mind. NBT also offers integrated trustee and depository services as well as securities custody services.

### Economic and Market Review

Policymakers have taken extraordinary measures in 2020 to limit the negative impact of social distancing measures to counter COVID-19. Governments in North America have aggressively supported households and businesses in difficulty. The central banks lowered interest rates to near zero and launched quantitative easing programs to provide affordable financing to governments and other borrowers. As a result of these unprecedented interventions, the stress in financial markets eased considerably after rising sharply in March 2020. The major financial asset classes have benefited, and at the time of this report, households are no longer experiencing a negative wealth effect in 2020, an atypical situation in a recession. In short, policymakers have put in place favourable conditions for an economic recovery that should continue in 2021.

The economic environment in 2020 and the outlook for 2021 are discussed in more detail in the Economic Review and Outlook section on page 28.

## Key Success Factors

- Leadership position in Quebec in terms of market share and brand recognition.
- Largest manager of managers in Canada (open architecture); clients benefit from objective advice.
- Leadership position in Canada in securities custody and brokerage services for independent wealth management firms.
- Firmly rooted across Canada in full-service brokerage services.
- Ability to forge solid, lasting client relationships built on personalized advice and solutions provided at every life stage.
- High level of client satisfaction with private management, full-brokerage and direct brokerage services.
- Proven track record and excellent reputation as a business partner among non-bank financial institutions.
- Ability to work closely with the Personal and Commercial segment and to leverage its distribution platform.

## Objectives and Strategies

The Wealth Management segment will capitalize on the strength of the Bank's brand by generating sustained growth in income, improving client satisfaction and maintaining high employee engagement. The Wealth Management segment distinguishes itself from its competition by offering an exceptional experience in terms of advice, offering innovative solutions and impeccable service thanks to agile and aligned multifunctional teams. The segment seeks to increase market penetration across Canada through organic growth as well as targeted actions and partnerships.

Strategic Priorities	2020 Achievements and Highlights
<b>Transform the partnership with clients</b>	<ul style="list-style-type: none"> <li>&gt; Produced digital content to support clients during the COVID-19 crisis.</li> <li>&gt; Deployed a strategy that centres on goals and life stages.</li> <li>&gt; Provided best market pricing on online brokerage platform.</li> <li>&gt; Launched the Philantra Foundation, which gives our clients easier access to philanthropic services.</li> </ul>
<b>Invest in high-growth markets</b>	<ul style="list-style-type: none"> <li>&gt; Launched NB exchange-traded funds (ETFs).</li> <li>&gt; Improved cross-selling strategy in partnership with other Bank segments.</li> <li>&gt; Opened a new private management location in downtown Toronto.</li> <li>&gt; Actively recruited investment advisors to increase our market share.</li> <li>&gt; Experienced strong growth in our services to independent firms.</li> </ul>
<b>Continue transforming Wealth Management's culture</b>	<ul style="list-style-type: none"> <li>&gt; Promoted a joint mission and an integrated client approach.</li> <li>&gt; Focused on collaboration between employees of the Wealth Management segment and other segments of the Bank.</li> <li>&gt; Implemented concrete measures to promote innovation and accelerate transformation.</li> <li>&gt; Exceptional adaptation of our ways of working and communicating during the pandemic due to accelerated implementation and adoption of tools needed to work from home.</li> </ul>

## Priorities and Outlook for 2021

### Transform the way we serve clients

- Improve online brokerage services.
- Increase use of data and full view of client information to provide better advice.
- Increase the usability of the new Mutual Fund Dealers Association of Canada (MFDA) platform, which is designed to replace certain existing asset management platforms.
- Markedly increase our digital capabilities in full-service brokerage services.
- Gradually implement tools allowing our advisors to apply the "Lifetime Advice" approach.

### Concentrate on fast-growing markets

- Launch new types of investment products.
- Develop a new administrative services platform for institutional clients.
- Continue to develop markets outside Quebec.
- Increase in our market portfolio shares by focusing on synergies with the Personal and Commercial and Financial Markets segments.

### Continue transforming Wealth Management's culture

- Deploy activities promoting collaboration between employees.
- Focus on leadership and cross-cutting initiatives.

## Segment Results – Wealth Management

Year ended October 31

(millions of Canadian dollars)

	2020	2019 <sup>(1)</sup>	% change
Net interest income	442	455	(3)
Fee-based revenues	1,087	1,013	7
Transaction and other revenues	326	275	19
<b>Total revenues</b>	<b>1,855</b>	<b>1,743</b>	<b>6</b>
Non-interest expenses	1,115	1,073	4
Income before provisions for credit losses and income taxes <sup>(2)</sup>	740	670	10
Provisions for credit losses	7	–	
Income before income taxes	733	670	9
Income taxes	194	176	10
<b>Net income</b>	<b>539</b>	<b>494</b>	<b>9</b>
Average assets	5,917	6,219	(5)
Average loans and acceptances	4,776	4,855	(2)
Net impaired loans <sup>(3)</sup>	2	3	(33)
Average deposits	34,507	32,321	7
Efficiency ratio	60.1 %	61.6 %	

(1) For the year ended October 31, 2019, certain amounts have been reclassified.

(2) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

(3) Net impaired loans are presented net of allowances for credit losses on Stage 3 loan amounts drawn.

## Assets Under Administration and Under Management – Wealth Management

As at October 31

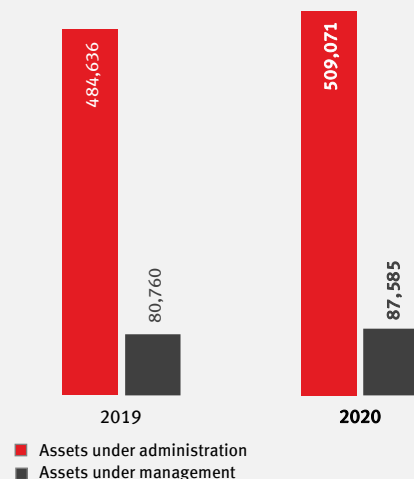
(millions of Canadian dollars)

	2020	2019	% change
<b>Assets under administration</b>	<b>509,071</b>	<b>484,636</b>	<b>5</b>
<b>Assets under management</b>			
Individual	48,140	43,941	10
Mutual funds	39,445	36,819	7
	<b>87,585</b>	<b>80,760</b>	<b>8</b>
<b>Assets under administration and under management</b>	<b>596,656</b>	<b>565,396</b>	<b>6</b>

### Assets Under Administration and Under Management

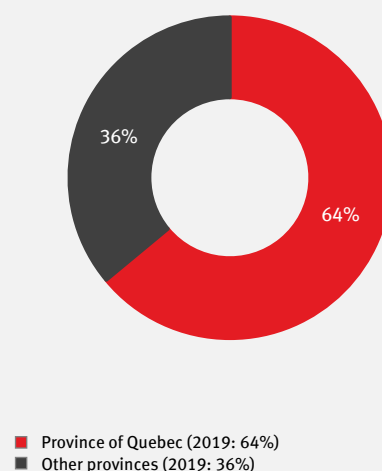
Year ended October 31

(millions of Canadian dollars)



### Total Revenues by Geographic Distribution

Year ended October 31, 2020



## Financial Results

In the Wealth Management segment, net income totalled \$539 million in fiscal 2020, up 9% from \$494 million in fiscal 2019. The segment's total revenues amounted to \$1,855 million in fiscal 2020, up 6% from \$1,743 million in fiscal 2019. This increase stems partly from a 7% increase in fee-based revenues, owing to growth in the segment's assets under administration and under management generated by net inflows into various solutions and due to stronger stock market performance in fiscal 2020. Transaction-based and other revenues also rose 19% due to higher transaction volumes in fiscal 2020 as a result of stock market volatility. In addition, the decline in net interest income was attributable to a narrower margin on deposits, related to lower interest rates and partly offset by the increase in deposit volumes.

The segment's non-interest expenses stood at \$1,115 million in fiscal 2020 compared to \$1,073 million for fiscal 2019, an increase attributable to higher compensation and employee benefits, including variable compensation tied to higher revenues and higher operations support charges related to the segment's initiatives. The 2020 efficiency ratio was 60.1% in fiscal 2020, an improvement from 61.6% in fiscal 2019.

The segment's provisions for credit losses increased \$7 million year over year, both as a result of provisions for credit losses on non-impaired loans, in connection with the significant deterioration in the macroeconomic outlook caused by COVID-19, and due to higher provisions on credit losses on impaired loans.

### Assets Under Administration and Under Management

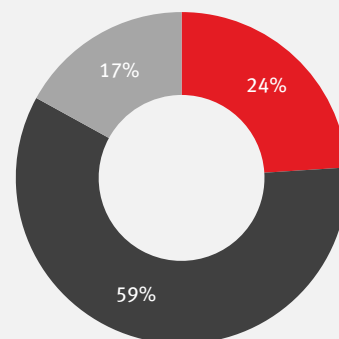
As at October 31, 2020, assets under administration and under management totalled \$596.7 billion, rising \$31.3 billion or 6% from October 31, 2019 due to net inflows into various solutions and to stronger stock market performance in fiscal 2020.

Assets under administration totalled \$509.1 billion as at October 31, 2020, up \$24.4 billion compared to October 31, 2019. This increase came from net inflows into various solutions and stronger stock market performance in fiscal 2020.

In the individuals category, assets under management amounted to \$48.1 billion as at October 31, 2020 compared to \$43.9 billion as at October 31, 2019. The mutual funds category totalled \$39.4 billion as at October 31, 2020 for a 7% increase year over year.

### Total Revenues by Category

Year ended October 31, 2020

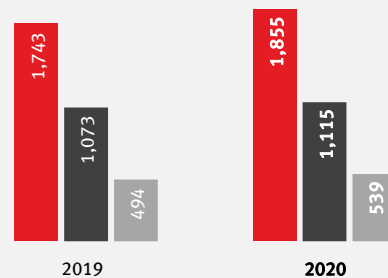


- Net interest income (2019: 26%)
- Fee-based services (2019: 58%)
- Transaction-based and other revenues (2019: 16%)

### Operating Results

Year ended October 31, 2020

(millions of Canadian dollars)



- Total revenues
- Non-interest expenses
- Net income

## Business Segment Analysis | Financial Markets

The Financial Markets segment offers a complete suite of products and services to corporations, institutional clients, and public-sector entities. Whether providing comprehensive advisory services and research or capital markets products and services, its focus is on client relationships and their growth. Over 800 professionals serve client needs through offices in North America, Europe, the U.K. and Asia.

### Business Units

The Financial Markets segment operates two main business units: Global Markets and Corporate and Investment Banking.

#### Global Markets

Financial Markets is a Canadian leader in risk management solutions and structured products and is the largest market-maker in exchange-traded funds (ETFs) in Canada by volume. The segment offers solutions covering fixed income securities, currencies, equities and commodities in order to mitigate the financial and business risks of clients. It also provides new product development expertise to asset managers and fund companies and supports their success by providing liquidity, research, and counterparty services. Financial Markets also provides tailored investment products across all asset classes to institutional and retail distribution channels.

#### Corporate and Investment Banking

Financial Markets provides services in corporate banking, advisory and capital markets. It offers loan origination and syndication to corporations for project financing, merger and acquisition transactions, and corporate financing solutions. The segment is also an investment banking leader in Quebec and across Canada. Its comprehensive services include strategic advisory for financing and mergers and acquisitions as well as for debt and equity underwriting. It is the Canadian leader in government and corporate high-yield debt underwriting. Dominant in Quebec, it is the leader in debt underwriting for provincial and municipal governments across Canada while growing its national position in infrastructure and project financing. Financial Markets is active in securitization financing, mainly Government-of-Canada-insured mortgages and mortgage-backed securities.

### Economic and Market Review

By declaring the closure of non-essential services to combat the pandemic, the government had to take strong measures to support households and businesses. For its part, the central bank had to act quickly to reassure investors and improve financial conditions, which had deteriorated sharply in March 2020. The result was an economic recovery that surprised many when the economy reopened. Although the road travelled since April has been positive, the recovery is far from complete. The upsurge in cases in recent weeks indicates that until an effective vaccine is available to the general population, a return to normalcy is difficult to imagine. The expectation of a vaccine in 2021 is welcome because companies now see a light at the end of the tunnel that could positively influence workforce management and investment plans. In the meantime, the federal government has committed to continue supporting the economy by extending enhanced support for the unemployed at least until March 2021 and the wage subsidy until June 2021. In such a context, conditions are favourable for continued economic recovery in 2021.

The economic environment in 2020 and the outlook for 2021 are discussed in more detail in the Economic Review and Outlook section on page 28.

### Key Success Factors

- Pan-Canadian franchise with established leadership in government debt underwriting, ETF market-making, and securities lending and recognized capabilities in risk management solutions, structured products and equity derivatives.
- Focused on client relationships and diversified client activity and revenue mix.
- Sound risk management.
- Flexible approach to capital allocation and proven ability to adapt to evolving capital market conditions and deliver consistent financial performance.
- Entrepreneurial culture: Integrated approach, teamwork, and alignment among all groups.

## Objectives and Strategies

Strategic Priorities	2020 Achievements and Highlights
<p><b>Maintain leadership in Canadian debt underwriting</b></p>	<p>Ranked first in government debt underwriting, sustaining our first place ranking for the last six years:</p> <ul style="list-style-type: none"> <li>&gt; Lead and joint lead on Canada Mortgage Bond issuances aggregating \$30.5 billion</li> <li>&gt; Joint lead on the Province of Quebec's largest ever USD offering (US\$3.25 billion 5-year offering)</li> <li>&gt; Inaugural joint lead for NBF on a European Investment Bank's \$600 million 4-year offering</li> <li>&gt; Joint lead on the City of Toronto's first ever \$100 million 10-year social bond offering</li> <li>&gt; Inaugural joint lead on OMERS Finance Trust's \$1.25 billion 7-year offering</li> <li>&gt; Inaugural joint lead on PSP Capital's \$750 million 10-year offering</li> <li>&gt; Lead on First Nations Finance Authority's \$240 million 10-year offering</li> </ul> <p>Lead in corporate debt underwriting:</p> <ul style="list-style-type: none"> <li>&gt; Joint bookrunner on a \$700 million hybrid note offering for Inter Pipeline Ltd.</li> <li>&gt; Joint bookrunner on a \$175 million limited recourse capital notes offering and sole advisor on a \$125 million private placement of non-viability contingent capital (NVCC) subordinated debentures for Canadian Western Bank</li> <li>&gt; Joint bookrunner on a cross-border offering of high yield notes for Cascades Inc., raising \$175 million and US\$650 million</li> <li>&gt; Joint bookrunner on a \$200 million inaugural 30-year senior unsecured debenture offering for Liberty Utilities (Canada) LP</li> <li>&gt; Joint bookrunner on a \$250 million inaugural 5-year senior unsecured debenture offering for Summit Industrial Income REIT</li> <li>&gt; Lead advisor to Bombardier on its 3-year \$1.0 billion senior secured term loan facility with HPS Investment Partners, LLC, Apollo Capital Management, LP and Special Opportunities and Direct Lending funds managed by Ares Management LLC</li> </ul>
<p><b>Maintain leadership in investment products</b></p>	<p>Leading Canada in quality and innovation:</p> <ul style="list-style-type: none"> <li>&gt; Awarded SRP's "Best Product Performance in Canada" award for our notes and market-linked GICs. The SRP Awards are based on an analysis of the largest structured product database and winners are selected based on the measurable performance of their products</li> <li>&gt; Launched, in partnership with an independent asset management client, the first 3 mutual funds in Canada dedicated to strategies currently offered via structured notes, raising over \$1 billion over the year</li> <li>&gt; Bookrunner in the biggest closed-end fund initial public offering (IPO) of the past 5 years, raising \$370 million using an innovative structure that introduced a voluntary cash contribution by the manager</li> </ul> <p>Building our international issuance network:</p> <ul style="list-style-type: none"> <li>&gt; Over \$1.5 billion of notes were issued outside of Canada, with an increasingly diversified universe of investors</li> </ul> <p>Strengthening our ETF leadership position by deploying the next generation of trading systems:</p> <ul style="list-style-type: none"> <li>&gt; Deployed the latest trading infrastructure and software to support our market making functions for over 900 ETFs in Canada</li> <li>&gt; Close to 1 in 2 ETFs launched by independent asset managers in Canada in 2020 trusted NBF as the lead market maker for their funds</li> </ul>

Strategic Priorities	2020 Achievements and Highlights
<p>Expand our client coverage to increase our presence in advisory services</p>	<p>Involvement in significant mandates including:</p> <ul style="list-style-type: none"> <li>&gt; Co-financial advisor on Cirque du Soleil Inc.'s (CDS) <i>Companies' Creditors Arrangement Act</i> (CCAA) restructuring process under which a group of its secured creditors acquired the business for a total transaction value of US\$1.6 billion. As part of its mandate, NBF conducted a comprehensive global outreach as part of a court supervised Sale and Investment Solicitation Process. NBF also helped source and negotiate interim financing for CDS to ensure the business could sustain itself from the shutdown of its operations due to the COVID-19 pandemic through to the resolution of the CCAA process</li> <li>&gt; Acted as exclusive financial advisor to SSR Mining Inc. on its \$5.6 billion merger with Alacer Gold Corp.</li> <li>&gt; Acted as financial advisor to Public Sector Pension Investment Board and Alberta Teachers' Retirement Fund Board on their acquisition of Altagas Canada Inc. for a total consideration of \$1.7 billion. Altagas Canada Inc. (renamed TriSummit Utilities Inc.) is a TSX-listed entity owning a diversified portfolio of high-quality regulated natural gas utilities and long-dated contracted renewable power assets</li> </ul>
<p>Leverage leadership in equity distribution to increase lead and co-lead positions</p>	<ul style="list-style-type: none"> <li>&gt; Joint Bookrunner on WSP Global Inc.'s \$502 million bought deal public offering of common shares. This was the fifth consecutive WSP equity financing in which NBF participated, raising aggregate gross proceeds of \$1.7 billion</li> <li>&gt; Joint Bookrunner on Lightspeed POS Inc.'s \$288 million follow-on offering of subordinate voting shares. This was the third consecutive deal for Lightspeed, including its IPO, where the Bank acted as a Joint Bookrunner</li> <li>&gt; Co-lead and joint bookrunner on Boyd Group Services Inc.'s \$231.5 million bought deal equity financing. This was the company's largest equity offering in its history, and we were happy to have lead the execution of such a successful transaction which garnered significant investor demand during the midst of market uncertainty due to COVID-19. We look forward to continuing our longstanding relationship with the company</li> <li>&gt; Sole bookrunner on Boralex Inc.'s \$201 million bought deal of common shares. Net proceeds were used to repay amounts drawn under its revolving credit facility to provide financial flexibility for future working capital and general corporate needs as well as funding its ongoing development pipeline and potential future acquisitions</li> </ul>

## Priorities and Outlook for 2021

- Continue to expand activities in our areas of expertise with a constant focus on Canadian clients and a targeted presence outside Canada.
- Continue to be a strategic partner for our clients.
- Increase market share among corporations for all fee-based products.
- Maintain our leadership in established businesses across Canada: government issuances, structured products from ETF markets and securities lending.
- Continue to automate processes, use artificial intelligence, and increase data-sharing across the Financial Markets segment.
- Maintain tight cost control and an industry-leading efficiency ratio.

## Segment Results – Financial Markets

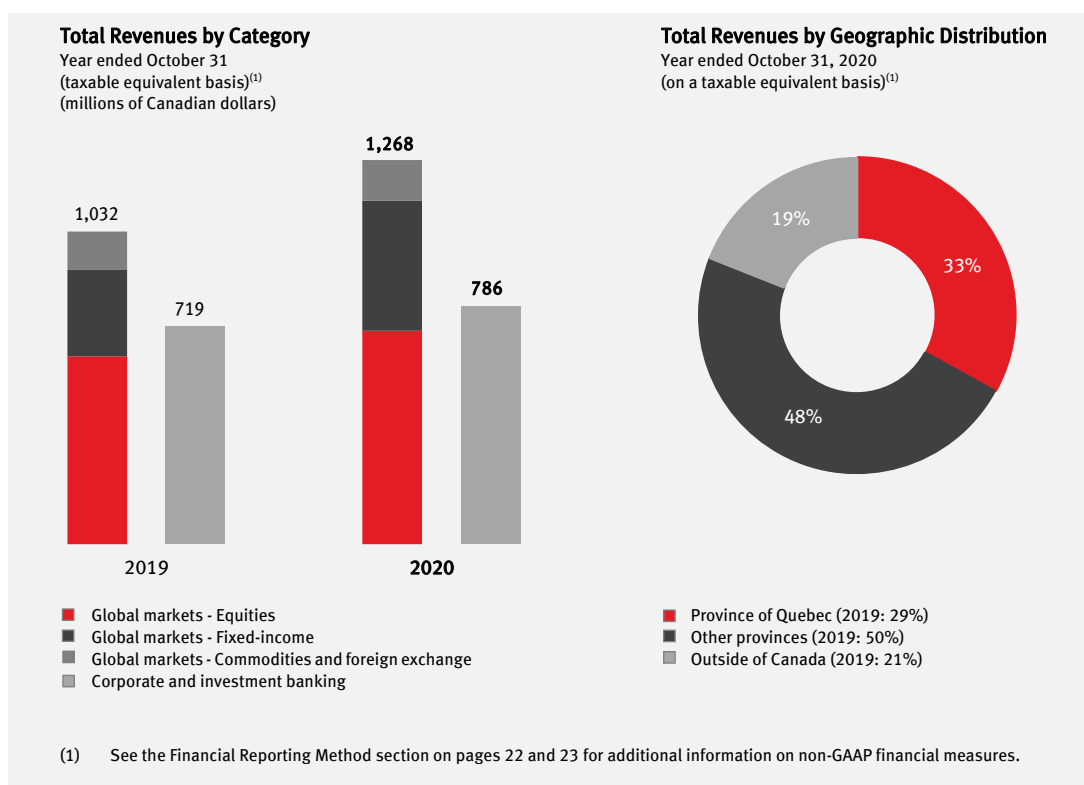
Year ended October 31  
(taxable equivalent basis)<sup>(1)</sup>  
(millions of Canadian dollars)

	2020	2019 <sup>(2)</sup>	% change
<b>Global markets</b>			
Equities	706	621	14
Fixed-income	430	285	51
Commodities and foreign exchange	132	126	5
	<b>1,268</b>	<b>1,032</b>	<b>23</b>
<b>Corporate and investment banking</b>	<b>786</b>	<b>719</b>	<b>9</b>
<b>Total revenues on a taxable equivalent basis</b>	<b>2,054</b>	<b>1,751</b>	<b>17</b>
<b>Non-interest expenses</b>	<b>809</b>	<b>756</b>	<b>7</b>
<b>Income before provisions for credit losses and income taxes on a taxable equivalent basis<sup>(1)</sup></b>	<b>1,245</b>	<b>995</b>	<b>25</b>
<b>Provisions for credit losses</b>	<b>239</b>	<b>30</b>	
<b>Income before income taxes on a taxable equivalent basis</b>	<b>1,006</b>	<b>965</b>	<b>4</b>
<b>Income taxes on a taxable equivalent basis</b>	<b>266</b>	<b>257</b>	<b>4</b>
<b>Net income</b>	<b>740</b>	<b>708</b>	<b>5</b>
<b>Average assets</b>	<b>123,943</b>	<b>112,493</b>	<b>10</b>
<b>Average loans and acceptances (Corporate Banking only)</b>	<b>18,782</b>	<b>16,575</b>	<b>13</b>
<b>Net impaired loans<sup>(3)</sup></b>	<b>21</b>	<b>23</b>	<b>(9)</b>
<b>Average deposits</b>	<b>35,433</b>	<b>30,497</b>	<b>16</b>
<b>Efficiency ratio on a taxable equivalent basis<sup>(1)</sup></b>	<b>39.4 %</b>	<b>43.2 %</b>	

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

(2) For the year ended October 31, 2019, certain amounts have been reclassified.

(3) Net impaired loans are presented net of allowances for credit losses on Stage 3 loan amounts drawn.



## Financial Results

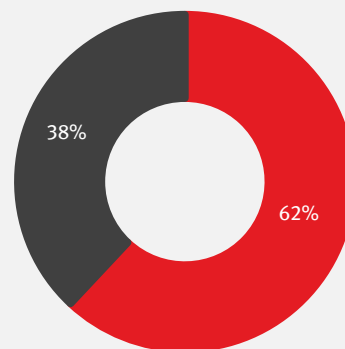
In the Financial Markets segment, net income totalled \$740 million in fiscal 2020, up 5% year over year. The increase in all types of revenues in the segment was partly offset by higher provisions for credit losses during the year as a result of the significant deterioration in the macroeconomic outlook caused by COVID-19 and the expected impacts on the segment's clients. The Financial Markets segment's fiscal 2020 income before provisions for credit losses and income taxes on a taxable equivalent basis<sup>(1)</sup> amounted to \$1,245 million, up \$250 million or 25% year over year, as the segment benefited from an increase in the activities of all its business units. Total revenues on a taxable equivalent basis<sup>(1)</sup> were \$2,054 million, up \$303 million from \$1,751 million in fiscal 2019. Revenues from the Global Markets category posted year-over-year growth of 23%, with revenues from equity securities and from fixed-income securities rising 14% and 51%, respectively, and revenues from commodities and foreign exchange activities up 5%. As for corporate and investment banking revenues, they increased 9% year over year, mainly due to higher revenues from capital markets activity, in particular issuances of government bonds, and revenues from merger and acquisition activities.

For the year ended October 31, 2020, the segment's non-interest expenses rose 7% year over year due to increases in compensation and employee benefits, in transaction fees related to growth in the segment's activities, and in technology investment expenses. The segment's fiscal 2020 efficiency ratio on a taxable equivalent basis<sup>(1)</sup> was 39.4% in fiscal 2020 versus 43.2% in 2019.

Financial Markets recorded \$239 million in provisions for credit losses during fiscal 2020 compared to \$30 million in fiscal 2019, an increase that stems mainly from credit loss provisions on impaired loans recorded in fiscal 2020 in connection with the economic context related to COVID-19. In addition, provisions for credit losses on impaired loans were up \$47 million year over year.

### Total Revenues by Category

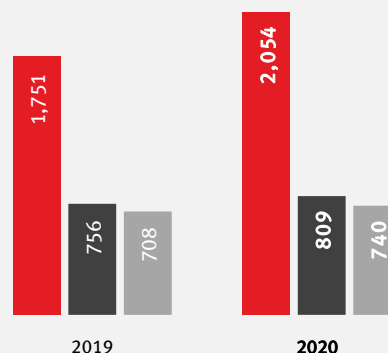
Year ended October 31, 2020  
(taxable equivalent basis)<sup>(1)</sup>



■ Global markets (2019: 59%)  
■ Corporate and investment banking (2019: 41%)

### Operating Results

Year ended October 31  
(taxable equivalent basis)<sup>(1)</sup>  
(millions of Canadian dollars)



■ Total revenues  
■ Non-interest expenses  
■ Net income

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

## Business Segment Analysis | U.S. Specialty Finance and International

The Bank complements its Canadian growth with a targeted, disciplined international strategy that aims for superior returns. The Bank is currently focused on specialty finance in the U.S. through Credigy and on personal and commercial banking in Cambodia through ABA Bank. The Bank also holds minority positions in financial groups operating in French-speaking Africa and Africa-Asia. The Bank has a moratorium in effect on any new significant investments in emerging markets. During fiscal 2020, the U.S. Specialty Finance and International (USSF&I) segment generated 10% of the Bank's consolidated total revenue and 17% of its net income.

### U.S. Specialty Finance – Credigy

Founded in 2001, Credigy is a specialty finance company with flexibility across its capital structure to acquire or finance a diverse range of assets. Based in Atlanta, Georgia, Credigy is primarily active in performing assets covering a broad range of asset classes, mostly secured consumer receivables in the U.S. market. The Bank holds an 80% ownership interest in Credigy.

### Economic and Market Review

As in Canada, the U.S. economic recovery has been surprisingly strong. Retail sales have rebounded at an incredible pace and the real estate market is experiencing an impressive recovery. However, on the epidemiological side, the situation has deteriorated rapidly in recent weeks, as evidenced by the marked increase in new COVID-19 cases. Although political leaders seem more reluctant than Europeans to impose strict social distancing measures, this does not mean that the resurgence of the coronavirus will not have an effect on the economy and the labour market. According to the most recent data on unemployment claims, 21.5 million Americans are still dependent on government assistance. In this context, the strength of the economic recovery will largely depend on decisions made in Washington. But in all likelihood, Republicans will retain control of the Senate, which will jeopardize the chances of a strong recovery plan. In the current partisan climate, the Senate majority could make life difficult for the new president by approving only a modest stimulus package. Despite some shortcomings, the upcoming budgetary envelope should help support household consumption in the first half of 2021. After that, the economy could benefit from the arrival of an effective coronavirus vaccine.

The economic environment in 2020 and the outlook for 2021 are discussed in more detail in the Economic Review and Outlook section on page 28.

### Key Success Factors

- Ability to seize opportunities in rapidly changing market conditions through a disciplined yet adaptable investment strategy.
- Diversification across several classes of performing assets.
- Market credibility achieved through over 320 transactions life-to-date, representing over US\$16 billion in total investments.
- Rigorous pricing approach strengthened by continuous refinement of modelling and analytics capabilities and deep expertise in specific asset classes.
- Proven expertise in the successful management and servicing of consumer assets.
- Resilience to economic downturns achieved through limited exposure to unsecured assets, investments with high credit profiles, and structural enhancements that provide downside protection.

### Objectives and Strategies

Credigy aims to provide customized solutions for the acquisition or financing of assets related to consumer receivables in pursuit of the best risk-adjusted returns and a return on assets (ROA) of at least 2.5%.

Strategic Priorities	2020 Achievements and Highlights
Sustain deal flow by being a partner of choice for bank and non-bank institutions facing complex challenges and strategic changes	<ul style="list-style-type: none"> <li>&gt; Active monitoring of the economy and opportunities.</li> <li>&gt; Transactions with several new partners.</li> <li>&gt; Maintained average assets of approximately \$7 billion.</li> </ul>
Maintain a diversified mix of performing assets	<ul style="list-style-type: none"> <li>&gt; Performing assets accounted for 98% of assets.</li> <li>&gt; Continued to diversify asset classes focusing on both secured and unsecured high-quality consumer assets.</li> </ul>
Achieve best risk-adjusted returns	<ul style="list-style-type: none"> <li>&gt; Credit model monitoring and refinement helped focus on the best risk/reward investments.</li> <li>&gt; Maintained a disciplined approach to ensure a risk-return balance and an ROA of at least 2.5%.</li> </ul>

## Priorities and Outlook for 2021

- Maintain emphasis on asset diversification and a balanced risk/return investment profile.
- Leverage relationships with current and prospective partners.
- Deliver asset growth by focusing on investments with structural enhancements that provide protection against the risks of an economic slowdown.
- Active monitoring of the COVID-19 pandemic to implement risk-minimizing strategies and capitalize on changing market conditions that have potential for new investment opportunities.

## International – ABA Bank

Established in 1996, ABA Bank provides financial services to individuals and businesses in Cambodia. It is the third largest and fastest-growing commercial bank in the country with an ROE of more than 20%. It offers a full spectrum of financial services to micro, small and medium enterprises (MSMEs) as well as to individuals through 77 branches, 633 ATMs and cash deposit machines, and advanced online banking and mobile banking platforms. ABA Bank has been selected as the Best Bank in Cambodia by The Banker (2019), Global Finance (sixth consecutive year) and Euromoney (seventh consecutive year) magazines.

## Economic and Market Review

Despite the low number of COVID-19 cases reported in the country, the pandemic has affected Cambodia's economic growth, most notably in the garment and tourism industries. After a decade of GDP growth approaching 7%, the economy is expected to contract 2% in 2020. The growth trajectory is expected to return in 2021 as exports increase with the global economic recovery and as the border restrictions affecting tourism are lifted. Cambodia will also benefit from increased regional economic integration under the Association of Southeast Asian Nations (ASEAN) trade association. The Cambodian market is highly underbanked, with approximately 18% of the population over 15 years of age having an account in a financial institution. There is a high adoption and use of mobile technology and social media in the country, and over 65% of the population of 16.5 million is under 35 years of age.

## Key Success Factors

- Loan strategy targeting MSMEs with simple products.
- Disciplined risk management driving high credit quality.
- Ability to fund loan growth through the deposit strategy.
- Deposit strategy leveraging state-of-the art technology, leading to an expanding self-sufficient transactional banking ecosystem.
- Experienced leadership team, and skilled workforce supported by robust training programs.
- Governance structure based on high Canadian standards while providing local management with the autonomy to pursue strategic priorities and business objectives.
- Leveraging National Bank's reputation as a world-class financial institution.

## Objectives and Strategies

ABA Bank wishes to pursue an omnichannel banking strategy focused on being the lending partner of choice to MSMEs while increasing market penetration in deposits and transactional services for retail and business clients.

Strategic Priorities	2020 Achievements and Highlights
Grow market share in MSME lending	<ul style="list-style-type: none"> <li>&gt; Achieved 47% growth in loan volumes.</li> <li>&gt; Opened 7 new branches, bringing the total to 77 throughout the country.</li> <li>&gt; Secured its position as third-largest bank in the market by increasing market share.</li> </ul>
Maintaining credit quality	<ul style="list-style-type: none"> <li>&gt; Well-diversified portfolio (98% of loans secured).</li> <li>&gt; At 0.8% of the loan portfolio as at October 31, 2020, non-performing loans are below market average.</li> <li>&gt; Implementation of a payment deferral policy to offer relief to ABA Bank clients affected by the slowdown due to the COVID-19 pandemic.</li> <li>&gt; Standard &amp; Poor's raised its long-term credit rating on ABA Bank from "B" to "B+" with a stable outlook based on its material and growing market share of loans and deposits with above-average profitability.</li> </ul>
Sustain growth in deposits and transactional services	<ul style="list-style-type: none"> <li>&gt; Deposits increased 44% from fiscal 2019.</li> <li>&gt; Continued to enhance to self-banking capabilities, including the first full-scale mobile banking application in Cambodia.</li> <li>&gt; Self-banking transactions made up 94% of total number of transactions and, for the first time in the ABA Bank's history, surpassed 50% of total value of transactions.</li> <li>&gt; Launched ABA 24/7, the network of standalone self-banking locations that provide customers with round-the-clock access to their accounts.</li> </ul>
Retain international recognition of ABA Bank's progress	<ul style="list-style-type: none"> <li>&gt; Global Finance magazine named ABA Bank the "Best Bank in Cambodia" for the sixth consecutive year.</li> <li>&gt; Euromoney magazine named ABA Bank the "Best Bank in Cambodia" for the seventh consecutive year.</li> <li>&gt; The Banker magazine named ABA Bank the "Bank of the Year" in Cambodia for 2019.</li> <li>&gt; Asiamoney magazine (a regional arm of Euromoney) named ABA Bank the "Best Digital Bank in Cambodia" for 2020.</li> </ul>

## Priorities and Outlook for 2021

### Maintain double-digit growth and strong return on equity while staying focused on core target markets

- Open two branches in 2021 to extend its reach in Cambodia and gain direct access to a larger pool of MSME customers and retail deposits.
- Increase the deposit base by providing convenience to retail customers through an advanced digital and self-banking infrastructure and an expanding network of self-service spots.
- Focus on loan growth with MSME clients in industries that are minimally affected by the current economic downturn.

### Ensure a solid foundation for sustainable long-term growth

- Maintain strong governance, disciplined risk management and sound business processes.
- Ensure strong credit quality across the loan portfolio to maintain non-performing loan levels below market averages.
- Continue to target fully collateralized loans to limit potential losses.

## Segment Results – USSF&I

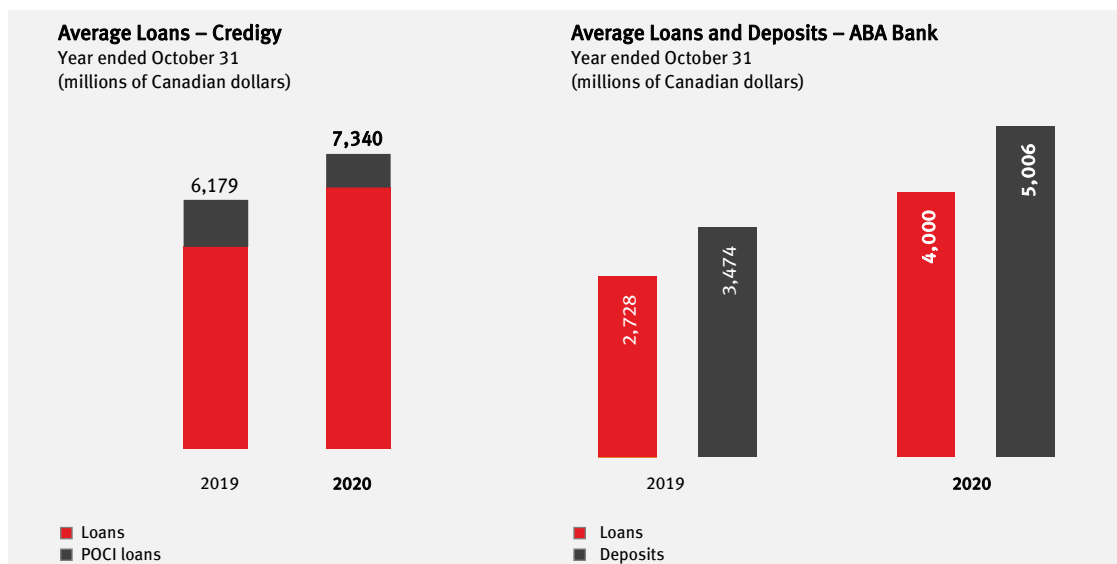
Year ended October 31

(millions of Canadian dollars)

	2020	2019	% change
<b>Total revenues</b>			
Credigy	406	402	1
ABA Bank	410	303	35
International	4	10	
	820	715	15
<b>Non-interest expenses</b>			
Credigy	144	152	(5)
ABA Bank	171	131	31
International	4	2	
	319	285	12
Income before provisions for credit losses and income taxes <sup>(1)</sup>	501	430	17
<b>Provisions for credit losses</b>			
Credigy	59	68	(13)
ABA Bank	21	12	75
	80	80	–
Income before income taxes	421	350	20
Income taxes	69	71	(3)
<b>Net income</b>	352	279	26
Non-controlling interests	34	40	(15)
Net income attributable to the Bank's shareholders and holders of other equity instruments	318	239	33
Average assets	14,336	10,985	31
Average loans and receivables	11,340	8,907	27
Net impaired loans – Stage 3 <sup>(2)</sup>	30	15	100
Purchased or originated credit-impaired (POCI) loans	855	1,166	(27)
Average deposits	5,006	3,474	44
Efficiency ratio	38.9 %	39.9 %	

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

(2) Net impaired loans – Stage 3 exclude POCI loans and are presented net of allowances for credit losses on Stage 3 loan amounts drawn.



## Financial Results

In the USSF&I segment, net income totalled \$352 million in fiscal 2020, up 26% from \$279 million in fiscal 2019. The segment's fiscal 2020 total revenues amounted to \$820 million versus \$715 million in fiscal 2019, representing growth of 15% that came mainly from a \$107 million increase in the revenues of the ABA Bank subsidiary owing to sustained growth in loan and deposit volumes. At the Credigy subsidiary, revenues were up \$4 million. Total revenues from international investments were lower in fiscal 2020 than in fiscal 2019.

The segment's non-interest expenses stood at \$319 million in fiscal 2020, up \$34 million from \$285 million in fiscal 2019, essentially attributable to all of ABA Bank's non-interest expenses related to its growing banking network. At the Credigy subsidiary, non-interest expenses were down year over year, in particular due to a decrease in collection costs.

In fiscal 2020, the segment recorded \$80 million in provisions for credit losses, unchanged from fiscal 2019.

### Credigy

Credigy's net income for fiscal 2020, presented in the USSF&I segment, totalled \$160 million, up 11% from fiscal 2019. The subsidiary's total revenues amounted to \$406 million compared to \$402 million in fiscal 2019. The increase in net interest income due to loan portfolio growth was offset by the decrease in non-interest income arising from changes in the loan portfolio mix and the impacts of the COVID-19 pandemic on the fair value of some of the subsidiary's loan portfolios. Credigy's fiscal 2019 non-interest expenses for the year ended October 31, 2020 were down \$8 million, mainly due to a decrease in collection costs. The subsidiary's provisions for credit losses for fiscal 2020 totalled \$59 million, down \$9 million year over year. Provisions for credit losses on non-impaired loans increased as a result of the significant deterioration in the macroeconomic outlook caused by the COVID-19 pandemic and the expected impacts on the subsidiary's loan portfolios, but this increase was more than offset by a decline in provisions for credit losses on impaired loans following repayments and maturities of certain loan portfolios and revaluations of certain POCI loan portfolios.

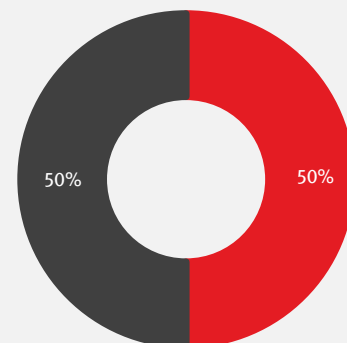
### ABA Bank

For fiscal 2020, ABA Bank net income totalled \$192 million, up 50% from fiscal 2019. Growth in the subsidiary's activities produced a 35% increase in its total revenues and the 31% increase in non-interest expense. However, the increase in total revenues derived from sustained growth in loan and deposit volumes was partially offset by lower interest rates. The subsidiary's provisions for credit losses totalled \$21 million for fiscal 2020, up \$9 million year over year, due to provisions for credit losses on non-impaired loans recorded in fiscal 2020 to account for the expected impacts of the COVID-19 pandemic on the subsidiary's clients.

The effective tax rate declined in fiscal 2020 due to tax incentives provided by the Cambodian government and recorded in the second quarter of 2020.

### Total Revenues by Category

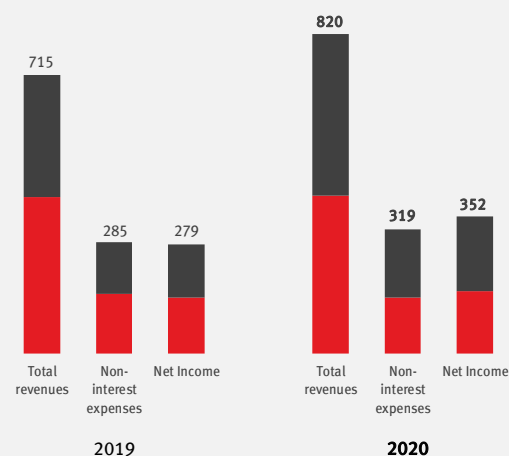
Year ended October 31, 2020



■ Credigy (2019: 56%)  
 ■ ABA Bank (2019: 43%)  
 ■ International (2019: 1%)

### Operating Results

Year ended October 31  
 (millions of Canadian dollars)



■ Credigy  
 ■ ABA Bank and International

## Business Segment Analysis | Other

The *Other* heading reports on Treasury operations, liquidity management, Bank funding, asset and liability management, certain specified items, and the unallocated portion of corporate units. Corporate units include Information Technology, Risk Management, Employee Experience, Operations, and Finance. These units provide advice and guidance throughout the Bank and to its business segments in addition to expertise and support in their respective fields.

### Segment Results – Other

Year ended October 31

(taxable equivalent basis)<sup>(1)</sup>

(millions of Canadian dollars)

	2020	2019 <sup>(2)</sup>
Net interest income on a taxable equivalent basis	(177)	(178)
Non-interest income on a taxable equivalent basis	177	280
Total revenues on a taxable equivalent basis	–	102
Non-interest expenses	453	350
Income before provisions for credit losses and income taxes on a taxable equivalent basis <sup>(1)</sup>	(453)	(248)
Provisions for credit losses	3	–
Income before income taxes on a taxable equivalent basis	(456)	(248)
Income taxes (recovery) on a taxable equivalent basis	(101)	(78)
<b>Net loss</b>	<b>(355)</b>	<b>(170)</b>
Non-controlling interests	8	26
Net loss attributable to the Bank's shareholders and holders of other equity instruments	<b>(363)</b>	<b>(196)</b>
Specified items after income taxes <sup>(1)</sup>	<b>(133)</b>	<b>(6)</b>
<b>Net loss excluding specified items<sup>(1)</sup></b>	<b>(222)</b>	<b>(164)</b>
Specified items after income taxes and non-controlling interests <sup>(1)</sup>	<b>(123)</b>	<b>(6)</b>
Net loss attributable to the Bank's shareholders and holders of other equity instruments excluding specified items <sup>(1)</sup>	<b>(240)</b>	<b>(190)</b>
Average assets	<b>56,665</b>	<b>43,667</b>

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

(2) For the year ended October 31, 2019, certain amounts have been reclassified.

### Financial Results

For the *Other* heading of segment results, there was a net loss of \$355 million in fiscal 2020 compared to a net loss of \$170 million in fiscal 2019. This change was essentially due to approximately \$50 million in expenses related to measures deployed by the Bank to protect the health and safety of employees and clients in the exceptional circumstances stemming from the COVID-19 pandemic, to increased technology investments related to the Bank's transformation plan and business development, as well as to the specified items recorded in fiscal 2020 that had a \$133 million unfavourable impact on the net income recorded in the *Other* heading. Revenues from treasury activities were higher in fiscal 2020 compared to the previous year, partly due to market volatility in fiscal 2020.

The specified items net of income taxes recorded in fiscal 2020 include a \$36 million foreign currency translation loss on disposal of Credigy subsidiaries in Brazil, \$52 million in impairment losses on premises and equipment and on intangible assets, \$35 million in severance pay, and a \$10 million charge related to Maple. The specified items net of income taxes recorded in fiscal 2019 included a \$68 million gain on disposal of Fiera Capital shares, a \$43 million gain on disposal of premises and equipment, a \$27 million loss arising from the fair value remeasurement of the Bank's investment in NSIA, \$42 million in impairment losses on premises and equipment and on intangible assets, \$7 million in severance pay, an \$8 million charge related to Maple, and \$33 million in provisions for onerous contracts. The net loss excluding specified items<sup>(1)</sup> for fiscal 2020 was \$222 million, compared to a \$164 million net loss recorded for fiscal 2019.

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

## Quarterly Financial Information

Several trends and factors have an impact on the Bank's quarterly net income, revenues, non-interest expenses and provisions for credit losses. The following table presents a summary of results for the past eight quarters.

### Quarterly Results Summary<sup>(1)</sup>

(millions of Canadian dollars)	2020				2019			
	Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
<b>Statement of income data</b>								
Net interest income	1,124	1,096	1,105	930	936	855	942	863
Non-interest income	876	872	931	993	979	1,093	828	936
Total revenues	2,000	1,968	2,036	1,923	1,915	1,948	1,770	1,799
Non-interest expenses	1,259	1,074	1,121	1,091	1,095	1,154	1,026	1,026
Income before provisions for credit losses and income taxes <sup>(2)</sup>	741	894	915	832	820	794	744	773
Provisions for credit losses	110	143	504	89	89	86	84	88
Income taxes	139	149	32	133	127	100	102	133
<b>Net income</b>	<b>492</b>	<b>602</b>	<b>379</b>	<b>610</b>	<b>604</b>	<b>608</b>	<b>558</b>	<b>552</b>

(1) For additional information about the 2020 fourth quarter results, visit the Bank's website at [nbc.ca](http://nbc.ca) or the SEDAR website at [sedar.com](http://sedar.com) to consult the Bank's *Press Release for the Fourth Quarter of 2020*, published on December 2, 2020. The following table presents a summary of results for the past eight quarters. Furthermore, a summary of results for the past 12 quarters is provided in Table 1 on pages 114 and 115.

(2) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

The above analysis of the past eight quarters reflects the sustained performance of all the business segments and helps readers identify the items that have favourably or unfavourably affected results. Net income for all the quarters of 2020, except the first quarter, was lower year over year. The growth in the business segments' net income was offset by higher non-interest expenses and the significant increase in provisions for credit losses related to the deterioration in the macroeconomic outlook caused by the COVID-19 pandemic. Net income for the first quarter of fiscal 2020 rose year over year in particular due to the Financial Markets segment. The year-over-year decline in the fourth quarter of 2020 was essentially due to the Bank recording a foreign currency translation loss on disposals of subsidiaries, impairment losses on premises and equipment and intangible assets, and severance pay, all of which had an unfavourable impact on net income.

Net interest income posted year-over-year growth in every quarter of fiscal 2020. These increases were mainly driven by growth in personal and commercial loan and deposit volumes, activities related to trading income in the Financial Markets segment, loan portfolio growth at the Credigy subsidiary, and growth in net interest income at the ABA Bank subsidiary, related to sustained business growth. The Wealth Management segment posted year-over-year declines in net interest income in the third and fourth quarters of fiscal 2020 due to narrower margins on deposits caused by lower interest rates.

The non-interest income for the first and second quarters of 2020 was up year over year, as results in the same quarters of fiscal 2019 were affected by a slowdown in business at the Financial Markets segment. The lower non-interest income in the third and fourth quarters of fiscal 2020 was generated in part by card revenues and revenues from deposit and payment service charges as a result of the temporary closing of businesses and non-essential services and the lockdowns imposed by governments related to the pandemic, which led to a drop in the number of transactions. Furthermore, non-interest income for the third quarter of fiscal 2019 included a gain on disposal of Fiera Capital shares, a gain on disposal of premises and equipment, and a loss arising from the remeasurement at fair value of the Bank's investment in NSIA.

The non-interest expense for every quarter of 2020, except the third quarter, was up year over year. Explaining these increases were compensation and employee benefits, technology investment expenses made as part of the Bank's transformation plan and for business development activities, and expenses related to the measures taken by the Bank to protect the health and guarantee the safety of employees and clients given the exceptional circumstances related to COVID-19, recorded in the second quarter of fiscal 2020. In addition, non-interest expenses for the fourth quarter of 2020 include impairment losses on premises and equipment and on intangible assets and severance pay, similar to the expenses recorded in the third quarter of fiscal 2019.

Provisions for credit losses were up on a year-over-year basis in each quarter of fiscal 2020. The sizeable increase in provisions for credit losses in the second quarter was due to the significant deterioration in the macroeconomic outlook caused by the COVID-19 pandemic, and the expected impacts of the pandemic on the Bank's clients. In addition, the increase stemmed from a sharp rise in provisions for credit losses on impaired loans, essentially due to Commercial Banking and the Financial Markets segment.

The change in the effective income tax rate between the 2020 and 2019 quarters was mainly due to the tax impact of the disposal of the subsidiaries in Brazil, as well as the realization of capital gains that were taxed at a lower rate in fiscal 2019. In addition, the lower effective tax rate in the second quarter of 2020 was attributable to a drop in the tax rate of the ABA Bank subsidiary due to fiscal incentives granted by the government of Cambodia.

# Analysis of the Consolidated Balance Sheet

## Consolidated Balance Sheet Summary

As at October 31

(millions of Canadian dollars)

	2020	2019	% change
<b>Assets</b>			
Cash and deposits with financial institutions	29,142	13,698	113
Securities	102,131	82,226	24
Securities purchased under reverse repurchase agreements and securities borrowed	14,512	17,723	(18)
Loans and acceptances, net of allowances	164,740	153,251	7
Other	21,100	14,560	45
	<b>331,625</b>	<b>281,458</b>	<b>18</b>
<b>Liabilities and equity</b>			
Deposits	215,878	189,566	14
Other	98,589	75,983	30
Subordinated debt	775	773	–
Equity attributable to the Bank's shareholders and holders of other equity instruments	16,380	14,778	11
Non-controlling interests	3	358	(99)
	<b>331,625</b>	<b>281,458</b>	<b>18</b>

As at October 31, 2020, the Bank's total assets amounted to \$331.6 billion compared to \$281.5 billion at year-end 2019, a \$50.1 billion or 18% increase.

### Cash and Deposits With Financial Institutions

At \$29.1 billion as at October 31, 2020, cash and deposits with financial institutions rose \$15.4 billion since the same date last year, mainly due to increased deposits with the Bank of Canada. This increase stems partly from the liquidity obtained as part of financing initiatives implemented by the Canadian government through the Bank of Canada, the objective of which is to support the Canadian financial system during the COVID-19 pandemic. The Bank's liquidity and funding risk management practices are described on pages 93 to 101 of this MD&A.

### Securities

Since October 31, 2019, securities rose \$19.9 billion due to a \$16.5 billion or 27% increase in securities at fair value through profit or loss, particularly securities issued or guaranteed by Treasury, other U.S. agencies and other foreign governments, and equity securities, and due to a \$3.4 billion increase in securities other than those measured at fair value through profit or loss. Securities purchased under reverse repurchase agreements and securities borrowed decreased by \$3.2 billion mainly related to activities in the Financial Markets segment and Treasury. The Bank's market risk management policies are described on pages 86 to 92 of this MD&A.

### Loans and Acceptances

Totalling \$164.7 billion as at October 31, 2020, and representing 50% of total asset, loans and acceptances, net of allowances, rose \$11.4 billion or 7% since October 31, 2019.

Residential mortgage loans outstanding totalled \$65.0 billion as at October 31, 2020, rising \$7.8 billion or 14% since October 31, 2019. This growth was driven by sustained demand for mortgage credit, residential mortgage portfolio acquisition as well as by business growth at the ABA Bank subsidiary. Personal loans totalled \$37.6 billion at year-end 2020, rising \$0.7 billion from \$36.9 billion at year-end 2019 due mainly to the business growth in Personal Banking, tempered somewhat by repayments and maturities in certain loan portfolios of the Credigy subsidiary. As for credit card receivables, they totalled \$2.0 billion, down from \$0.3 billion as at October 31, 2019, due to a slowdown in activities related to COVID-19.

At \$61.3 billion as at October 31, 2020, loans and acceptances to businesses and government increased \$3.8 billion or 7% since October 31, 2019 owing to growth in corporate financial services activities and to growth at the Credigy subsidiary.

Table 9 (page 121) shows gross loans and acceptances by borrower category as at October 31, 2020. At \$81.5 billion, residential mortgages (including home equity lines of credit) have posted strong growth since 2016 and account for 49% of total loans and acceptances as at October 31, 2020. This growth in residential mortgages was driven by sustained demand for mortgage credit, the acquisition of mortgage portfolios, as well as by growth in business activity at the ABA Bank subsidiary. As for retail loans, they totalled \$15.2 billion as at October 31, 2020. With respect to commercial loans, there was year-over-year growth in the oil and gas and pipelines category, utilities category, and real estate and real estate construction category. As at October 31, 2020, certain categories posted year-over-year decreases, notably manufacturing and communications. Furthermore, the Credigy subsidiary's POCL loans were down from October 31, 2019 as a result of repayments and maturities of certain loan portfolios.

### **Impaired Loans**

Impaired loans include loans classified in Stage 3 of the expected credit loss model and the purchased or originated credit-impaired (POCI) loans of the Credigy subsidiary.

As at October 31, 2020, gross impaired loans excluding POCI loans stood at \$817 million compared to \$684 million as at October 31, 2019 (Table 10, page 121). Net impaired loans excluding POCI loans totalled \$465 million as at October 31, 2020 compared to \$450 million as at October 31, 2019, a \$15 million increase related to net impaired loans of the personal loan portfolios and the ABA Bank subsidiary, tempered somewhat by a decrease in the net impaired loans of the commercial loan portfolio. Gross POCI loans stood at \$855 million as at October 31, 2020, down from \$1,166 million as at October 31, 2019 as a result of maturities and repayments of certain portfolios.

A detailed description of the Bank's credit risk management practices is provided on pages 77 to 85 of this MD&A as well as in Note 7 to the consolidated financial statements.

### **Other Assets**

As at October 31, 2020, other assets totalled \$21.1 billion compared to \$14.6 billion as at October 31, 2019, a \$6.5 billion increase arising mainly from an increase in derivative financial instruments related to the activities of the Financial Markets segment.

### **Deposit Liability**

At \$215.9 billion as at October 31, 2020, deposits increased by \$26.3 billion or 14% since year-end 2019. This increase is partly attributable to support measures granted to clients by the Bank and government authorities in response to the economic and financial context caused by the COVID-19 pandemic. At \$67.5 billion, personal deposits, as presented in Table 12 (page 122), increased \$7.4 billion since October 31, 2019 and accounted for 31% of all deposits. This increase stems from Personal Banking activities, the Wealth Management segment's brokerage accounts, and business growth at the ABA Bank subsidiary.

As shown in Table 12, business and government deposits totalled \$143.8 billion, up \$18.5 billion from \$125.3 billion at year-end 2019. This increase came from the funding activities of the Financial Markets segment and of Treasury, including \$4.9 billion in deposits subject to bank recapitalization (Bail-In) conversion regulations, from the Wealth Management segment's brokerage activities, as well as from Commercial Banking's activities. Deposits from deposit-taking institutions were up \$0.4 billion from the same date last year.

### **Other Liabilities**

As at October 31, 2020, other liabilities stood at \$98.6 billion, up \$22.6 billion since October 31, 2019, essentially due to a \$3.6 billion increase in obligations related to securities sold short, a \$12.0 billion increase in obligations related to securities sold under repurchase agreements and securities loaned, and a \$6.0 billion increase in derivative financial instruments.

### **Subordinated Debt and Other Contractual Obligations**

Subordinated debt has remained relatively stable since October 31, 2019. The contractual obligations are presented in detail in Note 29 to the consolidated financial statements.

### **Equity**

As at October 31, 2020, the Bank's equity totalled \$16.4 billion compared to \$15.1 billion as at October 31, 2019. Equity attributable to the Bank's shareholders and holders of other equity instruments was \$16.4 billion, rising \$1.6 billion from \$14.8 billion since October 31, 2019. This increase came from net income net of dividends, by issuances of LRCN – Series 1 in the amount of \$500 million, and by remeasurements of pension plans and other post-employment benefit plans. These increases were partly offset by accumulated other comprehensive income, in particular losses on cash flow hedges. Lastly, non-controlling interests were down \$355 million, essentially due to the redemption of trust units issued by NBC Asset Trust (NBC CapS – II) – Series 2, for gross proceeds of \$350 million.

The Consolidated Statements of Changes in Equity on page 131 of this Annual Report present the items of equity. In addition, an analysis of the Bank's regulatory capital is presented in the Capital Management section of this MD&A.

## Exposures to Certain Activities

The Financial Stability Board (FSB) formed a working group, the Enhanced Disclosure Task Force (EDTF), that was mandated to develop principles for enhancing the risk disclosures of major banks. The EDTF published a report containing 32 recommendations. The risk disclosures required by the EDTF are provided in this Annual Report and in the documents entitled *Supplementary Regulatory Capital and Pillar 3 Disclosure* and *Supplementary Financial Information*, which are available on the Bank's website at [nbc.ca](http://nbc.ca). In addition, on page 13 of this Annual Report is a table of contents that readers can use to locate information relative to the 32 recommendations.

The FSB recommendations seek to enhance the transparency and measurement of certain exposures, in particular structured entities, subprime and Alt-A exposures, collateralized debt obligations, residential and commercial mortgage-backed securities, and leveraged financing structures. The Bank does not market any specific mortgage financing program to subprime or Alt-A clients. The Bank does not have any significant direct position in residential and commercial mortgage-backed securities that are not insured by the CMHC. Credit derivative positions are presented in the *Supplementary Regulatory Capital and Pillar 3 Disclosure* report, which is available on the Bank's website at [nbc.ca](http://nbc.ca).

Leveraged finance is commonly employed to achieve a specific objective, for example, to make an acquisition, complete a buy-out or repurchase shares. Leveraged finance risk exposure takes the form of both funded and unfunded commitments. As at October 31, 2020, total commitments for this type of loan stood at \$3,681 million (\$3,559 million as at October 31, 2019). Details about other exposures are provided in the table concerning structured entities in Note 27 to the consolidated financial statements.

## Related Party Transactions

In the normal course of business, the Bank provides various banking services and enters into contractual agreements and other transactions with associates, joint ventures, directors, key officers and other related parties. These agreements and transactions are entered into under conditions similar to those offered to non-related third parties.

In accordance with the *Bank Act* (Canada), the aggregate of loans granted to key officers of the Bank, excluding mortgage loans granted on their principal residence, cannot exceed twice the officer's annual salary.

Loans to eligible key officers are granted under the same conditions as those granted to any other employee of the Bank. The main conditions are as follows:

- the employee must meet the same credit requirements as a client;
- mortgage loans are offered at the preferential employee rate;
- home equity lines of credit bear interest at Canadian prime less 0.5%, but never lower than Canadian prime divided by two;
- personal loans bear interest at a risk-based regular client rate;
- credit card advances bear interest at a prescribed fixed rate in accordance with Bank policy;
- personal lines of credit bear interest at Canadian prime less 0.5%, but never lower than Canadian prime divided by two.

The Bank also offers a deferred stock unit plan to directors who are not Bank employees. For additional information, see Note 22 to the consolidated financial statements. Additional information on related parties is presented in Notes 9, 27 and 28 to the consolidated financial statements.

## Income Taxes

In April 2020, the Bank was reassessed by the Canada Revenue Agency (CRA) for additional income tax and interest of approximately \$240 million (including estimated provincial tax and interest) in respect of certain Canadian dividends received by the Bank during 2015.

In prior fiscal years, the Bank was reassessed for additional income tax and interest of approximately \$370 million (including provincial tax and interest) in respect of certain Canadian dividends received by the Bank during the 2014, 2013 and 2012 taxation years.

The transactions to which the above-mentioned reassessments relate are similar to those prospectively addressed by income tax legislation enacted as a result of the 2015 and 2018 Canadian federal budgets.

The CRA may issue reassessments to the Bank for taxation years subsequent to 2015 in regard to activities similar to those that were the subject of the above-mentioned reassessments. The Bank remains confident that its tax position was appropriate and intends to vigorously defend its position. As a result, no amount has been recognized in the consolidated financial statements as at October 31, 2020.

## Event After the Consolidated Balance Sheet

### Acquisition

In the first quarter of fiscal 2021, the Bank will acquire the remaining non-controlling interest in the Credigy Ltd. subsidiary following the decision of the non-controlling shareholders to exercise their put options for an amount of approximately US\$235 million according to an agreement reached in 2013. Subsequent to this transaction, Credigy Ltd. will become a wholly owned subsidiary of the Bank.

## Securitization and Off-Balance-Sheet Arrangements

In the normal course of business, the Bank is party to various financial arrangements that, under IFRS, are not required to be recorded on the Consolidated Balance Sheet or are recorded under amounts other than their notional or contractual values. These arrangements include, among others, transactions with structured entities, derivative financial instruments, the issuance of guarantees, credit instruments, and financial assets received as collateral.

### Structured Entities

The Bank uses structured entities, among other means, to diversify its funding sources and to offer services to clients, in particular to help them securitize their financial assets or provide them with investment opportunities. Under IFRS, a structured entity must be consolidated if the Bank controls the entity. Note 1 to the consolidated financial statements describes the accounting policy and criteria used for consolidating structured entities. Additional information on consolidated and non-consolidated structured entities is provided in Note 27 to the consolidated financial statements.

#### Securitization of the Bank's Financial Assets

##### Mortgage Loans

The Bank participates in two Canada Mortgage and Housing Corporation (CMHC) securitization programs: the Mortgage-Backed Securities Program under the *National Housing Act* (Canada) (NHA) and the Canada Mortgage Bond (CMB) Program. Under the first program, the Bank issues NHA securities backed by insured residential mortgage loans and, under the second, the Bank sells NHA securities to Canada Housing Trust (CHT), which finances the purchase through the issuance of mortgage bonds insured by CMHC. Moreover, these mortgage bonds feature an interest rate swap agreement under which a CMHC-certified counterparty pays CHT the interest due to investors and receives the interest on the NHA securities. As at October 31, 2020, the outstanding amount of NHA securities issued by the Bank and sold to CHT was \$20.7 billion. The mortgage loans sold consist of fixed- or variable-rate residential loans that are insured against potential losses by a loan insurer. In accordance with the NHA-MBS Program, the Bank advances the funds required to cover late payments and, if necessary, obtains reimbursement from the insurer that insured the loan. The NHA-MBS and CMB programs do not use liquidity guarantee arrangements. The Bank uses these securitization programs mainly to diversify its funding sources. In accordance with IFRS, because the Bank retains substantially all of the risks and rewards of ownership of the mortgage loans transferred to CHT, the derecognition criteria are not met. Therefore, the insured mortgage loans securitized under the CMB Program continue to be recognized in *Loans* on the Bank's Consolidated Balance Sheet, and the liabilities for the considerations received from the transfer are recognized in *Liabilities related to transferred receivables* on the Consolidated Balance Sheet. For additional information, see Note 8 to the consolidated financial statements.

##### Credit Card Receivables

In April 2015, the Bank set up Canadian Credit Card Trust II (CCCT II) to continue its program of securitizing credit card receivables on a revolving basis. The Bank uses this entity for capital management and funding purposes. The Bank acts as the servicer of the receivables sold and maintains the client relationship. Furthermore, it administers the securitization program and ensures that all related procedures are stringently followed and that investors are paid according to the provisions of the program.

As at October 31, 2020, the credit card receivables portfolio held by CCCT II (net of the Bank Certificate held by the Bank) represented an amount outstanding of \$1.1 billion. CCCT II issued investors' certificates, \$0.1 billion of which is held by third parties and \$1.0 billion is held by the Bank. New receivables are periodically sold to the structure on a revolving basis to replace the receivables reimbursed by clients.

The different series of certificates are rated by the Fitch and DBRS rating agencies. From this portfolio of sold receivables, the Bank retains the excess spread, i.e., the residual net interest income after all the expenses related to this structure have been paid, and thus provides first-loss protection. Furthermore, second-loss protection for issued series is provided by certificates subordinated to the senior notes, representing 5.8% of the total amount of the series issued. The Bank controls CCCT II and thus consolidates it.

#### Securitization of Third-Party Financial Assets

The Bank administers multi-seller conduits that purchase financial assets from clients and finance those purchases by issuing commercial paper backed by the acquired assets. Clients use these multi-seller conduits to diversify their funding sources and reduce borrowing costs while continuing to service the financial assets and providing some amount of first-loss protection. Notes issued by the conduits and held by third parties provide additional credit loss protection. The Bank acts as a financial agent and provides administrative and transaction structuring services to these conduits. The Bank provides backstop liquidity and credit enhancement facilities under the commercial paper program. These facilities are presented and described in Notes 26 and 27 to the consolidated financial statements. The Bank has concluded derivative financial instrument contracts with these conduits, the fair value of which is presented on the Bank's Consolidated Balance Sheet. The Bank is not required to consolidate these conduits, as it does not control them.

## Derivative Financial Instruments

The Bank uses various types of derivative financial instruments to meet its clients' needs, generate trading activity revenues and manage its exposure to interest rate, foreign exchange and credit risk as well as other market risks. All derivative financial instruments are accounted for at fair value on the Consolidated Balance Sheet. Transactions in derivative financial instruments are expressed as notional amounts. These amounts are not presented as assets or liabilities on the Consolidated Balance Sheet. They represent the face amount of the contract to which a rate or price is applied to determine the amount of cash flows to be exchanged. Notes 1 and 16 to the consolidated financial statements provide additional information on the types of derivative financial instruments used by the Bank and their accounting basis.

## Guarantees

In the normal course of business, the Bank enters into various guarantee contracts. The principal types of guarantees are letters of guarantee, backstop liquidity and credit enhancement facilities, certain securities lending activities, and certain indemnification agreements. Note 26 to the consolidated financial statements provides detailed information on these guarantees.

## Credit Instruments

In the normal course of business, the Bank enters into various off-balance-sheet credit commitments. The credit instruments used to meet the financing needs of its clients represent the maximum amount of additional credit that the Bank could be required to extend if the commitments were fully drawn. For additional information on these off-balance-sheet credit instruments and other items, see Note 26 to the consolidated financial statements.

## Financial Assets Received as Collateral

In the normal course of business, the Bank receives financial assets as collateral as a result of transactions involving securities purchased under reverse repurchase agreements, securities borrowing and lending agreements, and derivative financial instrument transactions. For additional information regarding financial assets received as collateral, see Note 26 to the consolidated financial statements.

## Capital Management

Capital management has a dual role of ensuring a competitive return to the Bank's shareholders while maintaining a solid capital foundation that covers risks inherent to the Bank's business, supports its business segments, and protects its clients.

### Capital Management Framework

The Bank's capital management policy defines guiding principles as well as the roles and responsibilities of its internal capital adequacy assessment process. This process aims to determine the capital that the Bank needs to pursue its business activities and accommodate unexpected losses arising from extremely adverse economic and operational conditions. The Bank has implemented a rigorous internal capital adequacy assessment process that comprises the following procedures:

- conducting an overall risk assessment;
- measuring significant risks and the capital requirements related to the Bank's financial budget for the next fiscal year and current and prospective risk profiles;
- integrating stress tests across the organization and executing sensitivity analyses to determine the capital buffer above minimum regulatory levels (for additional information on enterprise-wide stress testing, see the Risk Management section of this MD&A);
- aggregating capital and monitoring the reasonableness of internal capital compared with regulatory capital;
- comparing projected internal capital with regulatory capital levels, internal operating targets, and competing banks;
- attesting to the adequacy of the Bank's capital levels.

Assessing capital adequacy is an integral part of capital planning and strategy. The Bank sets internal capital ratio targets that include a discretionary cushion in excess of the regulatory requirements, which provides a solid financial structure and sufficient capital to meet management's business needs in accordance with its risk appetite, along with competitive returns to shareholders, under both normal market conditions and a range of severe but plausible stress testing scenarios. The internal capital adequacy assessment process is a key tool in establishing the Bank's capital strategy and is subject to quarterly reviews and periodic amendments.

Risk-adjusted return on capital (RAROC) and shareholder value added (SVA), which are obtained from an assessment of required economic capital, are calculated quarterly for each of the Bank's business segments. The results are then used to guide management in allocating capital among the various business segments.

#### Structure and Governance

Along with its partners from Risk Management, Global Funding and Treasury Group, and Finance, the Capital Management team is responsible for maintaining integrated control methods and processes so that an overall assessment of capital adequacy may be performed.

The Board oversees the structure and development of the Bank's capital management policy and ensures that the Bank maintains sufficient capital in accordance with regulatory requirements and in consideration of market conditions. The Board delegates certain responsibilities to the Risk Management Committee (RMC), which in turn recommends capital management policies and oversees their application. However, the Board, on the recommendation of the RMC, assumes the following responsibilities:

- reviewing and approving the capital management policy;
- reviewing and approving the Bank's risk appetite, including the main capital and risk targets and the corresponding limits;
- reviewing and approving the capital plan and strategy on an annual basis, including the Bank's internal capital adequacy assessment process;
- reviewing and approving the implementation of significant measures respecting capital, including contingency measures;
- reviewing significant capital disclosures, including Basel capital adequacy ratios;
- ensuring the appropriateness of the regulatory capital adequacy assessment.

The Office of the President is responsible for defining the Bank's strategy and plays a key role in guiding measures and decisions regarding capital. The Enterprise-Wide Risk Management Committee oversees capital management, which consists of reviewing the capital plan and strategy and implementing significant measures respecting capital, including contingency measures, and making recommendations with respect to these measures.

## Basel Accord and Regulatory Environment

### Basel Accord

The Basel Accord proposes a range of approaches of varying complexity, the choice of which determines the sensitivity of capital to risks. A less complex approach, such as the Standardized Approach, uses regulatory weightings, while a more complex approach uses the Bank's internal estimates of risk components to establish risk-weighted assets and calculate regulatory capital.

As required under Basel, risk-weighted assets (RWA) are calculated for each credit risk, market risk, and operational risk. The Bank uses the Advanced Internal Rating-Based (AIRB) Approach for credit risk to determine minimum regulatory capital requirements for a majority of its portfolios. The credit risk of certain portfolios considered to be less significant is weighted according to the Basel Standardized Approach. The simple risk-weighted method is used to calculate the charge related to banking book equity securities. This method requires proactive management of the capital allocated to portfolios with banking book equity securities since, beyond a certain investment threshold, the cost of regulatory capital becomes prohibitive. As for operational risk, the Bank uses the Standardized Approach. Market risk-weighted assets are primarily determined using the Internal Model-Based Approach, while the Standardized Approach is used to assess interest-rate specific risk.

With respect to the risk related to securitization operations, the capital treatment depends on the type of underlying exposures and on the information available about the exposures. The Bank must use the Securitization Internal Rating-Based Approach (SEC-IRBA) if it is able to apply an approved internal ratings-based model and has sufficient information to calculate the capital requirements for all underlying exposures in the securitization pool. Under this approach, the RWA is derived from a combination of supervisory inputs and inputs specific to the securitization exposure, such as the implicit capital charge related to the underlying exposures, the credit enhancement level, the effective maturity, the number of exposures, and the weighted average loss given default (LGD).

If the Bank cannot use the SEC-IRBA, it must use the Securitization External Rating-Based Approach (SEC-ERBA) for the securitization exposures that are externally rated. This approach assigns risk weights to exposures using external ratings. The Bank uses the ratings assigned by Moody's, Standard & Poor's (S&P), Fitch, DBRS or a combination of these ratings. The Bank uses the Internal Assessment Approach (IAA) for unrated securitization exposures relating to the asset-backed commercial paper conduits it sponsors. If the Bank cannot apply the SEC-ERBA or the IAA, it must use the supervisory formula under the Securitization Standardized Approach (SEC-SA). Under this approach, RWA is derived from inputs specific to the securitization exposure, such as the implicit capital charge related to the underlying exposures calculated under the standardized credit risk approach as well as credit enhancement and delinquency levels.

If none of the above approaches can be used, the securitization exposure must be assigned a risk weight of 1,250%. The Bank can apply a reduced capital charge for securitization exposures that meet the criteria of the Simple, Transparent and Comparable (STC) framework. The revised securitization framework was in effect since November 1, 2018, and OSFI permitted grandfathering treatment that ended on November 1, 2019. OSFI also provided transitional arrangements for all securitization transactions completed by December 31, 2018 for a maximum of two years.

Capital ratios are calculated by dividing capital by risk-weighted assets. Credit, market, and operational risks are factored into the risk-weighted assets calculation for regulatory purposes. Basel rules apply at the consolidated level of the Bank. Assets of non-consolidated entities for regulatory purposes are therefore excluded from the risk-weighted assets calculation.

The definition adopted by the Basel Committee on Banking Supervision (BCBS) distinguishes between three types of capital. Common Equity Tier 1 (CET1) capital consists of common shareholders' equity less goodwill, intangible assets, and other capital deductions. The Additional Tier 1 capital consists of eligible non-cumulative preferred shares, limited recourse capital notes and the eligible amount of innovative instruments. During the year ended October 31, 2020, the Bank redeemed all of its outstanding innovative instruments. The sum of CET1 and Additional Tier 1 capital forms what is known as Tier 1 capital. Tier 2 capital consists of eligible subordinated debt and certain allowances for credit losses. Total regulatory capital is the sum of Tier 1 and Tier 2 capital.

OSFI is responsible for applying the Basel Accord in Canada. As required under the Basel Accord, OSFI requires that regulatory capital instruments other than common equity have a non-viability contingent capital (NVCC) clause to ensure that investors bear losses before taxpayers should the government determine that it is in the public interest to rescue a non-viable financial institution. Instruments issued before January 1, 2013 that would be Basel III compliant if it were not for the absence of the NVCC clause are grandfathered and will be phased out over a period of ten years. The Bank expects to phase out all of its non-NVCC instruments without resorting to any regulatory event redemption. Furthermore, in the regulations of the *Canadian Deposit Insurance Corporation (CDIC) Act* and the *Bank Act* (Canada), the Government of Canada has provided detailed information on conversion, issuance, and compensation regimes for bail-in instruments issued by D-SIBs. Pursuant to the *CDIC Act*, in circumstances where OSFI has determined that the Bank has ceased, or is about to cease, to be viable, the Governor in Council may, upon a Minister of Finance recommendation indicating that he or she believes that it is in the public interest to do so, grant an order directing CDIC to convert all or a portion of certain shares and liabilities of the Bank into common shares of the Bank (a "Bail-In Conversion"). The Bail-In Regulations governing the conversion and issuance of bail-in instruments came into force on September 23, 2018, and those governing compensation for holders of converted instruments came into force on March 27, 2018. Any shares and liabilities issued before the date that the Bail-In Regulations come into force are not subject to a Bail-In Conversion, unless, in the case of a liability, the terms of such liability are, on or after that day, amended to increase its principal amount or to extend its term to maturity, and the liability, as amended, meets the requirements to be subject to a Bail-In Conversion.

The Bail-In Regulations prescribe the types of shares and liabilities that are subject to a Bail-In Conversion. In general, any senior debt securities with an initial or amended term-to-maturity greater than 400 days that are unsecured or partially secured and have been assigned a Committee on Uniform Securities Identification Procedures (CUSIP), International Securities Identification Number (ISIN), or similar identification number are subject to a Bail-In Conversion. Shares, other than common shares, and subordinated debt, that are not NVCC instruments, are also subject to a Bail-In Conversion. However, certain other debt obligations of the Bank such as structured notes (as defined in the Bail-In Regulations), covered bonds, deposits and certain derivative financial instruments are not subject to a Bail-In Conversion.

As at October 31, 2020, the notional value of issued and outstanding long-term debt subject to the bank Bail-In conversion regulations was \$8.4 billion.

During the second quarter of 2020, OSFI adjusted regulatory ratio requirements in response to the impact of the COVID-19 pandemic. For additional information, see the section entitled COVID-19 Pandemic – Key Measures Introduced by the Regulatory Authorities on pages 20 and 21 of this MD&A. The Bank and all other major Canadian banks have to maintain minimum capital ratios established by OSFI: a CET1 capital ratio of at least 9.0%, a Tier 1 capital ratio of at least 10.5%, and a Total capital ratio of at least 12.5%. All of these ratios are to include a capital conservation buffer of 2.5% established by the BCBS and OSFI as well as a 1.0% surcharge applicable solely to D-SIBs and a 1.0% domestic stability buffer established by OSFI. The domestic stability buffer, which can vary from 0% to 2.5% of risk-weighted assets, consists exclusively of CET1 capital. A D-SIB that fails to meet this buffer requirement will not be subject to automatic constraints to reduce capital distributions but will have to provide a remediation plan to OSFI. The banks also have to meet the capital floor that sets the regulatory capital level according to the Basel II standardized approach. If the capital requirement under Basel III is less than 70% of the capital requirement as calculated under Basel II, the difference is added to risk-weighted assets. OSFI requires Canadian banks to meet a Basel III leverage ratio of at least 3.0%. The leverage ratio is a measure independent of risk that is calculated by dividing the amount of Tier 1 capital by total exposure. Total exposure is defined as the sum of on-balance-sheet assets (including derivative financial instruments exposures and securities financing transaction exposures) and off-balance-sheet items. The assets deducted from Tier 1 capital are also deducted from total exposure.

OSFI's Total Loss Absorbing Capacity (TLAC) guideline, which applies to all D-SIBs under the federal government's Bail-In Regulations, came into effect on September 23, 2018. The purpose of the TLAC guideline is to ensure that a D-SIB has sufficient loss-absorbing capacity to support its recapitalization in the unlikely event it becomes non-viable. OSFI is requiring D-SIBs to maintain a minimum risk-based TLAC ratio of 22.50% (including the domestic stability buffer) of risk-weighted assets and a minimum TLAC leverage ratio of 6.75% by November 1, 2021. During the fiscal year ended October 31, 2019, the Bank started to issue qualifying bail-in debt and expects its TLAC ratios to improve through the normal refinancing of its maturing unsecured term debt. The Bank does not anticipate any challenges in meeting these TLAC requirements.

## Requirements – Regulatory Ratios Under Basel III

	As at October 31, 2020						
	Minimum	Capital conservation buffer	Minimum set by BCBS	D-SIB surcharge	Minimum set by OSFI <sup>(1)</sup>	Domestic stability buffer <sup>(2)</sup>	Minimum set by OSFI <sup>(1)</sup> , including the buffer
<b>Capital ratios</b>							
CET1	4.5 %	2.5 %	7.0 %	1.0 %	8.0 %	1.0 %	9.0 %
Tier 1	6.0 %	2.5 %	8.5 %	1.0 %	9.5 %	1.0 %	10.5 %
Total	8.0 %	2.5 %	10.5 %	1.0 %	11.5 %	1.0 %	12.5 %
<b>Leverage ratio</b>	3.0 %	n.a.	n.a.	n.a.	3.0 %	n.a.	3.0 %

n.a. Not applicable

(1) The capital ratios include the capital conservation buffer and the D-SIB surcharge.

(2) On December 10, 2019, OSFI raised the buffer to 2.25%, starting April 30, 2020. On March 13, 2020, OSFI lowered the buffer to 1% in response to the impact of the COVID-19 pandemic.

The Bank ensures that its capital levels are always above the minimum capital requirements set by OSFI, including the buffer. By maintaining a strong capital structure, the Bank can cover the risks inherent to its business activities, support its business segments, and protect its clients.

Other disclosure requirements pursuant to Pillar 3 of the Basel Accord and a set of recommendations defined by the EDTF are presented in the *Supplementary Regulatory Capital and Pillar 3 Disclosure* report published quarterly and available on the Bank's website at [nbc.ca](http://nbc.ca). Furthermore, a complete list of capital instruments and their main features is also available on the Bank's website.

### Regulatory Context

The Bank closely monitors regulatory developments and participates actively in various consultative processes. During the second quarter of 2020, in response to the impact of the COVID-19 pandemic, OSFI announced a series of regulatory adjustments to support the financial and operational resilience of banks. For additional information, see the section entitled COVID-19 Pandemic – Key Measures Introduced by the Regulatory Authorities on pages 20 and 21 of this MD&A. Presented below are brief descriptions of ongoing regulatory projects.

#### Basel III Reform

In December 2017, the Group of Central Bank Governors and Heads of Supervision (GHOS), which oversees the BCBS, endorsed the outstanding Basel III post-crisis regulatory reforms. The purpose of the approved reforms, set out in *Basel III: Finalising Post-Crisis Reforms*, is to reduce excessive variability in risk-weighted assets and improve comparability and transparency among bank capital ratios. The reforms cover the following: revisions to the standardized approaches for calculating credit risk and operational risk; a constraint on using the internal ratings-based approach for calculating credit risk; and revisions to the leverage ratio, the CVA, and the calculation of the output capital floor.

In February 2018, the BCBS issued *Pillar 3 Disclosure Requirements – Updated Framework*, a consultative document that presents the additional disclosure requirements that will apply when the outstanding Basel III regulatory reforms take effect. These requirements will form a single Pillar 3 disclosure framework.

In January 2019, the BCBS issued a newly revised version of the document entitled *Revisions to the Minimum Capital Requirements for Market Risk* (initially issued in March 2018).

On November 14, 2019, the BCBS issued a consultative document entitled *Revisions to Market Risk Disclosure Requirements*. This document sets out adjustments to the Pillar 3 templates for the revised market risk framework, i.e., adjustments made to reflect the changes made to the final version of *Revisions to the Minimum Capital Requirements for Market Risk* published in January 2019.

On November 28, 2019, the BCBS issued a consultative document entitled *Credit Valuation Adjustment Risk: Targeted Final Revisions*. This document proposes a set of targeted adjustments to the credit valuation adjustment (CVA) risk framework issued in December 2017. The adjustments are designed to align the revised CVA risk framework with the standards set out in Minimum Capital Requirements for Market Risk and in Capital Requirements for Bank Exposures to Central Counterparties. On July 8, 2020, the BCBS issued the final version of the document entitled *Targeted Revisions to the Credit Valuation Adjustment Risk Framework*. This document reflects feedback received from the consultation in December 2019.

In response to the impact of the COVID-19 pandemic, the GHOS announced a postponement to the implementation of the reforms of the Basel III capital international standard. OSFI has therefore postponed, until the first quarter of 2023, the implementation of the Standardized Approach and AIRB Approach to credit risk, the revision of the operational risk framework, and of the leverage ratio framework, as well as the introduction of a more risk-sensitive capital floor. Implementation of the Pillar 3 financial disclosure requirements finalized by the BCBS in December 2018 has also been delayed until at least the first quarter of 2023. Lastly, implementation of the final set of revisions to the new market risk framework, entitled "Fundamental Review of the Trading Book" and published in January 2019, as well as the revised CVA risk framework are being delayed to the first quarter of 2024.

### Other Projects

On November 14, 2019, the BCBS issued *Voluntary Disclosure of Sovereign Exposures*, a consultative document seeking views on the potential disclosure of three new templates. The document would require banks to disclose their sovereign exposures and risk-weighted assets according to jurisdiction, currency, and accounting classification. Implementation is mandatory for banks only when so required by the national authority in its territory.

On August 6, 2020, the BCBS issued two consultative documents: *Principles for Operational Risk* and *Revisions to the Principles for the Sound Management of Operational Risk*. In the first document, the BCBS is seeking views on a series of principles in helping improve the banks' operational resilience. These principles aim to strengthen the ability of banks to withstand operational risk related events which could cause significant operational failures or wide-scale disruptions in financial markets, such as pandemics, cyber incidents, technology failures or natural disasters. In the second document, the BCBS is proposing a limited number of updates to their existing set of principles for the sound management of operational risk.

## Capital Management in 2020

### **Management Activities**

On June 10, 2019, the Bank began a normal course issuer bid to repurchase for cancellation up to 6,000,000 common shares over the 12-month period ending no later than June 9, 2020. During the year ended October 31, 2019, the Bank had repurchased 2,200,000 common shares under this program. During the year ended October 31, 2020, the Bank repurchased 525,000 common shares for \$30 million, which reduced Common share capital by \$5 million and *Retained earnings* by \$25 million. These repurchases were carried out before March 13, 2020, which was the date on which OSFI lowered the domestic stability buffer and indicated that it was expecting all banks to cease any dividend increases or share buybacks.

On June 30, 2020, NBC Asset Trust (the Trust), a closed-end trust established by the Bank, redeemed all of the outstanding 350,000 Trust units (NBC CapS II -Series 2) at a per-unit price of \$1,000 for gross proceeds of \$350 million. On July 17, 2020, the Trust was dissolved.

On September 9, 2020, the Bank issued \$500 million of Limited Recourse Capital Notes Series 1 (LRCN – Series 1) for which noteholders' recourse is limited to the assets held by an independent trustee in a consolidated limited recourse trust. The assets of this trust consist of \$500 million of Series 44 first preferred shares issued by the Bank, in parallel with the LRCN – Series 1. The LRCN – Series 1 sell for \$1,000 each and bear interest at a fixed rate of 4.3% per annum until November 15, 2025 exclusively and, thereafter, at an annual rate equal to the yield on five-year Government of Canada bonds plus 3.943% until November 15, 2075. Since the LRCN – Series 1 satisfy the non-viability contingent capital requirements, they qualify for the purposes of calculating regulatory capital under Basel III.

As at October 31, 2020, the Bank had 335,997,660 issued and outstanding common shares compared to 334,172,411 one year earlier. The Bank also had 98,000,000 issued and outstanding preferred shares, unchanged from October 31, 2019. Moreover, as at October 31, 2020, it had 500,000 LRCN – Series 1 that it did not have one year earlier. For additional information on capital instruments, see Notes 15, 18 and 19 to the consolidated financial statements.

### **Dividends**

The Bank's strategy for common share dividends is to aim for a dividend payout ratio of between 40% and 50% of net income attributable to common shareholders excluding specified items, taking into account such factors as financial position, cash needs, regulatory requirements and any other factor deemed relevant by the Board.

For fiscal 2020, the Bank declared \$953 million in dividends to common shareholders, which represents 50% of net income attributable to common shareholders (2019: 42%). The declared dividends are within the target payout range. The Bank has taken a prudent approach to managing regulatory capital and remains confident in its ability to increase earnings going forward.

## Shares, Other Capital Instruments and Stock Options

	As at October 31, 2020	
	Number of shares or capital notes	\$ million
First preferred shares		
Series 30	14,000,000	350
Series 32	12,000,000	300
Series 34	16,000,000	400
Series 36	16,000,000	400
Series 38	16,000,000	400
Series 40	12,000,000	300
Series 42	12,000,000	300
	<b>98,000,000</b>	<b>2,450</b>
Other equity instruments		
Limited Recourse Capital Notes, Series 1	500,000	500
Common shares	<b>335,997,660</b>	<b>3,057</b>
Stock options	<b>11,425,403</b>	

As at November 27, 2020, there were 336,017,698 common shares and 11,375,920 stock options outstanding. NVCC provisions require the conversion of capital instruments into a variable number of common shares should OSFI deem a bank to be non-viable or should the government publicly announce that a bank has accepted or agreed to accept an injection of capital. If an NVCC trigger event were to occur, all of the Bank's preferred shares and other equity instruments and medium-term notes maturing on February 1, 2028, which are NVCC capital instruments, would be converted into common shares of the Bank according to an automatic conversion formula at a conversion price corresponding to the greater of the following amounts: (i) a \$5.00 contractual floor price; or (ii) the market price of the Bank's common shares on the date of the trigger event (10-day weighted average price). Based on a \$5.00 floor price and including an estimate for accrued dividends and interest, these NVCC capital instruments would be converted into a maximum of 823 million Bank common shares, which would have a 71.0% dilutive effect based on the number of Bank common shares outstanding as at October 31, 2020.

### Regulatory Capital Ratios

As at October 31, 2020, the Bank's CET1, Tier 1, and Total capital ratios were, respectively, 11.8%, 14.9% and 16.0%, i.e., above the regulatory requirements, compared to ratios of, respectively, 11.7%, 15.0% and 16.1% as at October 31, 2019. The increase in the CET1 capital ratio since October 31, 2019 was essentially due to net income net of dividends, transitional measures applicable to ECL provisioning, common share issuances under the Stock Option Plan, and remeasurements of pension plans and other post-employment benefit plans. The growth in risk-weighted assets, the expiry of transitional arrangements for specific wrong-way risk and for the revised securitization framework as well as the adoption of IFRS 16 contributed to offset this increase. The decreases in the Tier 1 capital ratio and the Total capital ratio were essentially due to growth in risk-weighted assets as well as to a redemption of trust units issued by NBC Asset Trust; however, the decrease was partly offset by the issuance of LRCN – Series 1. As at October 31, 2020, the leverage ratio was 4.4% compared to 4.0% as at October 31, 2019. The increase in the leverage ratio is explained by the growth in Tier 1 capital, due to the same factors as described above, and by modest growth in total exposure, mainly from temporary measures announced by OSFI with respect to the exclusion of exposures from central bank reserves and sovereign-issued securities that qualify as HQLA securities under the *Liquidity Adequacy Requirements* guideline.

### Regulatory Capital and Ratios Under Basel III

As at October 31	2020		2019
	Adjusted <sup>(1)</sup>		
<b>Capital</b>			
CET1	10,924	11,167	9,692
Tier 1	13,869	14,112	12,492
Total	15,167	15,167	13,366
<b>Risk-weighted assets</b>	<b>94,808</b>	<b>94,808</b>	83,039
<b>Total exposure</b>	<b>321,038</b>	<b>321,038</b>	308,902
<b>Capital ratios</b>			
CET1	11.5 %	11.8 %	11.7 %
Tier 1	14.6 %	14.9 %	15.0 %
Total	16.0 %	16.0 %	16.1 %
<b>Leverage ratio</b>	<b>4.3 %</b>	<b>4.4 %</b>	4.0 %

(1) The Basel III regulatory capital and ratios adjusted as at October 31, 2020 do not include the transitional measure applicable to expected credit loss provisioning. For additional information, see the section entitled COVID-19 Pandemic – Key Measures Introduced by the Regulatory Authorities on pages 20 and 21 of the MD&A.

## Movement in Regulatory Capital

Year ended October 31

(millions of Canadian dollars)

	2020	2019
<b>Common Equity Tier 1 (CET1) capital</b>		
Balance at beginning	9,692	8,608
Issuance of common shares (including Stock Option Plan)	98	107
Impact of shares purchased or sold for trading	2	45
Repurchase of common shares	(30)	(281)
Other contributed surplus	9	9
Dividends on preferred and common shares and distributions on other equity instruments	(1,072)	(1,008)
Net income attributable to the Bank's shareholders and holders of other equity instruments	2,041	2,256
Common share capital issued by subsidiaries and held by third parties	–	(13)
Removal of own credit spread net of income taxes	35	(8)
Impact of adopting IFRS 15 on November 1, 2018	–	(4)
Other	188	(163)
Movements in accumulated other comprehensive income		
Translation adjustments	53	(6)
Debt securities at fair value through other comprehensive income	87	1
Other	3	3
Change in goodwill and intangible assets (net of related tax liability)	(70)	134
Other, including regulatory adjustments and transitional arrangements		
Change in defined benefit pension plan asset (net of related tax liability)	(71)	3
Change in amount exceeding 15% threshold		
Deferred tax assets	–	–
Significant investment in common shares of financial institutions	–	–
Deferred tax assets, unless they result from temporary differences (net of related tax liability)	(41)	–
Other deductions of regulatory adjustments to CET1 implemented by OSFI <sup>(1)</sup>	243	–
Change in other regulatory adjustments <sup>(2)</sup>	–	9
<b>Balance at end</b>	<b>11,167</b>	<b>9,692</b>
<b>Additional Tier 1 capital</b>		
Balance at beginning	2,800	2,802
New Tier 1 eligible capital issuances	500	–
Redeemed capital	(350)	–
Change in non-qualifying Additional Tier 1 capital subject to phase-out	–	–
Other, including regulatory adjustments and transitional arrangements	(5)	(2)
<b>Balance at end</b>	<b>2,945</b>	<b>2,800</b>
<b>Total Tier 1 capital</b>	<b>14,112</b>	<b>12,492</b>
<b>Tier 2 capital</b>		
Balance at beginning	874	942
New Tier 2 eligible capital issuances	–	–
Redeemed capital	–	–
Change in non-qualifying Tier 2 subject to phase-out	–	–
Tier 2 instruments issued by subsidiaries and held by third parties	–	(4)
Change in certain allowances for credit losses	128	10
Other, including regulatory adjustments and transitional arrangements	53	(74)
<b>Balance at end</b>	<b>1,055</b>	<b>874</b>
<b>Total regulatory capital</b>	<b>15,167</b>	<b>13,366</b>

(1) This item includes the transitional measure applicable to expected credit loss provisioning implemented during the second quarter of 2020. For additional information, see the section entitled COVID-19 Pandemic – Key Measures Introduced by the Regulatory Authorities on pages 20 and 21 of this MD&A.

(2) This item includes the change in investments in the Bank's CET1 capital.

### RWA by Key Risk Drivers

Risk-weighted assets increased by \$11.8 billion and amounted to \$94.8 billion as at October 31, 2020 compared to \$83.0 billion as at October 31, 2019, an increase resulting mainly from organic growth in RWA, from clients' rating migration, from foreign exchange movements, and from changes to the calculation method resulting from regulatory changes. For credit risk, these changes include the expiry of transitional arrangements for specific wrong-way risk and for the revised securitization framework as well as the adoption of IFRS 16. For market risk, transitional measures were implemented to respond to the volatility caused by the COVID-19 pandemic. The following table presents the changes in the Bank's risk-weighted assets by risk type.

### Risk-Weighted Assets Movement by Key Drivers

Quarter ended (millions of Canadian dollars)	October 31, 2020	July 31, 2020	April 30, 2020	January 31, 2020	October 31, 2019
	Total	Total	Total	Total	Total
<b>Credit risk – Risk-weighted assets at beginning</b>	<b>77,944</b>	<b>76,657</b>	<b>70,145</b>	<b>67,254</b>	65,693
Book size	812	1,943	5,324	1,650	1,979
Book quality	801	157	50	(77)	11
Model updates	(447)	–	112	(17)	(46)
Methodology and policy	–	–	–	1,246	(362)
Acquisitions and disposals	–	–	–	–	–
Foreign exchange movements	(125)	(813)	1,026	89	(21)
<b>Credit risk – Risk-weighted assets at end</b>	<b>78,985</b>	<b>77,944</b>	<b>76,657</b>	<b>70,145</b>	67,254
<b>Market risk – Risk-weighted assets at beginning</b>	<b>4,724</b>	<b>4,121</b>	<b>4,397</b>	<b>4,276</b>	3,972
Movement in risk levels <sup>(1)</sup>	(1,227)	385	1,441	121	304
Model updates	–	218	–	–	–
Methodology and policy	–	–	(1,717)	–	–
Acquisitions and disposals	–	–	–	–	–
<b>Market risk – Risk-weighted assets at end</b>	<b>3,497</b>	<b>4,724</b>	<b>4,121</b>	<b>4,397</b>	4,276
<b>Operational risk – Risk-weighted assets at beginning</b>	<b>12,146</b>	<b>11,977</b>	<b>11,664</b>	<b>11,509</b>	11,319
Movement in risk levels	180	169	313	155	190
Acquisitions and disposals	–	–	–	–	–
<b>Operational risk – Risk-weighted assets at end</b>	<b>12,326</b>	<b>12,146</b>	<b>11,977</b>	<b>11,664</b>	11,509
<b>Risk-weighted assets at end</b>	<b>94,808</b>	<b>94,814</b>	<b>92,755</b>	<b>86,206</b>	83,039

(1) Also includes foreign exchange rate movements that are not considered material.

The table above provides the risk-weighted assets movements by key drivers underlying the different risk categories.

The *Book size* item reflects organic changes in book size and composition (including new loans and maturing loans). RWA movements attributable to book size include increases or decreases in exposures, measured by exposure at default, assuming a stable risk profile.

The *Book quality* item is the Bank's best estimate of changes in book quality related to experience, such as underlying customer behaviour or demographics, including changes resulting from model recalibrations or realignments and also including risk mitigation factors.

The *Model updates* item is used to reflect implementations of new models, changes in model scope, and any other change applied to address model malfunctions. During the quarter ended July 31, 2020, the Bank changed its SVaR period to encompass the COVID-19 crisis. During the quarter ended October 31, 2020, the Bank updated one of its AIRB models: the SME-retail model.

The *Methodology and policy* item presents the impact of changes in calculation methods resulting from changes in regulatory policies as a result, for example, of new regulations. During the quarter ended January 31, 2020, the transitional arrangements for specific wrong-way risk and for the revised securitization framework expired. On November 1, 2019, the Bank also adopted IFRS 16 and recognized right-of-use assets. During the quarter ended April 30, 2020, OSFI introduced provisional measures for market risk in response to the volatility caused by the COVID-19 pandemic. These measures are still in effect.

### Allocation of Economic Capital and Regulatory RWA

Economic capital is an internal measure that the Bank uses to determine the capital it needs to remain solvent and to pursue its business operations. Economic capital takes into consideration the credit, market, operational, business and other risks to which the Bank is exposed as well as the risk diversification effect among them and among the business segments. Economic capital thus helps the Bank to determine the capital required to protect itself against such risks and ensure its long-term viability. The by-segment allocation of economic capital and regulatory RWA was carried out on a stand-alone basis before attribution of goodwill and intangible assets. The method used to assess economic capital is reviewed regularly in order to accurately quantify these risks.

The Risk Management section of this MD&A provides comprehensive information about the main types of risk. The "Other risks" presented below include risks such as business risk and structural interest rate risk in addition to the benefit of diversification among types of risk.

### Allocation of Risks by Business Segment

As at October 31, 2020

(millions of Canadian dollars)

<b>NATIONAL BANK OF CANADA</b>					
<b>Business segments</b>	<b>Personal and Commercial</b>	<b>Wealth Management</b>	<b>Financial Markets</b>	<b>U.S. Specialty Finance and International</b>	<b>Other</b>
<b>Major activities</b>	Banking services Credit services Financing Investment solutions Insurance	Full-service brokerage Private banking Direct brokerage Investment solutions Administrative and trade execution services Transaction products for advisors Trust and estate services	Equities, Fixed-income, commodities and foreign exchange Corporate banking Investment banking	U.S. Specialty Finance • Credigy International • ABA Bank (Cambodia) • Minority interests in emerging markets	Treasury activities Liquidity management Bank funding Asset and liability management Corporate units
<b>Economic capital by type of risk</b>	Credit 1,772 Market – Operational 394 Other risks 184 <b>Total 2,350</b>	Credit 110 Market – Operational 249 Other risks 405 <b>Total 764</b>	Credit 2,398 Market 322 Operational 333 Other risks 472 <b>Total 3,525</b>	Credit 859 Market 37 Operational 95 Other risks 47 <b>Total 1,038</b>	Credit 281 Market (50) Operational (75) Other risks 5 <b>Total 161</b>
<b>Risk-weighted assets</b>	Credit 33,782 Market – Operational 4,863 <b>Total 38,645</b>	Credit 1,795 Market – Operational 3,091 <b>Total 4,886</b>	Credit 27,310 Market 3,364 Operational 4,111 <b>Total 34,785</b>	Credit 10,426 Market – Operational 1,190 <b>Total 11,616</b>	Credit 5,672 Market 133 Operational (929) <b>Total 4,876</b>

## Risk Management

**In this section of the MD&A, grey-shaded text and tables marked with an asterisk (\*) are integral parts of the consolidated financial statements. They represent the Bank's objectives, the risk management policies and procedures, and the methods applied to measure credit risk, market risk as well as liquidity and funding risk, as required by IFRS 7 – *Financial Instruments: Disclosures*.**

Risk-taking is intrinsic to a financial institution's business. The Bank views risk as an integral part of its development and the diversification of its activities. It advocates a risk management approach consistent with its business strategy. The Bank voluntarily exposes itself to certain risk categories, particularly credit and market risk, in order to generate revenue. It assumes certain risks that are inherent to its activities—to which it does not choose to expose itself—and that do not generate revenue, i.e., mainly operational risks. The purpose of sound and effective risk management is to provide reasonable assurance that incurred risks do not exceed acceptable thresholds, to control the volatility in the Bank's results, and to ensure that risk-taking contributes to the creation of shareholder value.

### Risk Management Framework

Risk is rigorously managed. Risks are identified, measured and controlled to achieve an appropriate balance between the returns obtained and the risks assumed. The COVID-19 pandemic has affected general economic conditions as well as capital market conditions in Canada, the United States, and other countries where the Bank conducts business. COVID-19 has also put certain top and emerging risks into perspective. Despite this exceptional situation, risks are being rigorously managed. Consequently, decision-making is supported by risk assessments and management processes that are consistent with the Bank's risk appetite and by prudent levels of capital and liquidity. Despite the exercise of stringent risk management and the mitigation measures in place, risk cannot be suppressed entirely, and residual risks may occasionally cause significant losses.

The Bank has developed guidelines that support sound and effective risk management:

- risk is everyone's business: business units, risk management and oversight functions as well as Internal Audit play an important role in ensuring a risk management framework is in place;
- client-centric: having quality information is key to understanding clients, effectively managing risk, and delivering excellent client service;
- enterprise-wide: an integrated view of risk is the basis for sound and effective risk management and decision-making by management;
- human capital: the Bank's employees are engaged, experienced and have a high level of expertise; their curiosity supports continuous development and their rigour ensures that risk management is built into the corporate culture;
- fact-based: good risk management relies heavily on common sense and good judgment and on advanced systems and models.

#### Risk Appetite

Risk appetite represents how much risk an organization is willing to assume to achieve its business strategy. The Bank defines its risk appetite by setting tolerance thresholds, by aligning those thresholds with its business strategy, and by integrating risk management throughout its corporate culture. Risk appetite is built into decision-making processes as well as into strategic, financial and capital planning.

The Bank's risk appetite framework consists of principles, statements, metrics as well as targets and is reinforced by policies and limits. When setting its risk appetite targets, the Bank considers regulatory constraints and the expectations of stakeholders, in particular customers, employees, the community, shareholders, regulatory agencies, governments, and rating agencies.

The risk appetite framework is defined by the following principles and statements:

The Bank's brand, reputation and long-term viability are at the centre of our decisions, which demand:

- a strong credit rating to be maintained;
- a strong capital and cash position;
- rigorous management of regulatory compliance risk, including sales practices;
- zero tolerance for negligence in information security.

The Bank understands the risks taken; they are aligned with our business strategy and translate into:

- a risk-reward balance;
- a stable risk profile;
- a strategic level of concentration aligned with approved targets.

The Bank's transformation and simplification plan is being carried out without compromising rigorous risk management, which is reflected in:

- a low tolerance to operational and reputation risk;
- operational and information systems stability, both under normal circumstances and in times of crisis.

The Bank's management and business units are involved in the process for setting the risk appetite and are responsible for adequately monitoring the chosen risk indicators. These needs are assessed by means of the enterprise strategic planning process. The risk indicators are reported on a regular basis to ensure an effective alignment of the Bank's risk profile to its risk appetite; otherwise, appropriate actions could be taken. Additional information on the key credit, market and liquidity risk indicators monitored by the Bank's management is presented on the following pages.

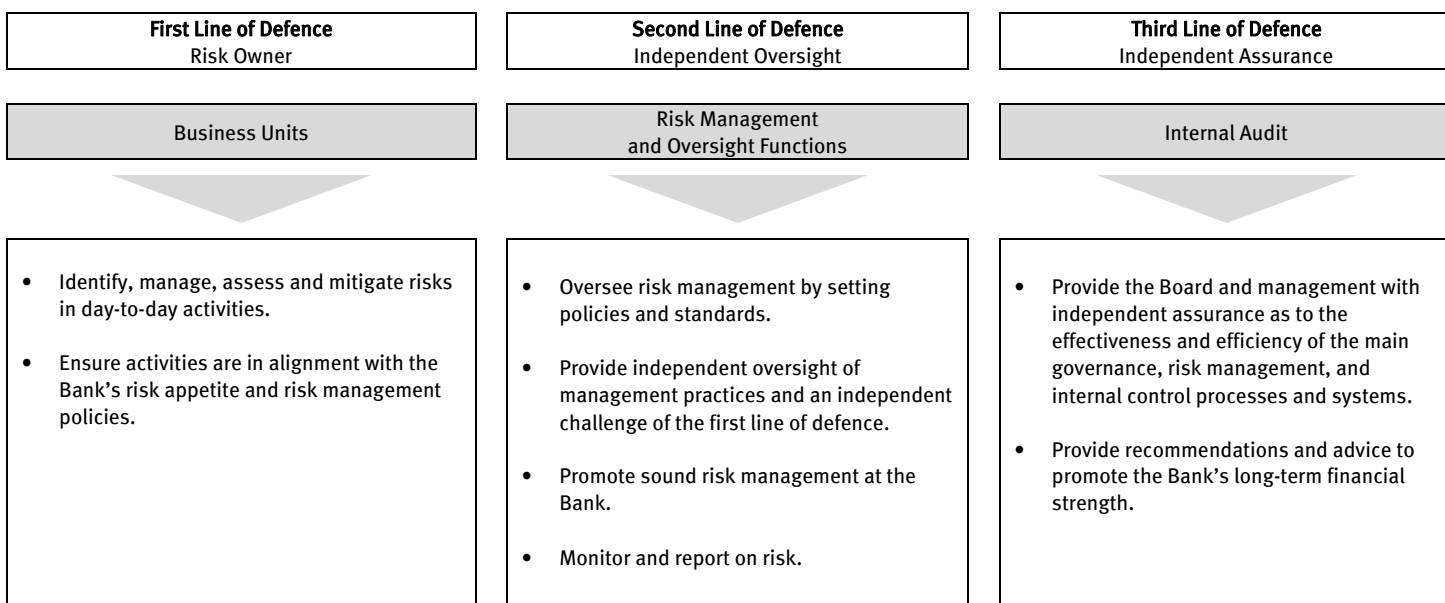
### Enterprise-Wide Stress Testing

As part of a more extensive process aimed at ensuring that the Bank maintains adequate capital levels commensurate with its business strategy and risk appetite, an enterprise-wide stress testing program is in place at the Bank. Stress testing can be defined as a risk management method that assesses the potential effects—on the Bank's financial position, capital and liquidity—of a series of specified changes in risk factors, corresponding to exceptional but plausible events. The program supports management's decision-making process by identifying potential vulnerabilities for the Bank as a whole that are considered in setting limits as well as in longer term business planning. The scenarios and stress test results are reviewed by a group of stress testing experts, a stress testing oversight group and the Global Risk Committee (GRC) and are approved by the Board. For additional information, see the Stress Testing and Crisis Scenarios sections of this MD&A applicable to credit risk, market risk, and liquidity risk.

### Incorporation of Risk Management Into the Corporate Culture

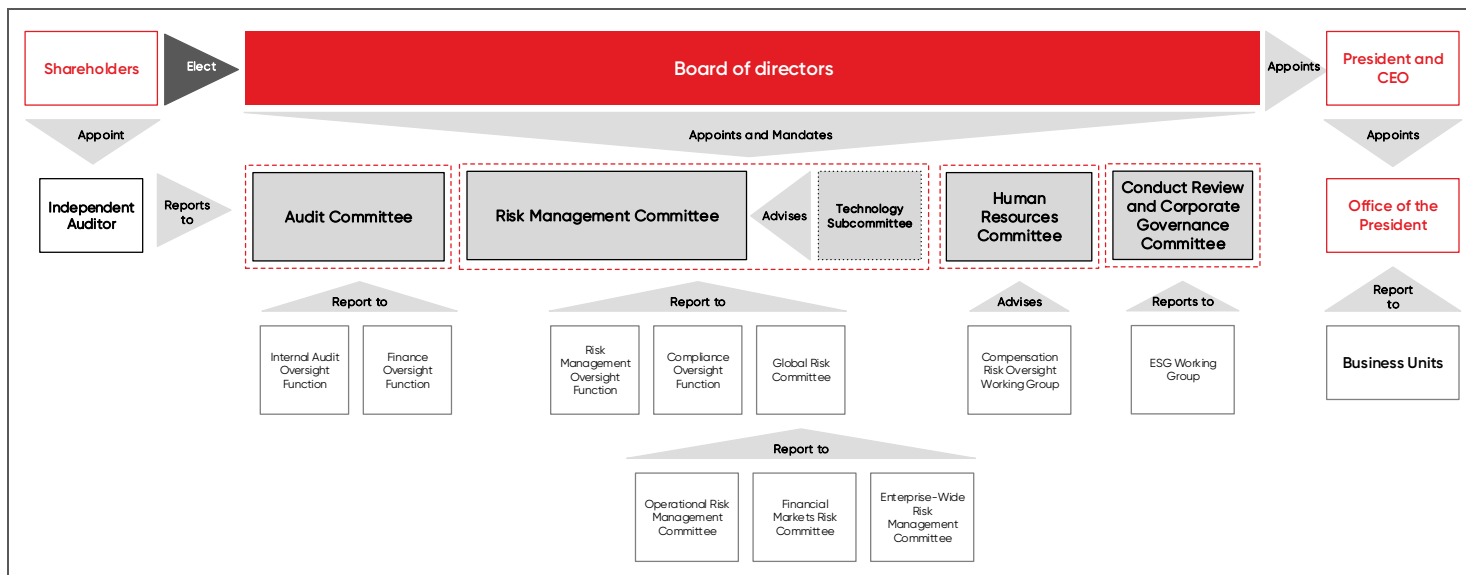
The Bank's management continually promotes risk management through internal communications. A balanced approach is advocated, whereby business development initiatives are combined with a constant focus on sound and effective risk management. In particular, risk is taken into consideration when preparing the segments' business plans, when analyzing strategic initiatives and when launching new products. The Bank's risk management is also strengthened by incentive compensation programs that are structured to reflect the Bank's risk appetite. In addition, Internal Audit carries out an evaluation of the culture through its mandates. Finally, all employees must complete mandatory annual regulatory compliance training focused on the Bank's Code of Conduct and Ethics and on anti-money laundering and anti-terrorist financing (AML/ATF) efforts as well as cybersecurity training. Risk management training is also offered across all segments of the Bank.

Furthermore, to ensure the effectiveness of the existing risk management framework, the Bank has defined clear roles and responsibilities by reinforcing the concept of the three lines of defence. The Governance Structure section presented on the following pages defines this concept as well as the roles and responsibilities at all levels of the organization.



## Governance Structure \*

The following diagram shows the Bank's overall governance architecture and the governance relationships established for risk management.



### The Board of Directors (Board)<sup>(1)</sup>

The Board examines and approves the Bank's overall risk philosophy and risk appetite, acknowledges and understands the main risks faced by the Bank, and makes sure appropriate systems are in place to effectively manage and control those risks. In addition, the Board ensures that the Bank operates in accordance with environmental, social and governance (ESG) practices and strategies. It performs its mandate both directly and through its committees: the Audit Committee, the Risk Management Committee (including the Information Technology Subcommittee), the Human Resources Committee, and the Conduct Review and Corporate Governance Committee. In addition, the various oversight functions, the Global Risk Committee and the working groups report to the Board and advise it.

### The Audit Committee<sup>(1)</sup>

The Audit Committee oversees the work of the Bank's internal auditor and independent auditor; ensures the Bank's financial strength; establishes the Bank's financial reporting framework, analysis processes and internal controls; and reviews any reports of irregularities in accounting, internal controls, and audit.

### The Risk Management Committee (RMC)<sup>(1)</sup>

The Risk Management Committee examines the risk appetite framework and recommends it to the Board for approval. It approves the main risk management policies and risk tolerance limits. It ensures that appropriate resources, processes and procedures are in place to properly and effectively manage risk on an ongoing basis. Finally, it monitors the risk profile and risk trends of the Bank's activities and ensures alignment with the risk appetite.

### The Information Technology Subcommittee<sup>(1)</sup>

The Information Technology Subcommittee advises the Risk Management Committee and supports it on, among other things, the Bank's technology strategy and the monitoring and management of information technology risks, including cyber risks, cybercrime and protection of personal information.

### The Human Resources Committee<sup>(1)</sup>

The Human Resources Committee examines and approves the Bank's total compensation policies and programs, taking into consideration the risk management framework, and recommends their approval to the Board. It sets annual objectives and key performance indicators for the President and Chief Executive Officer, recommends that they be approved by the Board, and evaluates the performance and achievements against these objectives and indicators. It recommends to the Board that it approves the compensation of the President and Chief Executive Officer, of the members of the Office of the President, and of the heads of the oversight functions. It also periodically reviews and examines the management succession plan.

### The Conduct Review and Corporate Governance Committee<sup>(1)</sup>

The Conduct Review and Corporate Governance Committee ensures that the Bank maintains sound practices that comply with legislation and best practices, particularly in the area of ESG responsibilities. It must ensure that the directors are qualified by evaluating the performance and effectiveness of the Board and its members and by planning director succession and the composition of the Board. The Committee ensures that mechanisms are in place to prevent prohibited financial transactions between the Bank and related parties.

(1) Additional information about the Bank's governance architecture can be found in the Management Proxy Circular for the 2021 Annual Meeting of Holders of Common Shares, which will soon be available on the Bank's website at [nbc.ca](http://nbc.ca) and on SEDAR's website at [sedar.com](http://sedar.com). The mandates of the Board and its committees are available in their entirety at [nbc.ca](http://nbc.ca).

#### The Office of the President and the Bank's Management

Composed of the President and Chief Executive Officer and the officers responsible for the Bank's main functions and business units, the Office of the President ensures that risk management is effective and aligned with the Bank's pursuit of its objectives and strategies. The Bank's management promotes the integration of risk management into its corporate culture and manages the primary risks facing the Bank.

#### The Internal Audit Oversight Function

The Internal Audit Oversight Function is the third line of defence in the risk management framework. It is responsible for providing the Bank's Board and management with objective, independent assurance as well as advice on the effectiveness and efficiency of the main governance, risk management, and internal control processes and systems and for making recommendations and providing advice to promote the Bank's long-term strength.

#### The Finance Oversight Function

The Finance Oversight Function is responsible for optimizing management of financial resources and ensuring sound governance of financial information. It helps the business segments and support functions with their financial performance, ensures compliance with regulatory requirements, and carries out the Bank's reporting to shareholders and the external reporting of the various units, entities and subsidiaries of the Bank. It is responsible for capital management and actively participates in the activities of the Asset/Liability Management Committee.

#### The Risk Management Oversight Function

The Risk Management Oversight Function is responsible for identifying, assessing and monitoring—independently and using an integrated approach—the various risks to which the Bank is exposed and for promoting a risk management culture within the Bank. The Risk Management team helps the Board and management understand and monitor the main risks. The unit also develops, maintains and communicates the risk appetite framework while overseeing the integrity and reliability of risk measures.

#### The Compliance Oversight Function

The Compliance Oversight Function is responsible for implementing a Bank-wide regulatory compliance risk management framework by relying on an organizational structure that includes functional links to the main business segments. It also exercises independent oversight and evaluation of the compliance of the Bank and its subsidiaries with standards and policies on regulatory compliance risk.

#### The Global Risk Committee (GRC)

The Global Risk Committee defines the parameters of the policies that determine risk tolerance and the overall risk strategy, for the Bank and its subsidiaries as a whole, and sets limits as well as tolerance and intervention thresholds enabling the Bank to properly manage the main risks to which it is exposed. The committee approves and monitors all large credit facilities. It also recommends for Board approval the Bank's risk philosophy, risk appetite and risk profile management. The Operational Risk Management Committee, the Financial Markets Risk Committee, and the Enterprise-Wide Risk Management Committee presented in the governance structure diagram are the primary committees reporting to the Global Risk Committee. The Global Risk Committee also carries out its mandate through the Senior Complex Valuation Committee, the Committee on Banks, the Models Oversight Committee and the Product and Activity Review Committees.

#### The Compensation Risk Oversight Working Group

The working group that monitors compensation-related risks supports the Human Resources Committee in its compensation risk oversight role. It is a three-member group consisting of the Executive Vice-President, Risk Management; the Chief Financial Officer and Executive Vice-President, Finance; and the Executive Vice-President, Employee Experience. The working group helps to ensure that compensation policies and programs do not unduly encourage senior management members, officers, material risk takers or bank employees to take risks beyond the Bank's risk tolerance thresholds. As part of that role, it ensures that the Bank is adhering to the Corporate Governance Guidelines issued by OSFI and to the Principles for Sound Compensation Practices issued by the Financial Stability Board, for which the Canadian implementation and monitoring is conducted by OSFI. The Board's Risk Management Committee also reviews the reports presented by the working group to the Human Resources Committee.

#### The ESG Working Group

The Working Group's main function is to develop and support the environmental, social and governance (ESG) initiatives and strategy of the Bank. Its members meet on a monthly basis. This committee is responsible for implementing the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). At least twice each year, the ESG Working Group reports to the Conduct Review and Governance Committee and the Audit Committee on the progress made and ongoing and upcoming ESG projects.

#### The Business Units

As the first line of defence, the business units manage risks related to their operations within established limits and in accordance with risk management policies by identifying, analyzing and understanding the risks to which they are exposed and implementing risk mitigation mechanisms. The management of these units must ensure that employees are adhering to current policies and limits.

### **Risk Management Policies**

The risk management policies and related standards and procedures set out responsibilities, define and describe the main activity-related risks, specify the requirements that the business units must meet in assessing and managing risk, stipulate the authorization process for risk-taking and set the risk limits to be adhered to. These policies cover the main risks in the Bank, are reviewed regularly to ensure they are still relevant given changes in the markets and in the business plans of the Bank's business units, and apply to the entire Bank and its subsidiaries. Other policies, standards, and procedures complement the main policies and cover more specific aspects of risk management such as business continuity, the launch of new products, initiatives or activities, or financial instrument measurement.

### **Governance of Model Risk Management**

The Bank makes increasing use of models to guide enterprise-wide risk management, financial markets strategy, economic and regulatory capital allocation, global credit risk management, wealth management and profitability measures. Models have in fact become a standard in risk management. This stresses the growing importance of model risk for banks, hence the implementation of a rigorous model risk management process to ensure models can be used appropriately and efficiently to manage risks.

The key components of the Bank's model risk management governance framework are as follows: the model risk management policies and standards, the model vetting group, and the Models Oversight Committee. The policies and standards set the rules and principles applicable to developing and vetting models. The scope of models covered is wide, ranging from market risk pricing models and automated credit decision-making models to the business risk capital model, including models used for regulatory capital and stressed capital purposes, IFRS 9 models, and financial-crime models. The framework also includes more advanced artificial intelligence models.

One of the cornerstones of the Bank's policies is the general principle that all models deemed important for the Bank or used for regulatory capital purposes require heightened lifecycle monitoring and independent vetting. All models used by the Bank are therefore classified in terms of risk level (low, medium, or high). Based on this classification, the Bank applies strict guidelines regarding the requirements for model development and documentation, independent review thereof, performance monitoring thereof, and minimum review frequency. The Bank believes that the best defence against "model risk" is the implementation of a robust development and validation framework.

### **Independent Oversight by the Compliance Service**

Compliance is an independent oversight function within the Bank. Its Senior Vice-President, Chief Compliance Officer and Chief Anti-Money Laundering Officer have direct access to the RMC and to the President and Chief Executive Officer and can communicate directly with officers and directors of the Bank and of its subsidiaries and foreign centres. The Senior Vice-President, Chief Compliance Officer and Chief Anti-Money Laundering Officer regularly meets with the Chair of the RMC (with whom she has a direct reporting relationship) in the absence of management, to review matters on the relationship between the Compliance Service and the Bank's management and on access to the information required.

Business unit managers must oversee the implementation of mechanisms for the daily control of regulatory compliance risks arising from the operations under their responsibility. Compliance exercises independent oversight in order to assist managers in effectively managing these risks and to obtain reasonable assurance that the Bank is compliant with the regulatory requirements in effect where it does business, both in Canada and internationally.

### **Independent Assessment by Internal Audit**

Internal Audit is an independent, objective function within the Bank. Through the Audit Committee, it provides assurance to management and the Board as to the Bank's level of command over its activities, advises on how to improve those activities, and contributes to the creation of added value. It helps the Bank to achieve its objectives by applying a systematic, methodical approach for assessing and improving the effectiveness of the design and operation of its main governance, risk management and internal control processes and systems and formulates recommendations and advice to promote the Bank's long-term strength.

Whenever recommendations are issued, Internal Audit is mandated to independently evaluate the appropriateness of the measures taken by managers to resolve issues and then to ensure rigorous follow-up. The Senior Vice-President, Internal Audit reports to the Chair of the Audit Committee. Her independence is ensured through an administrative relationship with the President and Chief Executive Officer, and she may, at any time, call an unscheduled Audit Committee meeting. Internal Audit has unrestricted access to all business segments, corporate units and subsidiaries of the Bank.

## Top and Emerging Risks

Managing risk requires a solid understanding of every type of risk found across the Bank, as they could have a material adverse effect on the Bank's business, results of operations, financial position and reputation. As part of its approach to risk management, the Bank identifies, assesses, reviews and monitors the range of top and emerging risks to which it is exposed in order to proactively manage them and implement appropriate mitigation strategies.

The Bank separately qualifies the risks to which it is exposed: a "top risk" is a risk that has been identified, is clearly defined, and could have a significant impact on the Bank's business, results of operations, financial position, and reputation, while an "emerging risk" is a risk that, while it may also have an impact on the Bank, is not well understood in terms of its likelihood, consequences, timing, or the extent of its potential impact.

In the normal course of business, the Bank is exposed to the following top risks.


Credit risk	Market risk	Funding and liquidity risk	Operational risk	Regulatory compliance risk	Reputation risk	Strategic risk	Environmental and social risk
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### Risks related to the COVID-19 pandemic

The COVID-19 pandemic has had and may continue to have disruptive and adverse effects in the countries where the Bank operates and, more broadly, on the global economy. It has also affected and may continue to affect the Bank and how it conducts business as well as its clients. This situation provides perspective on some of the top and emerging risks to which the Bank is exposed. Additional information is provided in the COVID-19 Pandemic section of this MD&A.

The Bank is also exposed to other so-called emerging or material risks, which are defined as follows.

Risk and Trend	Description
Information security and cybersecurity	<p>Technology, which is now omnipresent in our daily lives, is at the heart of banking services and has become the main driver of innovation in the financial sector. While this digital transformation meets the growing needs of customers while enhancing the operational efficiency of institutions, it nevertheless comes with information security and cybersecurity risks. The personal information and financial data of financial institution customers are prime targets for criminals. These criminals, who are increasingly well organized and employing ever more sophisticated schemes, try to use technology to steal information.</p> <p>Faced with a resurgence of cyberthreats and the sophistication of cybercriminals, the Bank is exposed to the risks associated with data breaches, malicious software, unauthorized access, hacking, phishing, identity theft, intellectual property theft, asset theft, industrial espionage, and possible denial of service due to activities causing network failures and service interruptions.</p> <p>Cyberattacks, as with system breaches or interruptions that support the Bank and its customers, could cause client attrition; financial loss; inability of clients to do their banking; non-compliance with privacy legislation or any other laws in effect; legal disputes; fines; penalties or regulatory action; reputational damage; compliance costs, corrective measures, investigative, or restoration costs; cost hikes to maintain and upgrade technological infrastructures and systems, all of which could affect the Bank's operating results or financial position, in addition to having an impact on its reputation.</p> <p>It is also possible for the Bank to be unable to prevent or implement effective preventive measures against every potential cyberthreat, as the tactics used are multiplying, change frequently, come from a wide range of sources and are increasingly sophisticated.</p> <p>Within this context, the Bank works to ensure the integrity and protection of its systems and the information they contain. The Bank reaffirms its commitment to continuous improvement in the area of information security, the ultimate goal being to protect its customers and maintain their trust. Along with its partners in the financial sector and with the regulatory authorities, the Bank is committed to making a sustained effort to mitigate technology risks. Measures specifically directed at anticipating this type of threat include the formation of multidisciplinary teams comprising cybersecurity and fraud prevention specialists. The Bank is also pursuing initiatives under its own cybersecurity program aimed at adapting its protection, surveillance, detection and response capabilities in response to changing threats. A governance and accountability structure has also been established to support decision-making based on sound risk management. The Information Technology Subcommittee is regularly informed of cybersecurity trends and developments and of lessons learned from operational incidents that have occurred in other large organizations in order to gain a better understanding of potential risks, particularly risks related to cybersecurity and the protection of personal information.</p>

Risk and Trend	Description
<p>Economic and geopolitical risk</p> 	<p>The economic expansion in the United States, which was the longest since World War II, ended abruptly in the spring of 2020 as measures put in place to limit the spread of COVID-19 forced large swaths of the global economy to close. The result was a collapse in global output and unprecedented job losses. In June 2020, 32.4 million people in the U.S. were receiving unemployment insurance benefits from various support programs, compared to 1.6 million at the same date 12 months earlier. The deteriorating economic outlook, combined with lockdown measures on this side of the border, drove the unemployment rate up 8.1 percentage points to 13.7% in May 2020, compared to just 5.6% in February 2020. Public policy-makers responded quickly, sparing no effort in terms of the extent of the financial support provided to households and businesses. In both Canada and the United States, income support programs more than offset labour market losses in the second quarter. In addition, the central banks also drew on their arsenals to provide liquidity and ensure the smooth functioning of financial markets. Canadian households, which had become more indebted in recent years, have been able to benefit from debt service accommodations that have cushioned the impact of an uncertain situation. A total of 755,000 homeowners took advantage of mortgage payment deferrals, while 477,000 individuals benefited from payment deferrals on credit card debt. In the second quarter, Canadians' debt service (principal and interest) declined by an unprecedented 6.0%.</p> <p>In this context, and due to the easing of lockdown measures, the U.S. economy recovered from the shock of COVID-19 with a vigour that surprised many observers. Retail sales, new home sales, existing home sales, housing starts and durable goods orders have rallied sharply and are now comparable to pre-crisis levels. Nevertheless, in addition to a potential acceleration of COVID-19 outbreaks, the U.S. economy could suffer from a premature withdrawal of fiscal support measures. Several support programs expired on July 31, 2020, and many Americans who lost their jobs could experience a sharp drop in income if new support measures are delayed. It is also important to consider the risk of social unrest, as many countries have been shaken by social crises in recent years, creating economic and political uncertainty.</p> <p>In Canada, monthly indicators also point to a strong rally in economic activity following the abysmal low reached in April. However, due to stricter lockdown measures, the contraction of the Canadian economy was more pronounced and, despite the lifting of most restrictive measures, it is still lagging in terms of recovery. While the strong rebound in employment is impressive, the Canadian labour market is still considerably weaker than it was in February 2020, and the job losses are not limited to those sectors where physical distancing is an issue. The economy may face challenges in 2021 as mortgage payment deferrals come to an end and income assistance programs gradually become less generous at a time when the labour market continues to recover. In addition, the current slower pace of immigration in Canada may hobble the real estate sector. Until a vaccine or a drug that reduces the symptoms of the disease is discovered, the economic recovery may not be complete. By encouraging employees to work from home, companies are jeopardizing economic activity in large urban centres. Should working from home change the organization of work more permanently, this may also pose a challenge to the commercial real estate sector. If the pandemic returns in another major wave of infection, the price outlook for raw materials would be much less positive. Continued low energy prices would not bode well for the oil sector, which is struggling to emerge from a long period of difficult adjustments.</p> <p>While there may be a consensus that the pace of economic recovery in the coming months will depend heavily on developments in the COVID-19 pandemic and the social distancing measures needed to contain the spread of the virus, the central banks remain committed to supporting the recovery by maintaining accommodative monetary policies and programs involving large-scale purchases of financial assets. For now, the likelihood of inflation taking an undesirable turn upwards in the short term remains low. However, should interest rates remain low for the long term, there is a real risk that market participants will implement strategies involving excessive risk-taking. This could have negative repercussions if it leads to economic problems or an unanticipated increase in interest rates.</p> <p>In short, given the ongoing uncertainties in this environment, the Bank remains vigilant and continues to rely on its strong risk management framework to identify, assess, and mitigate risk and to remain within the risk appetite limits.</p>

Risk and Trend	Description
<p>Reliance on technology and third parties</p> 	<p>The Bank is reliant on technology, as clients are seeking greater access to products and services on a variety of platforms that must support substantial data volumes. The fast pace of technological change combined with both client and competitive pressures require significant and sustained investment in technology. Inadequate implementation of technological improvements or new products or services could significantly affect the Bank's ability to serve and retain clients.</p> <p>Third parties provide essential components of the Bank's technological infrastructure such as Internet connections and access to network and other communications services. The Bank also relies on the services of third parties to support business processes and to handle certain IT activities. An interruption of these services or a breach of security could have an unfavourable impact on the Bank's ability to provide products and services to its customers and to conduct business, not to mention the impact it would have on the Bank's reputation. To mitigate this risk, the Bank has a third-party risk management framework wherein information security, financial health, and performance are validated before any agreements are reached and throughout the life of the agreements. It also includes business continuity plans, which are tested periodically to ensure their effectiveness in times of crisis. Despite these preventive measures and the efforts deployed by the Bank's teams to manage third parties, there remains a possibility that certain risks will materialize. In such cases, the Bank would then rely on the contingency and mitigation measures established in collaboration with the third parties. The Bank is aware of the significance of third-party-related risks and continues to develop its practices in this regard.</p> <p>Since the COVID-19 pandemic could affect the financial health, performance and business continuity of the Bank's third parties, it had to increase the frequency of its controls on them in fiscal 2020. In this context, the widespread phenomenon of working from home that is associated with lockdown measures has led to an increased use of digital channels as well as greater reliance on certain shared technological infrastructures.</p>
<p>Climate change</p> 	<p>The risk associated with climate change represents the possibility that issues related to such events could result in a loss of financial or operational value for the Bank, damage its reputation, or affect its stakeholders. As such, the physical risks arising from the impacts of more frequent and more intense extreme weather events, as well as the transition risks resulting from a shift to a low-carbon economy, require particular attention in order to reduce the Bank's exposure to these negative externalities and, at the same time, seize new growth opportunities.</p> <p>The Bank, aware that it has a mobilizing role to play in environmental matters, announced in 2018 its support for the Financial Stability Board's Task Force on Climate-Related Financial Disclosures (TCFD). The Bank is committed to communicating, in addition to its performance reports, the information recommended by the group.</p> <p>In addition, the Bank of Canada noted in its annual report "Financial System Review – 2020" that it continues to analyze and conduct research on key financial system vulnerabilities not directly related to COVID-19. This includes work on climate change. The regulators' interest in the subject demonstrates the growing importance attached to this risk. Although no specific requirements have yet been published, the Bank will continue to closely monitor developments and any resulting implications.</p> <p>See the Environmental and Social Risk section of this MD&amp;A for more information.</p>
<p>Technological innovation and competition</p> 	<p>The Bank's financial performance depends on its ability to develop and market new and innovative products and services, adopt and develop new technologies that help differentiate its products and services and generate cost savings, and market these new products and services at the right time and at competitive prices. On the other hand, failure to properly review critical changes within the business before and during the implementation and deployment of key technological systems or failure to align client expectations with the Bank's client commitments and operating capabilities could adversely affect the Bank's business, operating results, financial position and reputation.</p>

## **Other Factors That Can Affect the Bank's business, operating results, financial position and reputation**

### International Risks

Through the operations of some of its units (mainly its New York and London offices) and subsidiaries in Canada and abroad (in particular, Credigy Ltd., NBC Global Finance Limited, and Advanced Bank of Asia Limited), the Bank is exposed to risks arising from its presence in international markets and foreign jurisdictions. While these risks do not affect a significant proportion of the Bank's portfolios, their impact must not be overlooked, especially those that are of a legal or regulatory nature. Such risk can be particularly high when the exposure is in a territory where the enforceability of agreements signed by the Bank is uncertain, in countries and regions facing political or socio-economic disturbances, or in countries that may be subject to international sanctions. Generally speaking, there are many ways in which the Bank may be exposed to the risks posed by other countries, not the least of which being foreign laws and regulations. In all such situations, it is important to consider what is referred to as "country risk." Country risk affects not only the activities that the Bank carries out abroad but also the business that it conducts with non-resident clients as well as the services it provides to clients doing business abroad, such as electronic funds transfers, international products and transactions from Canada in foreign currencies.

As part of its activities, the Bank must adhere to anti-money laundering and anti-terrorist financing (AML/ATF) regulatory requirements in effect in each jurisdiction where it conducts business. It must also comply with the requirements pertaining to current international sanctions in these various jurisdictions. Money laundering and terrorist financing is a financial, regulatory and reputation risk. For additional information, see the Regulatory Compliance Risk Management section of this MD&A.

The Bank is exposed to financial risks outside Canada and the United States primarily through its interbank transactions on international financial markets or through international trade finance activities. This geographic exposure represents a moderate proportion of the Bank's total risk. The geographic exposure of loans is disclosed in the quarterly *Supplementary Financial Information* report available on the Bank's website at [nbc.ca](http://nbc.ca). To control country risk, the Bank sets credit concentration limits by country and reviews and submits them to the Board for approval upon renewal of the Credit Risk Management Policy. These limits are based on a percentage of the Bank's regulatory capital, in line with the level of risk represented by each country, particularly emerging countries. The risk is rated using a classification mechanism similar to the one used for credit default risk. In addition to the country limits, authorization caps and limits are established, as a percentage of capital, for the world's high-risk regions, i.e., essentially all regions except for North America, Western European countries and the developed countries of Asia.

### Acquisitions

The Bank's ability to successfully complete an acquisition is often conditional on regulatory approval, and the Bank cannot be certain of the timing or conditions of regulatory decisions. Acquisitions could affect future results should the Bank experience difficulty integrating the acquired business. If the Bank does encounter difficulty integrating an acquired business, maintaining an appropriate governance level over the acquired business, or retaining key officers within the acquired business, these factors could prevent the Bank from realizing expected revenue growth, cost savings, market share gains and other projected benefits of the acquisition.

### Intellectual Property

The Bank protects the intellectual property developed by its employees in connection with their duties. However, in some cases, it may have a more limited ability to acquire intellectual property rights. Moreover, the intellectual property rights acquired by the Bank provide no guarantees that they will be effective in deterring or preventing a third party from misappropriating intellectual property or providing a defense against the misappropriation of intellectual property. Moreover, the goods and services developed by the Bank are provided in a competitive market where third parties could hold intellectual property rights prior to those held by the Bank. In such circumstances, there is no guarantee that the Bank will successfully provide a defense against an infringement claim, that it will be able to modify its goods and services to avoid infringing upon third party rights or that it will obtain a licence with commercially acceptable conditions.

### Ability to Attract and Retain Key Officers

The Bank's future performance depends largely on its ability to attract and retain key officers. There is intense competition for the best people in the financial services industry, and there is no assurance that the Bank, or any entity it acquires, will be able to continue to attract and retain key officers.

### Judicial and Regulatory Proceedings

The Bank takes reasonable measures to comply with the laws and regulations in effect in the jurisdictions where it operates. Should these measures prove ineffective, the Bank could be subject to judicial or regulatory decisions resulting in fines, damages, or other costs or to restrictions likely to adversely affect its operating results or its reputation. The Bank may also be subject to litigation in the normal course of business. Although the Bank establishes provisions for the measures it is subject to under accounting requirements, actual losses resulting from such litigation could differ significantly from the recognized amounts, and unfavourable outcomes in such cases could have a significant adverse effect on the Bank's operating results. The resulting reputational damage could also affect the Bank's future business prospects. For additional information, see Note 26 to the consolidated financial statements.

### Accounting Policies, Methods and Estimates Used by the Bank

The accounting policies and methods used by the Bank determine how the Bank reports its financial position and operating results and require management to make estimates or rely on assumptions about matters that are inherently uncertain. Any changes to these estimates and assumptions may have a significant impact on the Bank's operating results and financial position.

### Additional Factors

Factors that could affect the Bank's business, operating results and reputation include amendments to tax legislation, unexpected changes in consumer spending and saving habits, the timely development and launch of new products and services, the ability to successfully align its organizational structure, resources and processes, the ability to activate a business continuity plan within a reasonable time, the potential impact of international conflicts, natural catastrophes or public health emergencies such as COVID-19 on the Bank's activities, operating results and reputation and the Bank's ability to foresee and effectively manage the risks associated with these factors through rigorous risk management.

## Credit Risk

Credit risk is the risk of incurring a financial loss if an obligor does not fully honour its contractual commitments to the Bank. Obligors may be debtors, issuers, counterparties or guarantors. Credit risk is the most significant risk facing the Bank in the normal course of business. The Bank is exposed to credit risk not only through its direct lending activities and transactions but also through commitments to extend credit, letters of guarantee, letters of credit, over-the-counter derivatives trading, debt securities, securities purchased under reverse repurchase agreements, deposits with financial institutions, brokerage activities, and transactions carrying a settlement risk for the Bank such as irrevocable fund transfers to third parties via electronic payment systems.

Obligors have been affected by the difficult economic environment resulting from COVID-19 and its impact on the global and local economies. This exceptional situation has led to significant changes in the overall market environment, including business closures, temporary layoffs and lower oil prices. However, certain government measures have been implemented to assist retail and business clients affected by COVID-19.

### **Governance**

A policy framework centralizes the governance of activities that generate credit risk for the Bank and is supplemented by a series of subordinate internal policies and standards. These policies and standards address specific management issues such as concentration limits by borrower group and sector, credit limits, collateral requirements and risk quantification or issues that provide more thorough guidance for given business segments.

For example, the institutional activities of the Bank and its subsidiaries on financial markets and international commercial transactions are governed by business unit directives that set out standards adapted to the specific environment of these activities. This also applies to retail brokerage subsidiaries. In isolated cases, a business unit or subsidiary may have its own credit policy, and that policy must always fall within the spirit of the Bank's policy framework and be reviewed and approved by the management of the Risk Management Group. The Risk Management Group defines the scope of the universe of subsidiaries carrying significant credit risks and the magnitude of the risks incurred.

Credit risk is controlled through a rigorous process that comprises the following elements:

- credit risk rating and assessment;
- economic capital assessment;
- stress testing and crisis scenarios;
- credit granting process;
- revision and renewal process;
- risk mitigation;
- follow-up of monitored accounts and recovery;
- counterparty risk assessment;
- settlement risk assessment;
- environmental risk assessment.

### Reporting

Every quarter, an integrated risk management report is presented to senior management and the RMC. It presents changes in the credit portfolio and highlights on the following matters:

- credit portfolio volume growth by business segment;
- a breakdown of the credit portfolio according to various criteria for which concentration limits have been set;
- changes in provisions and allowances for credit losses;
- changes in impaired loans;
- follow-up of monitored accounts.

### Credit Risk Rating and Assessment

Before a sound and prudent credit decision can be made, the obligor's or counterparty's credit risk must be accurately assessed. This is the first step in processing credit applications. Each application is analyzed and assigned one of 19 grades on a scale of 1 to 10 using a credit rating system developed by the Bank for all portfolios exposed to credit risk. As each grade corresponds to a debtor's, counterparty's or third party's probability of default, the Bank can estimate the credit risk. The credit risk assessment method varies according to portfolio type. There are two main methods for assessing credit risk, i.e., the Advanced Internal Rating-Based (AIRB) Approach and the Standardized Approach, as defined by the Basel Accord to determine minimum regulatory capital requirements for most of its portfolios.

The main parameters used to measure the credit risk of loans outstanding and undrawn amounts under the AIRB Approach are as follows:

- probability of default (PD), which is the probability of through-the-cycle 12-month default by the obligor, calibrated on a long-run average PD throughout a full economic cycle;
- loss given default (LGD), which represents the magnitude of the loss from the obligor's default that would be expected in an economic downturn and subject to certain regulatory floors, expressed as a percentage of exposure at default;
- exposure at default (EAD), which is an estimate of the amount drawn and of the expected use of any undrawn portion prior to default, and cannot be lower than the current balance.

The methodology as well as the data and the downturn periods used to estimate LGD are described below.

AIRB APPROACH	DATA <sup>(1)</sup>	DOWNTURN PERIOD <sup>(1)</sup>	METHODOLOGY FOR CALCULATING LGD
Retail	The Bank's internal historical data from 1996 to 2018	1996-1998 and 2008-2009	LGD based on the Bank's historical internal data on recoveries and losses
	The Bank's internal historical data from 2000 to 2018		
Corporate	Benchmarking results using: <ul style="list-style-type: none"> <li>• Moody's observed default price of bonds, from 1983 to 2017</li> <li>• Global Credit Data Consortium historical loss and recovery database from 1998 to 2018</li> </ul>	2000-2003, 2008-2009 and 2015-2016	LGD based on the Bank's historical internal data on recoveries and losses
Sovereign	Moody's observed default price of bonds, from 1983 to 2015 S&P rating history from 1975 to 2016	1999-2001 and 2008-2012	Based on implied market LGD using observed bond price decreases following the issuer's default
Financial institutions	Global Credit Data Consortium historical loss and recovery database from 1991 to 2013	1991-1992, 1994, 1997-1998, 2001-2002 and 2008-2009	Model for predicting LGD based on different issue- and issuer-related risk drivers

(1) The performance of the models resulting from the AIRB Approach is measured quarterly, and the methodologies are validated by an independent third party annually. A report on model performance under the AIRB Approach is presented annually to the RMC. According to the most recent performance report, the models continue to perform well and do not require the addition of new data.

### Personal Credit Portfolios

This category comprises portfolios of residential mortgage loans, consumer loans and loans to certain small businesses. To assess credit risk, AIRB models are in place for the main portfolios, particularly mortgage loans, home equity lines of credit, credit cards, budget loans, lines of credit and SME retail. A risk analysis based on loan grouping in pools of homogeneous obligor and product profiles is used for overall management of personal credit portfolios. This personal credit assessment approach, which has proven particularly effective for estimating credit defaults and losses, takes a number of factors into account, namely:

- behaviour scoring;
- loan product characteristics;
- collateral provided;
- the length of time on the Bank's balance sheet;
- loan status (active, delinquent or defaulted).

This mechanism provides adequate risk measurement inasmuch as it effectively differentiates risk levels by pool. Therefore, the results are periodically reviewed and, if necessary, adjustments are made to the models. Obligor migrations between pools are among the factors considered in the credit risk assessment.

Loan pools are also established based on PD, LGD, and EAD, which are measured based on the characteristics of the obligor and the transaction itself. The credit risk of these portfolios is estimated using credit scoring models that determine the obligor's PD. LGD is estimated based on transaction-specific factors such as loan product characteristics (for example, a line of credit versus a term loan), loan-to-value ratio and types of collateral.

Credit scoring models are also used to grant credit. These models use proven statistical methods that measure debtors' demand characteristics and history based on internal and external historical information to estimate the debtors' future credit behaviour and assign a probability of default. The underlying data include debtor information such as current and past employment, historical loan data in the Bank's management systems and information from external sources such as credit rating agencies.

The Bank also uses behaviour scoring models to manage and monitor current commitments. The risk assessment is based on statistical analyses of the past behaviour of obligors with which the Bank has a long-term relationship in an effort to predict their future behaviour. The underlying information includes the obligor's cash flows and borrowing trends. Information on characteristics that determine behaviour in these models also comes from both internal sources on current commitments and external sources. The table on the following page presents the PD categories and the credit quality of the associated personal credit portfolio.

### Mortgage Loan Underwriting

In order to mitigate the impact of an economic slowdown and ensure the long-term quality of its portfolio, the Bank uses sound risk management when granting residential mortgages to confirm: (i) the obligor's intention to meet its financial obligations, (ii) the obligor's ability to repay its debts, and (iii) the quality of the collateral. In addition, in accordance with the applicable rules, the Bank takes a prudent approach to client qualification by using, for example, a higher interest rate to mitigate the risk of short- or medium-term rate increases.

Nonetheless, the risk of economic slowdown could adversely affect the profitability of the mortgage portfolio. In stress test analyses, the Bank considers a variety of scenarios to measure the impact of adverse market conditions. In such circumstances, our analyses show significantly higher credit losses, which would decrease profitability and reduce the Bank's capital ratios.

### Business and Government Credit Portfolios

This category comprises business (other than some small businesses that are classified in personal credit portfolios), government and financial institution credit portfolios.

These credit portfolios are assigned a risk rating based on a detailed individual analysis of the financial and non-financial aspects of the obligor, including the obligor's financial strength, sector of economic activity, competitive ability, access to capital management quality and number of years in business. The Bank has risk-rating tools and models enabling it to specifically assess the risk represented by an obligor in relation to its industry and peers. The models used are adapted to the obligor's broad sector of activity. Models are in place for ten sectors: business/commercial, large business, financial institutions, sovereigns, investment funds, energy, real estate, agriculture, insurance, and public-private partnership project financing.

This risk assessment method assigns a default risk rating to an obligor that reflects its credit quality. To each default credit risk rating corresponds a PD (see the table below). Using this classification of obligor credit risk, the Bank can differentiate appropriately between the various assessments of an obligor's capacity to meet its contractual obligations. Default risk ratings are assigned according to an assessment of an obligor's commercial and financial risks based on a solvency review. Various risk quantification models, described below, are used to perform this assessment.

The business and government default risk rating scale used by the Bank is similar to the systems used by major external rating agencies. The following table presents a grouping of the ratings by major risk category and compares them with the ratings of two major rating agencies.

#### Internal Default Risk Ratings\*

Description <sup>(1)</sup>	Personal credit portfolios		Business and government credit portfolios			
	PD (%) – Retail	Ratings	PD (%) – Corporate and financial institutions	PD (%) – Sovereign	Standard & Poor's	Moody's
Excellent	0.000–0.144	1–2.5	0.000–0.125	0.000–0.094	AAA to A-	Aaa to A3
Good	0.145–0.506	3–4	0.125–0.451	0.094–0.464	BBB+ to BBB-	Baa1 to Baa3
Satisfactory	0.507–2.681	4.5–6.5	0.451–4.743	0.464–6.607	BB+ to B	Ba1 to B2
Special mention	2.682–9.348	7–7.5	4.743–11.161	6.607–19.120	B- to CCC+	B3 to Caa1
Substandard	9.349–9.999	8–8.5	11.161–99.999	19.120–99.999	CCC & CCC-	Caa2 & Caa3
Default	1	9–10	100	100	CC, C & D	Ca, C & D

(1) Additional information is provided in Note 7 – *Loans and Allowances for Credit Losses* to the audited annual consolidated financial statements for the year ended October 31, 2020.

The Bank also uses individual assessment models by industry to assign a risk rating to the credit facility based on the collateral and guarantees the obligor is able to provide and, in some cases, based on other factors. The Bank consequently has a bi-dimensional risk-rating system that, using models and based on internal and external historical data, establishes a default risk rating for each obligor. In addition, the models assign, to each credit facility, an LGD risk rating that is independent of the default risk rating assigned to the obligor.

The Bank's default risk ratings and LGD risk ratings as well as the related risk parameters contribute directly to informed credit-granting, renewal and monitoring decisions. They are also used to determine and analyze risk-based pricing. In addition, from a credit portfolio management perspective, they are used to establish counterparty credit concentration limits and segment concentration limits as well as limits to decision-making power and to determine the credit risk appetite of these portfolios. Moreover, they represent an important component in estimating expected and unexpected losses, measuring minimum required economic capital, and measuring the minimum level of capital required, as prescribed by the regulatory authorities.

The credit risk of obligors and of their facilities is assessed with the PD and LGD parameters at least once a year or more often if significant changes (triggers) are observed when updating financial information or if another qualitative indicator of a deterioration in the obligor's solvency or in the collateral associated with the obligor's facilities is noted. A watchlist also exists that enables the Bank to more actively monitor the financial position of obligors whose default-risk rating is greater than or equal to 7.0. This process seeks to minimize an obligor's default risk and allows for proactive credit risk management.

#### Validation

The Risk Management Group monitors the effectiveness of the risk-rating systems and associated parameters, which are also reviewed regularly in accordance with the Bank's policies.

Backtesting is performed at regular intervals to validate the effectiveness of the models used to estimate PD, LGD, and EAD. For PD in particular, this backtesting takes the form of sequentially applied statistical tests designed to assess the following criteria:

- the model's discriminatory power;
- overrides;
- model calibration;
- the stability of the model's output.

The credit risk quantification models are developed and tested by a team of specialists and their performance is monitored by the applicable business units and related credit risk management services. Models are validated by a unit that is independent of both the specialists who developed the model and the concerned business units. Approvals of new models or changes to existing models are subject to an escalation process established by the model risk management policy. Furthermore, new models or changes to existing models that markedly impact regulatory capital must be approved by the Board before being submitted to the regulatory agencies, and a summary report of all changes to the models is submitted to the RMC once a year.

The facility and default risk-rating systems, methods and models are also subject to periodic independent validation as often as required given the inherent risk of the activity. Models that have a significant impact on regulatory capital must be reviewed regularly, thereby further raising the certainty that these quantification mechanisms are working as expected.

The key aspects to be validated are factors allowing accurate risk classification by level, adequate quantification of exposure, use of assessment techniques that include external factors such as economic conditions and credit status and, lastly, compliance with internal policies and regulatory provisions. Each year, the Risk Management Group presents a summary report on the validations to the RMC.

The Bank's credit risk assessment and rating systems are overseen by the Models Oversight Committee, the GRC and the RMC, and are an integral part of a comprehensive Bank-wide credit risk oversight framework. Along with the above-mentioned elements, the Bank documents and periodically reviews the policies, definitions of responsibilities, resource allocation and existing processes.

#### **Assessment of Economic Capital**

The assessment of the Bank's minimum required economic capital is based on the credit risk assessments of debtors. These two activities are therefore interlinked. The different models used to assess the credit risk of a given portfolio type also enable the Bank to determine the default correlation among debtors. This information is a critical component in the evaluation of potential losses for all portfolios carrying credit risk. Estimates of potential losses, whether expected or not, are based on historical loss experience, portfolio monitoring, market data and statistical modelling. Expected and unexpected losses are factors used in assessing the minimum required economic capital for all of the Bank's credit portfolios. The assessment of economic capital also considers the anticipated potential migrations of obligors' default risk during the remaining term of their credit commitments. The main risk factors that have an impact on economic capital are as follows:

- the obligor's PD;
- EAD;
- LGD;
- the PD correlation among obligors;
- the residual term of credit commitments;
- the impact of economic and sector-based cycles on asset quality.

#### **Stress Testing and Crisis Scenarios**

The Bank carries out stress tests to evaluate its sensitivity to crisis situations in certain activity sectors and key portfolios. A global stress test methodology covers most business, government, and personal credit portfolios to provide the Bank with an overview of the situation. By simulating specific scenarios, these tests enable the Bank to measure the level of regulatory capital needed to absorb potential losses and to determine the impact on its solvency. In addition, these tests contribute to portfolio management as they influence the determination of concentration limits by obligor, product or business sector.

#### **Credit-Granting Process**

Credit-granting decisions are based first and foremost on the results of the risk assessment. Aside from an obligor's solvency, credit-granting decisions are also influenced by factors such as available collateral, transaction compliance with policies, standards and procedures, and the Bank's overall risk-adjusted return objective. Each credit-granting decision is made by authorities within the risk management teams and management who are independent of the business units and are at a reporting level commensurate with the size of the proposed credit transaction and the associated risk.

Decision-making authority is determined in compliance with the delegation of authority set out in the Credit Risk Management Policy. A person in a senior position in the organization approves credit facilities that are substantial or carry a higher risk for the Bank. The GRC approves and monitors all substantial credit facilities. Credit applications that exceed management's latitudes are submitted to the Board for approval. The credit-granting process demands a high level of accountability from managers, who must proactively manage the credit portfolio.

#### **Review and Renewal Processes**

The Bank periodically reviews credit files. The review process enables the Bank to update information on the quality of the facilities and covers, among other things, risk ratings, compliance with credit conditions, and obligor behaviour. In the specific case of business credit portfolios, the credit risk of all obligors is reviewed at least once per year. After this periodic review, for on-demand or unused credit, the Bank decides whether to pursue its business relationship with the obligor and, if so, revises the credit conditions. For personal credit portfolios, the credit risk of all obligors is reviewed monthly.

#### **Risk Mitigation**

The Bank also controls credit risk using various risk mitigation techniques. In addition to the standard practice of requiring collateral to guarantee repayment of the credit it grants, the Bank also uses protection mechanisms such as credit derivative financial instruments, syndication and loan assignments as well as an orderly reduction in the amount of credit granted.

The most common method used to mitigate credit risk is to obtain quality collateral from obligors. Obtaining collateral cannot replace a rigorous assessment of an obligor's ability to meet its financial obligations, but, beyond a certain risk threshold, it is an essential complement. In certain circumstances it is not necessary to take guarantees. The need to take collateral depends upon the level of risk presented by the obligor and the type of loan granted. However, if the level of risk to the Bank is considered high, collateral will likely be required. The legal validity and enforceability of any collateral obtained and the Bank's ability to correctly and regularly measure the collateral's value are critical for this mechanism to play its proper role in risk mitigation.

The Bank has established specific requirements in its internal policies with respect to the appropriate legal documentation and assessment for the kinds of collateral that business units may require to guarantee the loans granted. The categories of eligible collateral and the lending value of the collateralized assets have also been defined by the Bank. For the most part, they include the following asset categories as well as guarantees (whether secured by collateral or unsecured) and government and bank guarantees:

- accounts receivable;
- inventories;
- machinery and equipment and rolling stock;
- residential and commercial real estate, office buildings and industrial facilities;
- cash and marketable securities.

#### Portfolio Diversification and Management

The Bank is exposed to credit risk, not only through outstanding loans and undrawn amounts of commitments to a particular obligor but also through the sectoral distribution of the outstanding loans and undrawn amounts and through the exposure of its various credit portfolios to geographical, concentration and settlement risks.

The Bank's approach to controlling these diverse risks begins with a diversification of exposures. Measures designed to maintain a healthy degree of diversification of credit risk in its portfolios are set out in the Bank's policies, standards and procedures. These instructions are mainly reflected in the application of various exposure limits: credit concentration limits by counterparty and credit concentration limits by business sector, country, region, product, and type of financial instrument. These limits are determined based on the Bank's credit risk appetite framework and are reviewed periodically. Compliance with these limits, particularly exceptions, is monitored through periodic reports submitted by the Risk Management Group's officers to the Board.

Continuous analyses are performed in order to anticipate problems with a sector or obligor before they materialize as defaulted payments.

#### Other Risk Mitigation Methods

Credit risk mitigation measures for transactions in derivative financial instruments, which are regularly used by the Bank, are described in detail in the Counterparty Risk section.

#### *Credit Derivative Financial Instruments and Financial Guarantee Contracts*

The Bank also reduces credit risk by using the protection provided by credit derivative financial instruments such as credit default swaps. When the Bank acquires credit protection, it pays a premium on the swap to the counterparty in exchange for the counterparty's commitment to pay if the underlying entity defaults or another event involving the underlying entity and covered by the legal agreement occurs. Since, like obligors, providers of credit protection must receive a default risk rating, the Bank's standards set out all the criteria under which a counterparty may be judged eligible to mitigate the Bank's credit risk. The Bank may also reduce its credit risk by entering into financial guarantee contracts whereby a guarantor indemnifies the Bank for a loss resulting from an obligor failing to make a payment when due in accordance with the contractual terms of a debt instrument.

#### *Loan Syndication*

The Bank has developed specific instructions on the appropriate objectives, responsibilities and documentation requirements for loan syndication.

#### **Follow-Up of Monitored Accounts and Recovery**

Credit granted and obligors are monitored on an ongoing basis and in a manner commensurate with the related risk. Loan portfolio managers use an array of intervention methods to conduct a particularly rigorous follow-up on files that show a high risk of default. When loans continue to deteriorate and there is an increase in risk to the point where monitoring has to be increased, a group specialized in managing problem accounts steps in to maximize collection of the disbursed amounts and tailor strategies to these accounts.

In these cases, loan portfolio managers prepare and submit, to the credit department, a detailed monitoring report (watchlist) each month to track the status of at-risk obligors and the corrective measures undertaken. The management of each department concerned performs follow-ups on the reports, and each quarter a credit monitoring committee meets to review the action plans and monitoring reports of obligors that have commitments of \$3 million or more. The authority to approve allowances for credit losses is attributed using limits delegated on the basis of hierarchical level under the Credit Risk Management Policy.

Information on the recognition of impaired loans and allowances for credit losses is presented in Notes 1 and 7 to the consolidated financial statements.

### **Forbearance and Restructuring**

Situations where a business or retail obligor begin showing clear signs of potential insolvency are managed on a case-by-case basis and require the use of judgment. The Loan Work Out Policy sets out the principles applicable in such situations to guide loan restructuring decisions and identify situations where distressed restructuring applies. A distressed restructuring situation occurs when the Bank, for economic or legal reasons related to the obligor's financial difficulties, grants the obligor a special concession that is contrary to the Bank's policies. Such concessions could include a lower interest rate, waiver of principal and extension of the maturity date.

The Bank has established a management framework for commercial and corporate obligors that represent higher-than-normal risk of default. It outlines the roles and responsibilities of loan portfolio managers with respect to managing high-risk accounts and the responsibilities of the Work Out units and other participants in the process. Lastly, the Credit Risk Management Policy and a management framework are used to determine the authorization limits for distressed restructuring situations. During fiscal years 2020 and 2019, the amount of distressed loan restructurings was not significant.

### **Counterparty Risk Assessment**

Counterparty risk is a credit risk that the Bank incurs on various types of transactions involving financial instruments. The most significant risks are those it faces when it trades derivative financial instruments with counterparties on the over-the-counter market or when it purchases securities under reverse repurchase agreements or sells securities under repurchase agreements. Securities lending transactions and securities brokerage activities involving derivative financial instruments are also sources of counterparty risk. Note 16 to the consolidated financial statements provides a complete description of the credit risk for derivative financial instruments by type of traded product.

The Risk Management Group has developed models by type of counterparty through which it applies an advanced methodology for calculating the Bank's credit risk exposure and economic capital. The exposures are subject to limits. These two elements are established based on the potential volatility of the underlying assets until expiration of the contract.

Counterparty obligations related to the trading of contracts on derivative financial instruments, securities lending transactions and reverse repurchase agreements are frequently subject to credit risk mitigation measures. The mitigation techniques are somewhat different from those used for loans and advances and depend on the nature of the instrument or the type of contract traded. The most widely used measure is the signing of master agreements: the International Swaps & Derivatives Association, Inc. (ISDA) master agreement, the Global Master Repurchase Agreement (GMRA) and the Global Master Securities Lending Agreement (GMSLA). These agreements make it possible, in the event of default, insolvency or bankruptcy of one of the contracting parties, to apply full netting of the gross amounts of the market values for each of the transactions covered by the agreement in force at the time of default. The amount of the final settlement is therefore the net balance of gains and losses on each transaction, which reduces exposure when a counterparty defaults. The Bank's policies require that an ISDA, GMRA, or GMSLA agreement be signed with most trading counterparties to derivatives, foreign exchange forward contracts, securities lending transactions and reverse repurchase agreements.

Another mechanism for reducing credit risk on derivatives and foreign exchange forward contracts complements the ISDA master agreement in many cases and provides the Bank and its counterparty (or either of the parties, if need be) with the right to request collateral from the counterparty when the net balance of gains and losses on each transaction exceeds a threshold defined in the agreement. These agreements, also known as Credit Support Annexes (CSAs), are mandatory when financial institutions trade between each other in international financial markets since they limit credit risk while providing traders with additional flexibility to continue trading with the counterparty. The Bank always, when required by regulation, uses this type of legal documentation in transactions with financial institutions and governments. For business transactions, the Bank prefers to use internal mechanisms set out in the credit agreements. The Bank's internal policies set the conditions governing the implementation of such mitigation methods.

Requiring collateral as part of a securities lending transaction or reverse repurchase agreement is not solely the result of an internal credit decision. In fact, it is a mandatory market practice imposed by self-regulating organizations in the financial services sector such as the Investment Industry Regulatory Organization of Canada.

The Bank has identified circumstances in which it is likely to be exposed to wrong-way risk, which is generally associated with exposure to counterparty risk and characterized by higher risk for the Bank if a counterparty's PD increases (unfavourable positive correlation). A common wrong-way risk arises from the trading of derivatives contracts with counterparties where the underlying assets may include equity securities issued by those counterparties.

#### **Assessment of Settlement Risk**

Settlement risk potentially arises from transactions that feature reciprocal delivery of cash or securities between the Bank and a counterparty. Foreign exchange contracts are an example of transactions that can generate significant levels of settlement risk. However, the implementation of multilateral settlement systems that allow settlement netting among participating institutions has contributed greatly to reducing the risks associated with the settlement of foreign exchange transactions among banks. The Bank also uses financial intermediaries to gain access to established clearing houses in order to minimize settlement risk for certain financial derivative transactions. In some cases, the Bank may have direct access to established clearing houses for settling financial transactions such as repurchase agreements or reverse repurchase agreements. In addition, certain derivative financial instruments traded over the counter are settled directly or indirectly by central counterparties. For additional information, see the table that presents notional amounts in Note 16 to the consolidated financial statements.

There are several other types of transactions that may generate settlement risk, in particular the use of certain electronic fund transfer services. This risk refers to the possibility that the Bank may make a payment or settlement on a transaction without receiving the amount owed by the counterparty, and with no opportunity to recover the funds delivered (irrevocable settlement).

The ultimate means for completely eliminating such a risk is for the Bank to complete no payments or settlements before receiving the funds due from the counterparty. Such an approach cannot, however, be used systematically. For several electronic payment services, the Bank is able to implement mechanisms that allow it to make its transfers revocable or to debit the counterparty in the amount of the settlements before it makes its own transfer. On the other hand, the nature of transactions in financial instruments makes it impossible for such practices to be widely used. For example, on foreign exchange transactions involving a currency other than the U.S. dollar, time zone differentials impose strict payment schedules on the parties. The Bank cannot unduly postpone a settlement without facing significant penalties, due to the large size of amounts involved.

The most effective way for the Bank to control settlement risks, both for financial market transactions and irrevocable transfers, is to impose internal risk limits based on the counterparty's ability to pay.

The amounts shown in the following tables represent the Bank's maximum exposure to credit risk as at the financial reporting date without taking into account any collateral held or any other credit enhancements. These amounts do not take into account allowances for credit losses nor amounts pledged as collateral. The tables also exclude equity securities.

### Maximum Credit Risk Exposure Under the Basel Asset Categories\*

	As at October 31, 2020					Total
	Drawn	Undrawn commitments	Repo-style transactions <sup>(1)</sup>	Derivative financial instruments	Other off-balance-sheet items <sup>(2)</sup>	
<b>Retail</b>						
Residential mortgage	57,062	9,751	–	–	–	66,813
Qualifying revolving retail	2,488	6,286	–	–	–	8,774
Other retail	14,394	2,314	–	–	32	16,740
	<b>73,944</b>	<b>18,351</b>	<b>–</b>	<b>–</b>	<b>32</b>	<b>92,327</b>
<b>Non-retail</b>						
Corporate	62,569	24,256	23,804	1	4,772	115,402
Sovereign	58,054	5,638	55,193	180	102	119,167
Financial institutions	3,534	399	66,120	2,350	514	72,917
	<b>124,157</b>	<b>30,293</b>	<b>145,117</b>	<b>2,531</b>	<b>5,388</b>	<b>307,486</b>
<b>Trading portfolio</b>	–	–	–	14,011	–	14,011
<b>Securitization</b>	2,247	–	–	–	3,807	6,054
<b>Total – Gross credit risk</b>	<b>200,348</b>	<b>48,644</b>	<b>145,117</b>	<b>16,542</b>	<b>9,227</b>	<b>419,878</b>
<b>Standardized Approach</b>	20,932	284	14,045	2,394	284	37,939
<b>AIRB Approach</b>	179,416	48,360	131,072	14,148	8,943	381,939
<b>Total – Gross credit risk</b>	<b>200,348</b>	<b>48,644</b>	<b>145,117</b>	<b>16,542</b>	<b>9,227</b>	<b>419,878</b>

	As at October 31, 2019					Total
	Drawn	Undrawn commitments	Repo-style transactions <sup>(1)</sup>	Derivative financial instruments	Other off-balance-sheet items <sup>(2)</sup>	
<b>Retail</b>						
Residential mortgage	50,328	8,812	–	–	–	59,140
Qualifying revolving retail	2,540	3,046	–	–	–	5,586
Other retail	14,258	1,911	–	–	20	16,189
	<b>67,126</b>	<b>13,769</b>	<b>–</b>	<b>–</b>	<b>20</b>	<b>80,915</b>
<b>Non-retail</b>						
Corporate	56,002	20,527	21,524	1	4,103	102,157
Sovereign	31,308	5,222	36,208	190	148	73,076
Financial institutions	5,200	425	97,423	1,966	629	105,643
	<b>92,510</b>	<b>26,174</b>	<b>155,155</b>	<b>2,157</b>	<b>4,880</b>	<b>280,876</b>
<b>Trading portfolio</b>	–	–	–	12,015	–	12,015
<b>Securitization</b>	1,166	–	–	–	3,598	4,764
<b>Total – Gross credit risk</b>	<b>160,802</b>	<b>39,943</b>	<b>155,155</b>	<b>14,172</b>	<b>8,498</b>	<b>378,570</b>
<b>Standardized Approach</b>	17,166	601	28,571	1,951	119	48,408
<b>AIRB Approach</b>	143,636	39,342	126,584	12,221	8,379	330,162
<b>Total – Gross credit risk</b>	<b>160,802</b>	<b>39,943</b>	<b>155,155</b>	<b>14,172</b>	<b>8,498</b>	<b>378,570</b>

(1) Securities purchased under reverse repurchase agreements and sold under repurchase agreements as well as securities loaned and borrowed.

(2) Letters of guarantee, documentary letters of credit and securitized assets that represent the Bank's commitment to make payments in the event that an obligor cannot meet its financial obligations to third parties.

## Market Risk

Market risk is the risk of losses arising from movements in market prices. Market risk comes from a number of factors, particularly changes to market variables such as interest rates, credit spreads, exchange rates, equity prices, commodity prices and implied volatilities. The Bank is exposed to market risk through its participation in trading, investment and asset/liability management activities. Trading activities involve taking positions, on various instruments such as bonds, shares, currencies, commodities or derivative financial instruments. The Bank is exposed to non-trading market risk through its asset/liability management and investment portfolios.

Because of COVID-19 and its impact on global and local economies, the Bank faces a volatile and challenging environment. This exceptional situation has led to significant changes in the overall market environment, including low interest rates, declining stock markets, and falling oil prices.

The trading portfolios include positions in financial instruments and commodities held either with trading intent or to hedge other elements of the trading book. Positions held with trading intent are those held for short-term resale and/or with the intent of taking advantage of actual or expected short-term price movements or to lock in arbitrage profits. These portfolios target one of the following objectives: market making, liquidating positions for clients or selling financial products to clients.

Non-trading portfolios include financial instruments intended to be held to maturity as well as those held for daily cash management or for the purpose of maintaining targeted returns or ensuring asset and liability management.

### Governance

A market risk management policy governs global market risk management across the Bank's units and subsidiaries that are exposed to this type of risk. It is approved by the GRC. The policy sets out the principles for managing market risk and the framework that defines risk measures, control and monitoring activities; sets market risk limits; and reports on breaches.

The Financial Markets Risk Committee oversees all Financial Markets segment risks that could adversely affect the Bank's results, liquidity, or capital. This committee also oversees the Financial Markets segment's risk framework to ensure that controls are in place to contain risk in accordance with the Bank's risk appetite framework.

Market risk limits ensure the link and coherence between the Bank's market risk appetite targets and the day-to-day market risk management by all parties involved, notably senior management, business lines and market risk sector in its independent control function. The Bank's monitoring and reporting process consists of comparing market risk exposure to alert levels and market risk limits determined for all limit authorization and approval levels.

### Assessing Market Risk

The Risk Management Group uses a variety of risk measures to estimate the size of potential losses under more or less severe scenarios, and using both short-term and long-term time horizons. For short-term horizons, the Bank's risk measures include Value-at-Risk (VaR), Stressed VaR (SVaR), and sensitivity metrics. For long-term horizons or sudden significant market moves, including those due to a lack of market liquidity, the risk measures include stress testing across an extensive range of scenarios.

#### VaR and SVaR Models

VaR is a statistical measure of risk that is used to quantify market risks by activity and by risk type. VaR is defined as the maximum loss at a specific confidence level over a certain horizon under normal market conditions. The VaR method has the advantage of providing a uniform measurement of financial instrument-related market risks based on a single statistical confidence level and time horizon.

For VaR, the Bank uses a historical price distribution to compute the probable loss levels at the 99% confidence level, using a two-year history of daily time series of risk factor changes. VaR is the maximum daily loss the Bank could incur, in 99 cases out of 100, in a given portfolio. In other words, the loss could exceed that amount in only one out of 100 cases.

The trading VaR is measured by assuming a holding period of one day for ongoing market risk management and a 10-day holding period for regulatory capital purposes. VaR is calculated on a daily basis both for major classes of financial instruments (including derivative financial instruments) and all trading portfolios in the Financial Markets segment and the Bank's Global Funding and Treasury Group.

In addition to the one-day trading VaR, the Bank calculates a trading SVaR, which is a statistical measure of risk that replicates the VaR calculation method but uses, instead of a two-year history of risk factor changes, a 12-month data period corresponding to a continuous period of significant financial stress that is relevant in terms of the Bank's portfolios.

VaR methodology techniques are well suited to measure risks under normal market conditions. VaR metrics are most appropriate as a risk measure for trading positions in liquid financial markets. However, there are limitations in measuring risks with this method when extreme and sudden market risk events occur, since they are likely to underestimate the Bank's market risk. VaR methodology limitations include the following:

- past changes in market risk factors may not always produce accurate predictions of the distribution and correlations of future market movements;
- a VaR with a daily time horizon does not fully capture the market risk of positions that cannot be liquidated or hedged within one day;
- the market risk factor historical database used for VaR calculation may not reflect potential losses that could occur under unusual market conditions (e.g., periods of extreme illiquidity) relative to the historical period used for VaR estimates;
- the use of a 99% VaR confidence level does not reflect the extent of potential losses beyond that percentile.

Given the limitations of VaR, this measure represents only one component of the Bank's risk management oversight, which also incorporates, among other measures, stress testing, sensitivity analysis, concentration and liquidity limits and analysis.

The Bank also conducts backtesting of the VaR model. It consists of comparing the profits and losses to the statistical VaR measure. Backtesting is essential to verifying the VaR model's capacity to adequately forecast the maximum risk of market losses and thus validate, retroactively, the quality and accuracy of the results obtained using the model. If the backtesting results present material discrepancies, the VaR model could be revised in accordance with the Bank's model risk management framework. All market risk models and their performance are subject to periodic independent validation by the model vetting group.

### **Controlling Market Risk**

A comprehensive set of limits is applied to measures of market risk, and these limits are monitored and reported on a regular basis. Instances when limits are exceeded are reported to the appropriate management level. The risk profiles of our operations remain consistent with its risk appetite and the resulting limits, and are monitored and reported to traders, management of the applicable business unit, senior executives and Board committees.

The Bank also uses economic capital for market risk as an indicator for risk appetite and limits setting. This indicator measures the amount of capital that is required to absorb unexpected losses due to market risk events over a one-year horizon and with a determined confidence level. For additional information on economic capital, see the Capital Management section of this MD&A.

The following tables provide a breakdown of the Bank's Consolidated Balance Sheet into assets and liabilities by those that carry market risk and those that do not carry market risk, distinguishing between trading positions whose main risk measures are VaR and SVaR and non-trading positions that use other risk measures.

### Reconciliation of Market Risk With Consolidated Balance Sheet Items

(millions of Canadian dollars)		As at October 31, 2020			
	Balance sheet	Market risk measures		Not subject to market risk	Non-traded risk primary risk sensitivity
		Trading <sup>(1)</sup>	Non-Trading <sup>(2)</sup>		
<b>Assets</b>					
Cash and deposits with financial institutions	29,142	617	12,799	15,726	Interest rate <sup>(3)</sup>
Securities					
At fair value through profit or loss	78,326	75,279	3,047	–	Interest rate <sup>(3)</sup> and equity <sup>(4)</sup>
At fair value through other comprehensive income	12,726	–	12,726	–	Interest rate <sup>(3)</sup> and equity <sup>(5)</sup>
At amortized cost	11,079	–	11,079	–	Interest rate <sup>(3)</sup>
Securities purchased under reverse repurchase agreements and securities borrowed	14,512	–	14,512	–	Interest rate <sup>(3)(6)</sup>
Loans and acceptances, net of allowances	164,740	7,545	157,195	–	Interest rate <sup>(3)</sup>
Derivative financial instruments	13,422	13,207	215	–	Interest rate <sup>(7)</sup> and exchange rate <sup>(7)</sup>
Defined benefit asset	126	–	126	–	Other <sup>(8)</sup>
Other	7,552	–	–	7,552	
	<b>331,625</b>	<b>96,648</b>	<b>211,699</b>	<b>23,278</b>	
<b>Liabilities</b>					
Deposits	215,878	9,998	205,880	–	Interest rate <sup>(3)</sup>
Acceptances	6,866	–	6,866	–	Interest rate <sup>(3)</sup>
Obligations related to securities sold short	16,368	16,368	–	–	
Obligations related to securities sold under repurchase agreements and securities loaned	33,859	–	33,859	–	Interest rate <sup>(3)(6)</sup>
Derivative financial instruments	12,923	12,300	623	–	Interest rate <sup>(7)</sup> and exchange rate <sup>(7)</sup>
Liabilities related to transferred receivables	22,855	6,135	16,720	–	Interest rate <sup>(3)</sup>
Defined benefit liability	201	–	201	–	Other <sup>(8)</sup>
Other	5,517	–	64	5,453	Interest rate <sup>(3)</sup>
Subordinated debt	775	–	775	–	Interest rate <sup>(3)</sup>
	<b>315,242</b>	<b>44,801</b>	<b>264,988</b>	<b>5,453</b>	

- (1) Trading positions whose risk measures are VaR and SVaR. For additional information, see the tables on the following pages that show the VaR and SVaR distributions of the trading portfolios by risk category as well as their correlation effect.
- (2) Non-trading positions that use other risk measures.
- (3) For additional information, see the tables on the following pages that show the VaR and SVaR distributions of the trading portfolios by risk category and their correlation effect as well as the interest rate sensitivity tables.
- (4) For additional information, see Note 6 to the consolidated financial statements.
- (5) The fair value of equity securities designated at fair value through other comprehensive income is presented in Notes 3 and 6 to the consolidated financial statements.
- (6) These instruments are recorded at amortized cost and are subject to credit risk for capital management purposes. For trading-related transactions with maturities of more than one day, interest rate risk is included in the VaR and SVaR measures.
- (7) For additional information, see Notes 16 and 17 to the consolidated financial statements.
- (8) For additional information, see Note 23 to the consolidated financial statements.

(millions of Canadian dollars)		As at October 31, 2019			
	Balance sheet	Market risk measures		Not subject to market risk	Non-traded risk primary risk sensitivity
		Trading <sup>(1)</sup>	Non-trading <sup>(2)</sup>		
<b>Assets</b>					
Cash and deposits with financial institutions	13,698	579	12,609	510	Interest rate <sup>(3)</sup>
Securities					
At fair value through profit or loss	61,823	58,170	3,653	–	Interest rate <sup>(3)</sup> and equity <sup>(4)</sup>
At fair value through other comprehensive income	10,648	–	10,648	–	Interest rate <sup>(3)</sup> and equity <sup>(5)</sup>
At amortized cost	9,755	–	9,755	–	Interest rate <sup>(3)</sup>
Securities purchased under reverse repurchase agreements and securities borrowed	17,723	–	17,723	–	Interest rate <sup>(3)(6)</sup>
Loans and acceptances, net of allowances	153,251	6,060	147,191	–	Interest rate <sup>(3)</sup>
Derivative financial instruments	8,129	7,134	995	–	Interest rate <sup>(7)</sup> and exchange rate <sup>(7)</sup>
Defined benefit asset	38	–	38	–	Other <sup>(8)</sup>
Other	6,393	–	–	6,393	
	281,458	71,943	202,612	6,903	
<b>Liabilities</b>					
Deposits	189,566	9,869	179,697	–	Interest rate <sup>(3)</sup>
Acceptances	6,893	–	6,893	–	Interest rate <sup>(3)</sup>
Obligations related to securities sold short	12,849	12,849	–	–	
Obligations related to securities sold under repurchase agreements and securities loaned	21,900	–	21,900	–	Interest rate <sup>(3)(6)</sup>
Derivative financial instruments	6,852	6,123	729	–	Interest rate <sup>(7)</sup> and exchange rate <sup>(7)</sup>
Liabilities related to transferred receivables	21,312	5,165	16,147	–	Interest rate <sup>(3)</sup>
Defined benefit liability	374	–	374	–	Other <sup>(8)</sup>
Other	5,803	24	911	4,868	Interest rate <sup>(3)</sup>
Subordinated debt	773	–	773	–	Interest rate <sup>(3)</sup>
	266,322	34,030	227,424	4,868	

- (1) Trading positions whose risk measures are VaR and SVaR. For additional information, see the tables on the following pages that show the VaR and SVaR distributions of the trading portfolios by risk category as well as their correlation effect.
- (2) Non-trading positions that use other risk measures.
- (3) For additional information, see the tables on the following pages that show the VaR and SVaR distributions of the trading portfolios by risk category and their correlation effect as well as the interest rate sensitivity tables.
- (4) For additional information, see Notes 6 to the consolidated financial statements.
- (5) The fair value of equity securities designated at fair value through other comprehensive income is presented in Notes 3 and 6 to the consolidated financial statements.
- (6) These instruments are recorded at amortized cost and are subject to credit risk for capital management purposes. For trading-related transactions with maturities of more than one day, interest rate risk is included in the VaR and SVaR measures.
- (7) For additional information, see Notes 16 and 17 to the consolidated financial statements.
- (8) For additional information, see Note 23 to the consolidated financial statements.

### Trading Activities

The first table below shows the VaR distribution of trading portfolios by risk category as well as their correlation effect. The second table on the next page shows the SVaR distribution, i.e., the VaR of the Bank's current portfolios obtained following the calibration of risk factors over a 12-month stress period.

### VaR of Trading Portfolios by Risk Category<sup>(1)\*</sup>

Year ended October 31 (millions of Canadian dollars)	2020				2019			
	Low	High	Average	Period end	Low	High	Average	Period end
Interest rate	(4.0)	(15.6)	(7.4)	(8.0)	(4.0)	(7.1)	(5.3)	(4.4)
Foreign exchange	(0.3)	(2.7)	(0.9)	(1.5)	(0.4)	(1.8)	(0.8)	(1.3)
Equity	(2.7)	(17.5)	(8.3)	(8.0)	(2.8)	(6.0)	(3.8)	(3.8)
Commodity	(0.6)	(2.1)	(1.0)	(0.8)	(0.5)	(1.5)	(1.0)	(1.2)
Correlation effect <sup>(2)</sup>	n.m.	n.m.	8.0	9.1	n.m.	n.m.	4.8	4.4
<b>Total trading VaR</b>	<b>(4.6)</b>	<b>(19.6)</b>	<b>(9.6)</b>	<b>(9.2)</b>	<b>(3.8)</b>	<b>(8.9)</b>	<b>(6.1)</b>	<b>(6.3)</b>

n.m. Computation of a correlation effect for the high and low is not meaningful, as highs and lows may occur on different days and be attributable to different types of risk.

- (1) Amounts are presented on a pre-tax basis and represent one-day VaR using a 99% confidence level.
- (2) The total trading VaR is less than the sum of the individual risk factor VaR results due to the correlation effect.

### SVaR of Trading Portfolios by Risk Category<sup>(1)\*</sup>

Year ended October 31

(millions of Canadian dollars)

	2020				2019			
	Low	High	Average	Period end	Low	High	Average	Period end
Interest rate	(4.7)	(23.2)	(13.5)	(15.1)	(11.8)	(26.6)	(16.4)	(15.1)
Foreign exchange	(0.3)	(9.1)	(1.3)	(1.6)	(0.6)	(4.1)	(1.4)	(2.0)
Equity	(4.8)	(36.1)	(13.1)	(8.4)	(4.5)	(14.4)	(7.3)	(8.9)
Commodity	(0.5)	(2.7)	(1.4)	(0.6)	(1.1)	(4.0)	(2.1)	(2.7)
Correlation effect <sup>(2)</sup>	n.m.	n.m.	12.2	7.8	n.m.	n.m.	14.2	13.4
<b>Total trading SVaR</b>	<b>(6.9)</b>	<b>(39.9)</b>	<b>(17.1)</b>	<b>(17.9)</b>	<b>(9.0)</b>	<b>(17.8)</b>	<b>(13.0)</b>	<b>(15.3)</b>

n.m. Computation of a correlation effect for the high and low is not meaningful, as highs and lows may occur on different days and be attributable to different types of risk.

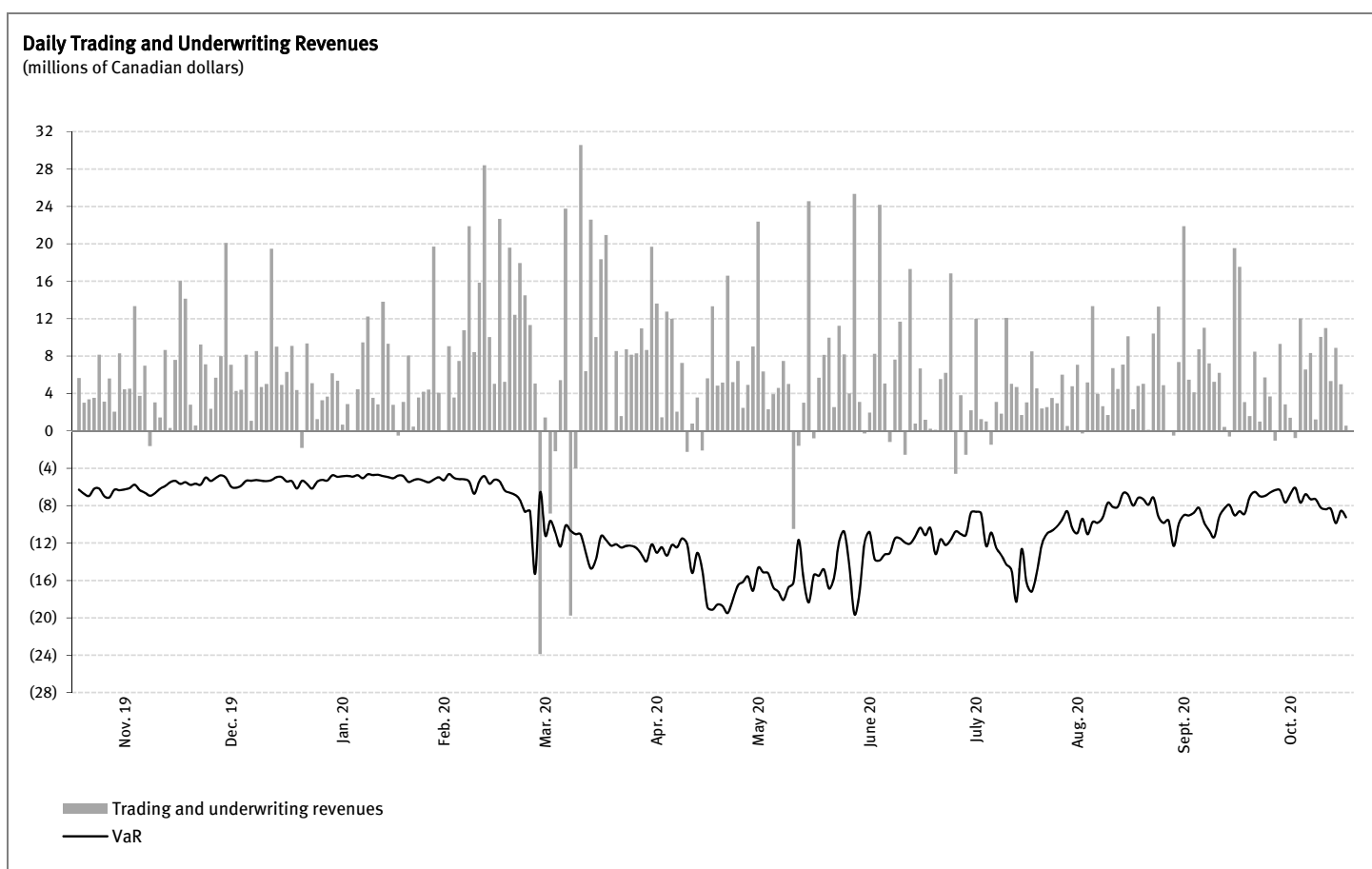
(1) Amounts are presented on a pre-tax basis and represent one-day SVaR using a 99% confidence level.

(2) The total trading SVaR is less than the sum of the individual risk factor SVaR results due to the correlation effect.

The average total trading VaR increased from \$6.1 million for fiscal year 2019 to \$9.6 million for fiscal 2020. The average total trading SVaR was also up, rising to \$17.1 million in fiscal 2020 from \$13.0 million in fiscal 2019. These increases are mainly driven by an increase of equity risk caused by more pronounced market volatility related to the COVID-19 crisis in the second quarter of 2020, which also resulted in new tail scenarios being added to the two-year VaR history window. Moreover, in the third quarter of 2020, the Bank changed the SVaR simulation period to encompass the COVID-19 crisis.

The revenues generated by trading activities are compared with VaR as a backtesting assessment of the appropriateness of this risk measure as well as the financial performance of trading activities relative to the risk undertaken.

The table below shows daily trading and underwriting revenues and VaR. Daily trading and underwriting revenues were positive on 90% of the days for the year ended October 31, 2020. Daily trading and underwriting losses in excess of \$1 million were recorded on 17 days, and on two of those days, the losses exceeded the VaR. Those two days of losses occurred in March 2020 as a result of significant market volatility caused by the COVID-19 crisis.



### Stress Testing and Crisis Scenarios

Stress testing is a risk management technique that consists of estimating potential losses under abnormal market conditions and risk factor movements. This technique enhances transparency by exploring a range of severe but plausible events.

These crises scenarios simulate the results that the portfolios would generate if the extreme scenarios in question were to occur. The Bank's stress testing framework, which is applied to all positions generating market risk currently comprises the following range of different stress test scenarios:

- Historical scenarios based on past major disruption situations
- Hypothetical scenarios designed to be forward-looking in the face of potential market stresses
- Scenarios specific to asset classes, including:
  - sharp parallel increases/decreases in interest rates; non-parallel movements (flattening and steepening) and increases/decreases in credit spreads;
  - sharp stock market crash coupled with a significant increase in volatility; increase in stock prices associated with less volatility; increase in the volatility of the term structure coupled with a decrease in stock prices;
  - significant increases/decreases in commodity prices coupled with increases/decreases in volatility; short-term and long-term increases/decreases in commodity prices;
  - depreciation/appreciation of the U.S. dollar and of other currencies relative to the Canadian dollar.

### Structural Interest Rate Risk

As part of its core banking activities, such as lending and deposit taking, the Bank is exposed to interest rate risk. Interest rate risk is the potential negative impact of interest rate fluctuations on the Bank's annual net interest income and economic value of equity. Activities related to hedging, investments and term funding are also exposed to structural interest rate risk. The Bank's main exposure to interest rate risk stems from a variety of sources:

- yield curve risk, which refers to changes in the level, slope and shape of the yield curve;
- repricing risk, which arises from timing differences in the maturity and repricing of on- and off-balance-sheet items;
- options risk, either implicit (e.g., prepayment of mortgage loans) or explicit (e.g., capped mortgages and rate guarantees) in balance sheet products;
- basis risk that is caused by imperfect correlation between different yield curves.

The Bank's exposure to structural interest rate risk is assessed and controlled mostly through the impact of stress scenarios and market shocks on the economic value of the Bank's equity and on 12-month net interest income projections. These metrics are based on cash flow projections prepared using a number of assumptions. Specifically, the Bank has developed key assumptions on loan prepayment levels, deposit redemptions, and the behaviour of customers that were granted rate guarantees. These specific assumptions were developed based on historical analyses and are reviewed frequently.

Funds transfer pricing is a process by which the Bank's business units are charged or paid according to their use or supply of funding. Through this mechanism, all funding activities as well as the interest rate risk and liquidity risk associated with those activities are centralized in the Global Funding and Treasury Group.

Active management of structural interest rate risk can significantly enhance the Bank's profitability and add to shareholder value. The Bank's goal is to maximize its economic value of equity and annual net interest income considering the Bank's risk appetite. This has to be accomplished within prescribed risk limits and is done primarily by implementing a policy framework approved by the Board, which establishes a risk tolerance threshold, monitoring structures controlled by the various committees, risk indicators, reporting procedures, delegation of responsibilities and segregation of duties. The Bank also prepares an annual funding plan that incorporates the expected growth of assets and liabilities.

### Governance

Management of the Bank's structural interest rate risk is mandated to the Global Funding and Treasury Group. In this role, the executives and personnel of this group are responsible for the day-to-day management of the risks inherent to structural interest rate risk hedging decisions and operations. They act as the primary effective challenge function with respect to the execution of these activities. The Office of the President approves and endorses the structural interest rate exposure and strategies on the recommendation of the Global Funding and Treasury Group. The Risk Management Group is responsible for assessing structural interest rate risk, monitoring activities, and ensuring compliance with the structural interest rate risk policy. The Risk Management Group ensures that an appropriate risk management framework is in place and ensures compliance with the risk appetite framework and policy. Structural interest rate risk supervision is mainly provided by the Financial Markets Risk Committee. This committee reviews exposure to structural interest rate risk, the use of limits, and changes made to assumptions.

### Stress Testing and Crisis Scenarios

Stress tests are performed on a regular basis to assess the impact of various scenarios on annual net interest income and on the economic value of equity in order to guide the management of structural interest rate risk. Crisis scenarios are performed where the yield curve level, slope and shape are shocked. Yield curve basis and volatility scenarios are also performed. All risk factors mentioned above are covered by specific scenarios and have Board-approved or GRC-approved risk limits.

Dynamic simulation is also used to project the Bank's future net interest income, future economic value and future structural interest rate risk exposure. These simulations project cash flows of assets, liabilities and off-balance-sheet products over a given investment horizon. Given their dynamic nature, they encompass assumptions pertaining to changes in volume, client term preference, prepayments of deposits and loans, and the yield curve.

The following tables present the potential before-tax impact of an immediate and sustained 100-basis-point increase or of an immediate and sustained 25-basis-point decrease in interest rates on the economic value of equity and on the net interest income of the Bank's non-trading portfolios for the next 12 months, assuming no further hedging is undertaken. In the current environment of very low interest rates, the Bank believes that a sensitivity analysis reflecting an immediate and sustained 25-basis-point decrease in interest rates provides more relevant information.

### Interest Rate Sensitivity – Non-Trading Activities (Before Tax)\*

As at October 31

(millions of Canadian dollars)

	2020			2019		
	Canadian dollar	Other currencies	Total	Canadian dollar	Other currencies	Total
<b>Impact on equity</b>						
100-basis-point increase in the interest rate	(239)	15	(224)	(178)	40	(138)
25-basis-point decrease in the interest rate	49	(4)	45	54	(1)	53
<b>Impact on net interest income</b>						
100-basis-point increase in the interest rate	(31)	21	(10)	(26)	42	16
25-basis-point decrease in the interest rate	5	(5)	–	19	(2)	17

### Investment Governance

The Bank has created securities portfolios in liquid and less liquid securities for strategic, long-term investment and liquidity management purposes. These investments carry market risk, credit risk, liquidity risk and concentration risk.

The investment governance sets out the guiding principles and general management standards that must be followed by all those who manage portfolios of these securities included in the portfolios of the Bank and its subsidiaries. Under this investment governance, business units that are active in managing these types of portfolios must adopt internal investment policies that set, among other things, targets and limits for the allocation of assets in the portfolios concerned and internal approval mechanisms. The primary objective is to reduce concentration risk by industry, issuer, country, type of financial instrument and credit quality.

Overall limits in value and in proportion to the Bank's equity are set on the outstanding amount of liquid preferred shares, liquid equity securities excluding preferred shares, and instruments classified as illiquid securities in the securities portfolios. The overall exposure to common shares with respect to an individual issuer and the total outstanding amount invested in private equity funds, for investment banking services, are also subject to limits. Restrictions are also set on investments defined as special. Lastly, the Bank has a specific strategic investment policy, approved by the Board, which defines strategic investments as purchases of business assets or acquisitions of significant interests in an entity for purposes of acquiring control or creating a long-term relationship.

### Structural Foreign Exchange Risk

The Bank's structural foreign exchange risk arises from investments in foreign operations denominated in currencies other than the Canadian dollar. This risk, predominantly in U.S. dollars, is measured by assessing the impact of currency fluctuations on net interest income and shareholders' equity. The Bank uses financial instruments (derivative and non-derivative) to hedge some of this risk. An adverse change in foreign exchange rates can also impact the Bank's capital ratios due to the amount of RWA denominated in a foreign currency. When the Canadian dollar depreciates relative to other currencies, unrealized translation gains on the Bank's net investments in foreign operations, net of related hedges, are reported in other comprehensive income in shareholders' equity. In addition, the Canadian-dollar equivalent of U.S.-dollar-denominated RWA and regulatory capital deductions increases. The reverse is true when the Canadian dollar appreciates relative to the U.S. dollar. The structural foreign exchange risk exposure is managed to ensure that the potential impacts on the capital ratios and net income are within tolerable limits set by risk policies.

## Liquidity and Funding Risk

Liquidity and funding risk is the risk that the Bank will be unable to honour daily cash and financial obligations without resorting to costly and untimely measures. Liquidity and funding risk arises when sources of funds become insufficient to meet scheduled payments under the Bank's commitments. Liquidity risk stems from mismatched cash flows related to assets and liabilities as well as the characteristics of certain products such as credit commitments and non-fixed-term deposits.

The Bank's primary objective as a financial institution is to manage liquidity such that it supports the Bank's business strategy and allows it to honour its commitments when they come due, even in extreme conditions. This is done primarily by implementing a policy framework approved by the Board, which establishes a risk appetite, monitoring structures controlled by various committees, risk indicators, reporting procedures, delegation of responsibilities and segregation of duties. The Bank also prepares an annual funding plan that incorporates the expected growth of assets and liabilities.

COVID-19 has affected overall economic and market conditions. The Bank is facing a challenging and volatile environment, but its sound liquidity and funding management is helping it maintain an optimal balance between its sources of cash and anticipated payments.

### Regulatory Environment

The Bank works closely with national and international regulators to implement regulatory liquidity standards. The Bank adapts its processes and policies to reflect the Bank's liquidity risk appetite towards these new requirements.

The *Liquidity Adequacy Requirements* are reviewed annually to reflect domestic and international regulatory changes. They constitute OSFI's proposed liquidity framework and include six chapters:

- overview;
- liquidity coverage ratio (LCR);
- net stable funding ratio (NSFR);
- net cumulative cash flow (NCCF);
- liquidity monitoring tools;
- intraday liquidity monitoring tools.

The LCR is used to ensure that banks can overcome severe short-term stress, while the NSFR is a structural ratio over a one-year horizon. The NCCF metric is defined as a monitoring tool that calculates a survival period. It is based on the assumptions of a stress scenario prescribed by OSFI that aims to represent a combined systemic and bank-specific crisis.

The Bank publishes the LCR on a quarterly basis. It is currently monitoring the NSFR ratio and will be compliant therewith as of the effective date of January 1, 2021. On April 11, 2019, OSFI published the final version of the *Net Stable Funding Ratio Disclosure Requirements* guideline, which sets out NSFR ratio disclosure requirements for D-SIBs. These requirements are applicable since January 1, 2020, but since OSFI introduced an additional year to implement the disclosure framework, they will take effect on January 1, 2021. On April 11, 2019, OSFI also issued a new version of its *Liquidity Adequacy Requirements* guideline, which came into effect on January 1, 2020. This version differs from the previous one and seeks to ensure that liquidity risk measuring and monitoring standards reflect current sound practices.

On March 27, 2020, OSFI took extraordinary measures in response to the operational difficulties caused by the spread of COVID-19. OSFI expects banks to draw on the unencumbered HQLA assets they hold within the liquidity coverage ratio (LCR) as a defense both against the potential onset of liquidity stress and during a period of liquidity stress. OSFI has also provided guidance on the treatment of new government facilities in the calculation of regulatory liquidity ratios. In addition, the Bank of Canada has taken more comprehensive measures to ensure that the financial system continues to play its role of providing credit where it is needed. For more information, see the section "COVID-19 Pandemic – Regulatory Flexibility Measures" of this MD&A on pages 20 and 21.

On April 9, 2020, OSFI issued a press release announcing regulatory flexibility measures related to COVID-19 efforts. The release refers to delaying the implementation of changes to specific regulatory returns to limit the impact on institutions, while ensuring that important data continues to be collected.

The Bank continues to closely monitor regulatory developments and actively participates in various consultation processes.

## **Governance**

The Global Funding and Treasury Group is responsible for managing liquidity and funding risk. Although the day-to-day and strategic management of risks associated with liquidity, funding and pledging activities is assumed by the Global Funding and Treasury Group, the Risk Management Group is responsible for assessing liquidity risk and overseeing compliance with the resulting policy. The Risk Management Group ensures that an appropriate risk management framework is in place and ensures compliance with the risk appetite framework. This structure provides an independent oversight and effective challenge for the liquidity, funding and pledging decisions, strategy, and exposure.

The Bank's Liquidity, Funding and Pledging Governance policy requires review and approval by the RMC, based on recommendations from the GRC. The Bank has established two levels of limits. The first level of limits encompasses the Bank's overall liquidity position and is Board approved, while the second level of limits is more focused on specific elements of liquidity risk and is approved by the GRC. The Board not only approves the supervision of day-to-day risk management and governance but also backup plans in anticipation of emergency and liquidity crisis situations. If a limit has to be revised, the Risk Management Group with the support of the Global Funding and Treasury Group, submits the proposed revision to the GRC. If the latter approves the request, it is presented to the Board for approval only if a level-one limit is concerned.

Oversight of liquidity risk is entrusted mainly to the Financial Markets Risk Committee, whose members include representatives of the Financial Markets segment, the Global Funding and Treasury Group, the Risk Management Group, and Internal Audit.

The Bank also has policies and guidelines governing its own collateral pledged to counterparties, given the potential impact of such asset transfers on its liquidity. In accordance with its Liquidity, Funding & Pledging Policy, the Bank conducts simulations of potential counterparty collateral claims under the CSAs in effect in the event of a Bank downgrade or other unlikely occurrences. The simulations are based on various Bank downgrading scenarios or market value fluctuations of transactions covered by CSAs.

Through the Financial Markets Risk Committee, the Risk Management Group regularly reports changes in liquidity, funding and pledging indicators and compliance with regulatory, Board and GRC approved limits. If control reports indicate non-compliance with the limits and, generally, deterioration of liquidity indicators, the Global Funding and Treasury Group takes remedial action. According to the escalation process, problematic situations are reported to management and to the GRC and the RMC. An executive report on the Bank's liquidity and funding risk management, which describes the Bank's liquidity position and informs the Board of non-compliance with the limits and other rules observed during the reference period as well as remedial action taken, is submitted quarterly to the RMC.

## **Liquidity Management**

The Bank performs liquidity management, funding and pledging operations not only from its head office and regional offices in Canada, but also through certain foreign centres. Although the volume of such operations abroad represents a sizable portion of global liquidity management, the Bank's liquidity management is centralized. By organizing liquidity management, funding and pledging activities within the Global Funding and Treasury Group, the Bank can better coordinate enterprise-wide funding and risk monitoring activities. All internal funding transactions between Bank entities are controlled by the Global Funding and Treasury Group.

This centralized structure streamlines the allocation and control of liquidity management, funding and pledging limits. Nonetheless, the Liquidity, Funding and Pledging Governance policy contains special provisions for the financial centres that are most active in terms of institutional funding and sets limits and monitoring thresholds for secured and unsecured short-term funding, both in absolute value and materiality.

The Bank's funds transfer pricing system prices liquidity by allocating the cost or income to the various business segments. Liquidity costs are allocated to liquidity-intensive activities, mainly long-term loans, and commitments to extend credit and less liquid securities as well as strategic investments. The liquidity compensation is credited to the suppliers of funds, primarily funding in the form of stable deposits from the Bank's distribution network.

Short-term day-to-day funding decisions are based on a daily cumulative net cash position, which is controlled using liquidity ratio limits. Among these ratios and metrics, the Bank pays particular attention to the funds obtained on the wholesale market and to cumulative cash flows over various time horizons.

Moreover, the Bank's collateral pledging activities are monitored in relation to the different limits set by the Bank and are subject to monthly stress tests using simulations. In particular, the Bank uses various scenarios to estimate the potential amounts of additional collateral that would be required in the event of a downgrade to the Bank's credit rating.

Liquidity risk can be assessed in many different ways using different liquidity indicators. One of the key monitoring tools of liquidity risk is the Bank's survival period based on contractual maturity and behavioural assumptions applied to balance sheet items as well as off-balance-sheet commitments.

#### Stress Testing and Crisis Scenarios

Using various simulations, survival period measures the number of months it would take to completely utilize the Bank's liquid assets if the Bank were to lose deposits prematurely or if funds from wholesale markets were not renewed at maturity. It is measured monthly using three scenarios, which were developed to assess sensitivity to a Bank-specific and/or systemic crisis. Deposit loss simulations are carried out based on their degree of stability, while the value of certain assets is encumbered by an amount reflecting their readiness for liquidation in a crisis. Appropriate scenarios and limits are included in the Bank's liquidity, funding and pledging governance policy.

The Bank maintains an up-to-date, comprehensive financial contingency and crisis recovery plan that describes the measures to be taken in the event of a critical liquidity situation. This plan is reviewed and approved annually by the Board as part of business continuity and recovery planning. For additional information, see the Regulatory Compliance Risk section of this MD&A.

#### Liquidity Risk Appetite

The Bank monitors and manages its risk appetite through liquidity limits, ratios and stress tests. The Bank's liquidity risk appetite is based on the following three principles:

- ensure the Bank has a sufficient amount of unencumbered liquid assets to cover its financial requirements, in both normal and stressed conditions;
- ensure the Bank keeps a liquidity buffer above the minimum regulatory requirement;
- ensure the Bank maintains diversified and stable sources of funding.

#### Liquid Assets

To protect depositors and creditors from unexpected crisis situations, the Bank holds a portfolio of unencumbered liquid assets that can be readily liquidated to meet financial obligations. The majority of unencumbered liquid assets are held in Canadian or U.S. dollars. Moreover, all assets that can be quickly monetized are considered liquid assets. The Bank's liquidity reserves do not factor in the availability of the central bank's emergency liquidity facilities. The following tables provide information on the Bank's encumbered and unencumbered assets.

## Liquid Asset Portfolio

As at October 31

(millions of Canadian dollars)	2020					2019
	Bank-owned liquid assets <sup>(1)</sup>	Liquid assets received <sup>(2)</sup>	Total liquid assets	Encumbered liquid assets <sup>(3)</sup>	Unencumbered liquid assets	Unencumbered liquid assets
<b>Cash and deposits with financial institutions</b>	29,142	–	29,142	5,871	23,271	9,596
<b>Securities</b>						
Issued or guaranteed by the Canadian government, U.S. Treasury, other U.S. agencies and other foreign governments	31,377	20,200	51,577	30,474	21,103	23,455
Issued or guaranteed by Canadian provincial and municipal governments	15,612	7,514	23,126	15,755	7,371	6,145
Other debt securities	5,722	1,440	7,162	1,830	5,332	5,581
Equity securities	49,420	31,406	80,826	47,480	33,346	26,968
<b>Loans</b>						
Securities backed by insured residential mortgages	9,510	–	9,510	5,560	3,950	2,926
<b>As at October 31, 2020</b>	<b>140,783</b>	<b>60,560</b>	<b>201,343</b>	<b>106,970</b>	<b>94,373</b>	
As at October 31, 2019	103,346	55,310	158,656	83,985		74,671

As at October 31

(millions of Canadian dollars)	2020	2019
<b>Unencumbered liquid assets by entity</b>		
National Bank (parent)	47,135	30,380
Domestic subsidiaries	21,928	14,815
Foreign subsidiaries and branches	25,310	29,476
	<b>94,373</b>	<b>74,671</b>

As at October 31

(millions of Canadian dollars)	2020	2019
<b>Unencumbered liquid assets by currency</b>		
Canadian dollar	50,568	39,172
U.S. dollar	26,099	19,356
Other currencies	17,706	16,143
	<b>94,373</b>	<b>74,671</b>

## Liquid Asset Portfolio – Average<sup>(4)</sup>

Year ended October 31

(millions of Canadian dollars)	2020					2019
	Bank-owned liquid assets <sup>(1)</sup>	Liquid assets received <sup>(2)</sup>	Total liquid assets	Encumbered liquid assets <sup>(3)</sup>	Unencumbered liquid assets	Unencumbered liquid assets
<b>Cash and deposits with financial institutions</b>	24,650	–	24,650	4,866	19,784	8,491
<b>Securities</b>						
Issued or guaranteed by the Canadian government, U.S. Treasury, other U.S. agencies and other foreign governments	30,704	22,269	52,973	33,383	19,590	22,995
Issued or guaranteed by Canadian provincial and municipal governments	13,671	7,646	21,317	15,355	5,962	4,442
Other debt securities	6,343	2,014	8,357	2,387	5,970	4,885
Equity securities	44,845	32,926	77,771	46,616	31,155	26,360
<b>Loans</b>						
Securities backed by insured residential mortgages	8,637	–	8,637	5,056	3,581	3,150
<b>As at October 31, 2020</b>	<b>128,850</b>	<b>64,855</b>	<b>193,705</b>	<b>107,663</b>	<b>86,042</b>	
As at October 31, 2019	102,816	62,434	165,250	94,927		70,323

(1) Bank-owned liquid assets include assets for which there are no legal or geographic restrictions.

(2) Securities received as collateral with respect to securities financing and derivative transactions and securities purchased under reverse repurchase agreements and securities borrowed.

(3) In the normal course of its funding activities, the Bank pledges assets as collateral in accordance with standard terms. Encumbered liquid assets include assets used to cover short sales, obligations related to securities sold under repurchase agreements and securities loaned, guarantees related to security-backed loans and borrowings, collateral related to derivative financial instrument transactions, asset-backed securities and liquid assets legally restricted from transfers.

(4) The average is based on the sum of the end-of-period balances of the 12 months of the year divided by 12.

## Summary of Encumbered and Unencumbered Assets

(millions of Canadian dollars)	As at October 31, 2020					
	Encumbered assets <sup>(1)</sup>		Unencumbered assets		Total	Encumbered assets as % of total assets
	Pledged as collateral	Other <sup>(2)</sup>	Available as collateral	Other <sup>(3)</sup>		
Cash and deposits with financial institutions	344	5,527	23,271	–	29,142	1.8
Securities	34,979	–	67,152	–	102,131	10.5
Securities purchased under reverse repurchase agreements and securities borrowed	–	14,512	–	–	14,512	4.4
Loans and acceptances, net of allowances	37,556	–	3,950	123,234	164,740	11.3
Derivative financial instruments	–	–	–	13,422	13,422	–
Investments in associates and joint ventures	–	–	–	409	409	–
Premises and equipment	–	–	–	1,155	1,155	–
Goodwill	–	–	–	1,414	1,414	–
Intangible assets	–	–	–	1,434	1,434	–
Other assets	–	–	–	3,266	3,266	–
	<b>72,879</b>	<b>20,039</b>	<b>94,373</b>	<b>144,334</b>	<b>331,625</b>	<b>28.0</b>

(millions of Canadian dollars)	As at October 31, 2019					
	Encumbered assets <sup>(1)</sup>		Unencumbered assets		Total	Encumbered assets as % of total assets
	Pledged as collateral	Other <sup>(2)</sup>	Available as collateral	Other <sup>(3)</sup>		
Cash and deposits with financial institutions	143	3,959	9,596	–	13,698	1.4
Securities	24,950	–	57,276	–	82,226	8.9
Securities purchased under reverse repurchase agreements and securities borrowed	–	12,850	4,873	–	17,723	4.6
Loans and acceptances, net of allowances	31,835	–	2,926	118,490	153,251	11.3
Derivative financial instruments	–	–	–	8,129	8,129	–
Investments in associates and joint ventures	–	–	–	385	385	–
Premises and equipment	–	–	–	490	490	–
Goodwill	–	–	–	1,412	1,412	–
Intangible assets	–	–	–	1,406	1,406	–
Other assets	–	–	–	2,738	2,738	–
	<b>56,928</b>	<b>16,809</b>	<b>74,671</b>	<b>133,050</b>	<b>281,458</b>	<b>26.2</b>

- (1) In the normal course of its funding activities, the Bank pledges assets as collateral in accordance with standard terms. Encumbered assets include assets used to cover short sales, obligations related to securities sold under repurchase agreements and securities loaned, guarantees related to security-backed loans and borrowings, collateral related to derivative financial instrument transactions, asset-backed securities, residential mortgage loans securitized and transferred under the Canada Mortgage Bond program, assets held in consolidated trusts supporting the Bank's funding activities and mortgage loans transferred under covered bond programs.
- (2) Other encumbered assets include assets for which there are restrictions and therefore cannot be used for collateral or funding purposes as well as assets used to cover short sales.
- (3) Other unencumbered assets are assets that cannot be used for collateral or funding purposes in their current form. This category includes assets that are potentially eligible as funding program collateral (e.g., mortgages insured by the Canada Mortgage and Housing Corporation that can be securitized into mortgage-backed securities under the *National Housing Act* (Canada)).

### Liquidity Coverage Ratio (LCR)

The LCR was introduced primarily to ensure that banks could withstand periods of severe short-term stress. OSFI has been requiring Canadian banks to maintain a minimum LCR of 100%. An LCR above 100% ensures that banks are holding sufficient high-quality liquid assets (HQLA) to cover net cash outflows given a severe, 30-day liquidity crisis. The assumptions underlying the LCR scenario were established by the BCBS and OSFI.

The following table provides average LCR data calculated using the daily figures in the quarter. For the quarter ended October 31, 2020, the Bank's average LCR was 161%, well above the 100% regulatory requirement and demonstrating the Bank's solid liquidity position.

### LCR Disclosure Requirements<sup>(1)</sup>

(millions of Canadian dollars)	For the quarter ended		
	Total unweighted value <sup>(2)</sup> (average)	October 31, 2020 Total weighted value <sup>(3)</sup> (average)	July 31, 2020 Total weighted value <sup>(3)</sup> (average)
<b>High-quality liquid assets (HQLA)</b>			
1 Total HQLA	n.a.	68,118	65,250
<b>Cash outflows</b>			
2 Retail deposits and deposits from small business customers, of which:	54,014	4,455	4,274
3 Stable deposits	26,554	797	765
4 Less stable deposits	27,460	3,658	3,509
5 Unsecured wholesale funding, of which:	93,815	51,234	48,995
6 Operational deposits (all counterparties)	17,419	4,205	3,756
7 Non-operational deposits (all counterparties)	68,173	38,806	36,370
8 Unsecured debt	8,223	8,223	8,869
9 Secured wholesale funding	n.a.	16,058	13,500
10 Additional requirements, of which:	43,352	12,056	11,881
11 Outflows related to derivative exposures and other collateral requirements	12,462	6,154	6,391
12 Outflows related to loss of funding on secured debt securities	1,464	1,464	1,258
13 Backstop liquidity and credit enhancement facilities and commitments to extend credit	29,426	4,438	4,232
14 Other contractual commitments to extend credit	3,081	1,497	925
15 Other contingent commitments to extend credit	93,133	1,579	1,584
16 Total cash outflows	n.a.	86,879	81,159
<b>Cash inflows</b>			
17 Secured lending (e.g., reverse repos)	104,438	16,953	18,082
18 Inflows from fully performing exposures	12,283	7,922	7,766
19 Other cash inflows	19,505	19,505	14,190
20 Total cash inflows	136,226	44,380	40,038
		<b>Total adjusted value<sup>(4)</sup></b>	<b>Total adjusted value<sup>(4)</sup></b>
21 Total HQLA	n.a.	68,118	65,250
22 Total net cash outflows	n.a.	42,499	41,121
23 Liquidity coverage ratio (%) <sup>(5)</sup>	n.a.	161 %	161 %

n.a. Not applicable

(1) OSFI prescribed a table format in order to standardize disclosure throughout the banking industry.

(2) Unweighted values are calculated as outstanding balances maturing or callable within 30 days (for inflows and outflows).

(3) Weighted values are calculated after the application of respective haircuts (for HQLA) or inflow and outflow rates.

(4) Total adjusted values are calculated after the application of both haircuts and inflow and outflow rates and any applicable caps.

(5) The data in this table has been calculated using averages of the daily figures in the quarter.

As at October 31, 2020, Level 1 liquid assets represented 83% of the Bank's HQLA, which includes cash, central bank deposits, and bonds issued or guaranteed by the Canadian government and Canadian provincial governments.

Cash outflows arise from the application of OSFI-prescribed assumptions on deposits, debt, secured funding, commitments and additional collateral requirements. The cash outflows are partly offset by cash inflows, which come mainly from secured loans and performing loans. The Bank expects some quarter-over-quarter variation between reported LCRs, and such variation may not be indicative of a trend. The variation between the quarter ended October 31, 2020 and the preceding quarter reflects exceptional measures taken by OSFI and the Bank of Canada in response to the operational issues caused by the spread of COVID-19. The Bank's liquid asset buffer is well in excess of its total net cash outflows.

The LCR assumptions differ from the assumptions used for the liquidity disclosures presented in the tables on the previous pages or those used for internal liquidity management rules. While the liquidity disclosure framework is prescribed by the EDTF, the Bank's internal liquidity metrics use assumptions that are calibrated according to its business model and experience.

### Intraday Liquidity

The Bank manages its intraday liquidity in such a way that the amount of available liquidity exceeds its maximum intraday liquidity requirements. The Bank monitors its intraday liquidity on an hourly basis and the evolution is presented monthly to the Financial Markets Risk Committee.

### Funding Risk

Funding risk is defined as the risk to the Bank's ongoing ability to raise sufficient funds to finance actual or proposed business activities on an unsecured or secured basis at an acceptable price. The Bank maintains a good balance of its funding through appropriate diversification of its unsecured funding vehicles, securitization programs and secured funding. The Bank also diversifies its funding by currency, geography and maturity. The funding management priority is to achieve an optimal balance between deposits, securitization, secured funding and unsecured funding. This brings optimal stability to the funding and reduces vulnerability to unpredictable events.

Funding and liquidity levels remained sound and robust over the year and the Bank does not foresee any event, commitment or demand that might have a significant impact on its funding and liquidity risk position. For additional information, see the table entitled Residual Contractual Maturities of Balance Sheet Items and Off-Balance-Sheet Commitments in Note 29 to the consolidated financial statements.

### Credit Ratings

The credit ratings assigned by ratings agencies represent their assessment of the Bank's credit quality based on qualitative and quantitative information provided to them. Credit ratings may be revised at any time based on various factors, including macro-economic factors, methodologies used by ratings agencies, or the current and projected financial condition of the Bank. Credit ratings are one of the main factors that influence the Bank's ability to access financial markets at a reasonable cost. A downgrade in the Bank's credit ratings could adversely affect the cost, size and term of future funding and could also result in increased requirement to pledge collateral or decreased capacity to engage in certain collateralized business activities at a reasonable cost, including hedging and derivatives transactions.

Funding and liquidity levels remained sound and robust, and the Bank continues to enjoy excellent access to the market for its funding needs. The Bank received favourable credit ratings from all the agencies, reflecting the high quality of its debt instruments, and the Bank's objective is to maintain these strong ratings. On April 3, 2020, Fitch Ratings changed the trend on all the Bank's ratings and its related entities from "Stable" to "Negative" to reflect disruption to economic activity and financial markets from the COVID-19 pandemic and on April 30, 2020, DBRS Limited (DBRS) also changed the trend from "Positive" to "Stable" due to uncertainties regarding the negative impact of COVID-19. For Moody's and S&P, the outlook remains unchanged at "Stable." The following table presents the Bank's credit ratings according to four rating agencies as at October 31, 2020.

### The Bank's Credit Ratings

	As at October 31, 2020			
	Moody's	S&P	DBRS	Fitch
Short-term senior debt	P-1	A-1	R-1 (mid)	F1+
Canadian commercial paper		A-1 (mid)		
Long-term deposits	Aa3		AA (low)	AA-
Long-term non-bail-inable senior debt <sup>(1)</sup>	Aa3	A	AA (low)	AA-
Long-term senior debt <sup>(2)</sup>	A3	BBB+	A (high)	A+
NVCC subordinated debt	Baa2 (hyb)	BBB	BBB (high)	
NVCC limited recourse capital notes	Ba1 (hyb)	BB+	BBB	
NVCC preferred shares	Ba1 (hyb)	P-3 (high)	Pfd-2 (low)	
Counterparty risk <sup>(3)</sup>	Aa3/P-1			AA-
Covered bonds program	Aaa		AAA	AAA
Rating outlook	Stable	Stable	Stable	Negative

(1) Includes senior debt issued prior to September 23, 2018 and senior debt issued on or after September 23, 2018 which is excluded from the Bank Recapitalization (Bail-In) Regime.

(2) Subject to conversion under the Bank Recapitalization (Bail-In) Regime.

(3) Moody's uses the term Counterparty Risk Rating while Fitch uses the term Derivative Counterparty Rating.

### Guarantees

As part of a comprehensive liquidity management framework, the Bank regularly reviews its contracts that stipulate that additional collateral could be required in the event of a downgrade of the Bank's credit rating. The Bank's liquidity position management approach already incorporates additional collateral requirements in the event of a one-notch to three-notch downgrade. The table below presents the additional collateral requirements in the event of a one-notch or three-notch credit rating downgrade.

(millions of Canadian dollars)	As at October 31, 2020	
	One-notch downgrade	Three-notch downgrade
Derivatives <sup>(1)</sup>	25	37

(1) Contractual requirements related to agreements known as Credit Support Annexes.

### Funding Strategy

The main objective of the funding strategy is to support the Bank's organic growth while also enabling it to survive potentially severe and prolonged crises and to meet its regulatory obligations and financial targets.

The Bank's funding framework is summarized as follows:

- pursue a diversified deposit strategy to fund core banking activities through stable deposits coming from the networks of each of the Bank's major business segments;
- maintain a sound liquidity risk management through centralized expertise and management of liquidity metrics within predefined risk appetite;
- maintain active access to various markets to ensure a diversification of institutional funding in terms of source, geographic location, currency, instrument and maturity, whether or not funding is secured.

The funding strategy is implemented in accordance with the overall objectives of strengthening the Bank's franchise among market participants and consolidating its excellent reputation. The Bank continuously monitors and analyzes the possibilities for accessing less expensive and more flexible funding. The deposit strategy remains a priority for the Bank, which continues to prefer deposits to institutional funding.

The Bank actively monitors and controls liquidity risk exposures and funding needs within and across entities, business segments, and currencies. The process involves evaluating the liquidity position of individual business segments in addition to that of the Bank as a whole as well as the liquidity risk from raising unsecured and secured funding in foreign currencies. The funding strategy is implemented through the funding plan and deposit strategy, which are monitored, updated to reflect actual results and regularly evaluated.

### Diversified Funding Sources

The primary purpose of diversification by source, geographic location, currency, instrument, maturity and depositor is to mitigate liquidity and funding risk by ensuring that the Bank maintains alternative sources of funds that strengthen its capacity to withstand a variety of severe yet plausible institution-specific and market-wide shocks. To meet this objective, the Bank:

- takes funding diversification into account in the business planning process;
- maintains a variety of funding programs to access different markets;
- sets limits on funding concentration;
- maintains strong relationships with fund providers;
- is active in various funding markets of all tenors and for various instruments;
- identifies and monitors the main factors that affect the ability to raise funds.

The Bank is active in the following funding and securitization platforms:

- Canadian dollar Senior Unsecured Debt;
- U.S. dollar Senior Unsecured Debt programs;
- Canadian Medium-Term Note Shelf;
- U.S. dollar Commercial Paper programs;
- U.S. dollar Certificates of Deposit;
- Euro Medium-Term Note program;
- Canada Mortgage and Housing Corporation securitization programs;
- Canadian Credit Card Trust II;
- Legislative Covered Bond program.

The table below presents the residual contractual maturities of the Bank's wholesale funding. The information has been presented in accordance with the categories recommended by the EDTF for comparison purposes with other banks.

### Residual Contractual Maturities of Wholesale Funding<sup>(1)</sup>

(millions of Canadian dollars)	As at October 31, 2020							
	1 month or less	Over 1 month to 3 months	Over 3 months to 6 months	Over 6 months to 12 months	Subtotal 1 year or less	Over 1 year to 2 years	Over 2 years	Total
Deposits from banks <sup>(2)</sup>	671	20	13	–	704	–	–	704
Certificates of deposit and commercial paper <sup>(3)</sup>	1,521	2,841	5,489	1,787	11,638	–	–	11,638
Senior unsecured medium-term notes <sup>(4)(5)</sup>	–	–	703	1,038	1,741	2,966	5,801	10,508
Senior unsecured structured notes	–	–	–	–	–	–	2,417	2,417
Covered bonds and asset-backed securities								
Mortgage securitization	–	2,138	311	2,247	4,696	3,430	14,729	22,855
Covered bonds	–	360	1,564	698	2,622	2,880	4,639	10,141
Securitization of credit card receivables	–	–	–	–	–	36	28	64
Subordinated liabilities <sup>(6)</sup>	–	–	–	–	–	–	775	775
	<b>2,192</b>	<b>5,359</b>	<b>8,080</b>	<b>5,770</b>	<b>21,401</b>	<b>9,312</b>	<b>28,389</b>	<b>59,102</b>
Secured funding	–	2,498	1,875	2,945	7,318	6,346	19,396	33,060
Unsecured funding	2,192	2,861	6,205	2,825	14,083	2,966	8,993	26,042
	<b>2,192</b>	<b>5,359</b>	<b>8,080</b>	<b>5,770</b>	<b>21,401</b>	<b>9,312</b>	<b>28,389</b>	<b>59,102</b>
As at October 31, 2019	3,187	6,098	7,217	6,925	23,427	9,362	30,746	63,535

(1) Bankers' acceptances are not included in this table.

(2) Deposits from banks include all non-negotiable term deposits from banks.

(3) Includes bearer deposit notes.

(4) Certificates of deposit denominated in euros are included in senior unsecured medium-term notes.

(5) Includes deposits subject to bank recapitalization (Bail-In) conversion regulations.

(6) Subordinated debt is presented in this table but the Bank does not consider it as part of its wholesale funding.

## Operational Risk

Operational risk is the risk of loss resulting from an inadequacy or a failure ascribable to human resources, equipment, processes, technology or external events. Operational risk exists for every Bank activity. Theft, fraud, cyberattacks, unauthorized transactions, system errors, human error, amendments to or misinterpretation of laws and regulations, litigation or disputes with clients, inappropriate sales practice behaviour or property damage are just a few examples of events likely to cause financial loss, harm the Bank's reputation or lead to regulatory penalties or sanctions.

Although operational risk cannot be eliminated entirely, it can be managed in a thorough and transparent manner to keep it at an acceptable level. The Bank's operational risk management framework is built on the concept of three lines of defence and provides a clear allocation of responsibilities to all levels of the organization, as mentioned below.

### Operational Risk Management Framework

The operational risk management framework is described in the Operational Risk Management Policy, which is derived from the Risk Management Policy. The operational risk management framework is aligned with the Bank's risk appetite and is made up of policies, standards, and procedures specific to each operational risk, which fall under the responsibility of specialized groups.

The segments use several operational risk management tools and methods to identify, assess, and monitor their operational risks and control measures. With these tools and methods, the segments can:

- recognize and understand the inherent and residual risks to which their activities and operations are exposed;
- identify how to manage and monitor the identified risks to keep them at an acceptable level;
- proactively and continuously manage risks.

### Operational Risk Management Tools and Methods

#### Collection and Analysis of Data on Operational Events

The Operational Risk Unit applies a process, across the Bank and its subsidiaries, for identifying, collecting and analyzing data on internal operational events. This process includes determining the Bank's exposure to the operational risks and operational losses incurred and assessing the effectiveness of internal controls. It also helps limit operational events, keep losses at an acceptable level and, as a result, reduce potential capital charges and lower the likelihood of damage to the Bank's reputation. These data are processed and saved in a centralized database and are periodically the subject of a quality assurance exercise. During fiscal years 2020 and 2019, there were no material losses resulting from an operational risk event.

#### Analysis and Lessons Learned From Operational Events Observed in Other Large Businesses

By collecting and analyzing media-reported information about significant operational events, in particular events related to fraud, information security and theft of personal information experienced by other organizations, the Bank can assess the effectiveness of its own operational risk management practices and reinforce them, if necessary.

#### Operational Risk Self-Assessment Program

The operational risk self-assessment program gives each business unit and corporate unit the means to proactively identify and assess new or major operational risks to which they are exposed, evaluate the effectiveness of mitigating controls, and develop action plans to keep such risks at acceptable levels. As such, the program makes it possible to anticipate certain factors that could hinder performance or the achievement of objectives.

#### Key Risk Indicators

Key risk indicators are used to monitor the drivers of exposure to major operational risks and track changes in risks to proactively manage them. The business units and corporate units define key indicators associated with their main operational risks and assign tolerance thresholds to them. These indicators are monitored periodically, and when they show a significant increase in risk or when a tolerance threshold is exceeded, they are sent to the appropriate level in the hierarchy and action plans are implemented as required.

#### Scenario Analysis

Scenario analysis, which is part of a Bank-wide stress testing program, is an important and useful tool for assessing the potential impacts related to potentially serious events. It is used to define the risk appetite, set risk exposure limits, and engage in business planning. More specifically, scenario analysis provides management with a better understanding of the risks faced by the Bank, and helps it make appropriate management decisions to mitigate potential operational risks that are inconsistent with the Bank's risk appetite.

#### Insurance Program

In order to protect itself against any material losses related to its exposure to unforeseeable operational risks, the Bank also has adequate insurance, the nature and amount of which meet its coverage requirements.

### Operational Risk Reports and Disclosures

Operational events for which the financial impact exceeds the tolerance thresholds or that have a significant regulatory or reputation impact are submitted to the decision-making levels concerned. Management is obligated to report on its management process and to remain alert to current and future issues. Reports on the Bank's risk profile, highlights, and emerging risks are periodically submitted, on a timely basis, to the Operational Risk Management Committee, the GRC and the RMC. This reporting enhances the transparency and proactive management of the main operational risk factors.

## Regulatory Compliance Risk

Regulatory compliance risk is the risk of the Bank failing to comply with the regulatory requirements in effect where it does business, both in Canada and internationally. Regulatory compliance risk is present in all of the daily operations of each Bank segment. A situation of regulatory non-compliance can adversely affect the Bank's reputation and result in penalties and sanctions or increased oversight by regulators.

### Organizational Structure of Compliance

Compliance is an independent oversight function within the Bank. The Senior Vice-President, Chief Compliance Officer and Chief Anti-Money Laundering Officer serves as both chief compliance officer (CCO) and chief anti-money laundering officer (CAMLO). She is responsible for implementing and updating the Bank's programs for regulatory compliance management, regulatory requirements related to AML/ATF, international sanctions, and the fight against corruption. The CCO and CAMLO has a direct reporting relationship with the Chair of the RMC and meets with him at least once every quarter. She can also communicate directly with senior management, officers and directors of the Bank and of its subsidiaries and foreign centres.

### Regulatory Compliance Framework

The Bank operates in a highly regulated industry. To ensure sound management of regulatory compliance, the Bank favours proactive approaches and incorporates regulatory requirements into its day-to-day operations.

Such proactive management also provides reasonable assurance that the Bank is in compliance, in all material respects, with the regulatory requirements in effect where it does business, both in Canada and internationally.

The implementation of a regulatory compliance risk management framework across the Bank is entrusted to the Compliance Service, which has the following mandate:

- make sure that policies and standards that ensure compliance with the regulatory requirements are in effect, including those related to AML/ATF, to international sanctions, and to the fight against corruption;
- develop compliance and AML/ATF training programs for Bank employees, officers, and directors;
- exercise independent oversight and monitor the programs, policies, and procedures implemented by the Bank, its subsidiaries, and foreign centres to ensure that the control mechanisms are sufficient, respected, and effective;
- report relevant compliance and AML/ATF matters to the Bank's Board and inform it of any significant changes in the effectiveness of the Bank's risk management framework.

The Bank holds itself to high regulatory compliance risk management standards in order to earn the trust of its clients, its shareholders, the market and the general public.

Described below are the main regulatory developments that have been monitored over the past year.

### Consumer Protection

The past year was marked by several regulatory changes, including the *Code of Conduct for the Delivery of Banking Services to Seniors*, Bill C-86 amending the *Bank Act* (Canada), Bill C-81 (*Accessible Canada Act*), the *Canada Deposit Insurance Corporation Act* and the *Consumer Protection Act*. The purpose of these regulatory changes is to ensure that consumers are protected in terms of, among other things, disclosures, building access and employee training. The Bank continuously monitors the regulatory environment to ensure that its practices comply with regulatory changes, as well as with those of the industry. For this reason, it participates in various events that bring together actors in the financial services ecosystem.

### Anti-Money Laundering and Anti-Terrorist Financing (AML/ATF) Activities

On July 10, 2019, the Government of Canada published amendments to the regulations under the *Proceeds of Crime (Money Laundering) and Terrorist Financing Act* (2019), which will come into force in two stages. Certain amendments, of which the methods of identification and the delay to submit a suspicious transaction report with Financial Transactions and Reports Analysis Centre of Canada (FINTRAC), came into force in June 2020, and others will come into force in June 2021.

### Privacy and Data Protection

Due to changes in technologies and in society at large, privacy and data protection is a topical issue in Canada. In Europe, the new General Data Protection Regulation (GDPR) has been in force since May 2018, and several companies have received substantial penalties for contravening this regulation. In the United States, the state of California was the first to adopt its own stringent *California Consumer Privacy Act* in January 2020. The government of Quebec recently tabled a bill aimed at fostering transparency, increasing the level of data confidentiality and better regulating the collection and use of personal information. A federal bill aimed at modernizing privacy law was also tabled in November 2020 and aims, among other things, to reform the framework for the protection of personal information held by the private sector.

### Canada Deposit Insurance Corporation (CDIC)

Changes in the Government of Canada's deposit insurance framework have been published concerning information on co-owned accounts and accounts held in trust as well as on the insurability of certain deposits. Since April 30, 2020, coverage has been extended to insurable deposits in foreign currencies and to term deposits with maturities exceeding five years. In addition, as of April 30, 2022, separate coverage will be granted for Registered Education Savings Plans and Registered Disability Savings Plans. New requirements will also be established for the coverage of deposits in trust, particularly nominee-brokered deposits.

### Recovery and Resolution Planning

As part of the regulatory measures used to manage systemic risks, D-SIBs are required to have in place recovery and resolution plans. A recovery plan is essentially a road map that guides the recovery of a bank in the event of severe financial stress; conversely, a resolution plan guides its orderly wind-down in the event of failure when recovery is no longer an option. The Bank improves and periodically updates its recovery and resolution plans to prepare for these high-risk, but low-probability events. In addition, the Bank and other D-SIBs continue to work with the CDIC to develop a comprehensive settlement plan that would ensure orderly winding down of the Bank's operations. These plans are approved by the Board and submitted to the national regulatory bodies.

### Section 871(m) – Dividend Equivalent Payments

Section 871(m) of the U.S. Internal Revenue Code aims to ensure that non-U.S. persons pay tax on payments that can be considered dividends on U.S. shares, when these payments are made on certain derivative instruments. The derivative instruments for which the underlyings are U.S. shares or "non-qualified indices" concluded as of January 1, 2017 are subject to the withholding and reporting requirements. The effective date for certain components of this regulation has been deferred to January 1, 2023. Some of the obligations of a qualified derivatives dealer, established under section 871(m) of the IRC and the qualified intermediary agreement have also been deferred to January 1, 2023.

### Common Reporting Standard - Foreign Account Tax Compliance Act

The *Foreign Account Tax Compliance Act* (FATCA), an American law, and the Common Reporting Standard (CRS), an international standard, the principles of which have been incorporated into the *Income Tax Act* (Canada), are intended to counter tax evasion by taxpayers through the international exchange of tax information through financial institutions. In order to comply with these regulatory requirements, the Bank and its subsidiaries are required to establish the classification and the status, as the case may be, of the entity that holds the account with the Bank. New Canada Revenue Agency (CRA) rules came into force on January 1, 2020. CRA has published the final version of the guidelines, but the industry is planning to make suggestions to CRA, including deferring the application of the new penalties scheduled for January 1, 2021.

### Client-Centered Reforms - Amendments to National Instrument 31-103

On October 3, 2019, the CSA published the final version of amendments to National Instrument 31-103, Registration Requirements, Exemptions and Ongoing Registrant Obligations. Changes related to the client-focused reforms will come into force on December 31, 2021, and they include requirements on the relationship disclosure. Only the conflict-of-interest obligations will come into force on June 30, 2021.

### Reform of Benchmark Interest Rates

The reform of benchmark interest rates is a global initiative that is being coordinated and led by central banks and governments around the world, including Canada. The objective is to improve benchmarks by ensuring that they meet robust international standards. The initiative introduces other benchmarks as recommended rates (risk-free rates, such as Secured Overnight Financing Rate (SOFR), Canadian Overnight Repo Rate Average (CORRA) and Europe Short-Term Rate (ESTR)) to replace the Interbank Offered Rate (IBOR), which are the benchmark rates used by the world's major banks for short-term lending in the interbank market. These rates, in particular LIBOR (London Interbank Offered Rates), are widely used around the world as benchmarks for derivative financial instruments, bonds and other variable-rate instruments. To ensure an ordered transition to the risk-free rates recommended for derivatives, the industry has proposed a solution through ISDA (International Swaps and Derivatives Association) via a protocol (2020 IBOR Fallbacks Protocol), as well as a supplement to the 2006 definitions, which come into force on January 25, 2021. For certain other types of contracts, contractual amendments are expected by the end of 2021, at which time certain current rates (in this case, LIBOR rates) are expected to be withdrawn.

## Reputation Risk

Reputation risk is the risk that the Bank's operations or practices will be judged negatively by the public, whether that judgment is with or without basis, thereby adversely affecting the perception, image or trademarks of the Bank, potentially resulting in costly litigation or loss of income. Reputation risk generally arises from a deficiency in managing another risk. The Bank's reputation may, for example, be adversely affected by non-compliance with laws and regulations or by process failures. All risks must therefore be managed effectively in order to protect the Bank's reputation.

The Bank seeks to ensure that its employees are constantly aware of the potential repercussions of their actions on the Bank's reputation and image. In addition to its operational risk management initiatives mentioned above, the Bank has a variety of mechanisms to support sound reputation risk management, including codes of professional conduct applicable to all employees, policies regarding ethics and corporate governance and appropriate training programs. The Bank also has a crisis management framework including effective intervention, communication and behavioural parameters in order to minimize the impact on its activities, clients and employees.

The Bank also has a reputation risk policy, approved by the RMC, that covers all of the Bank's practices and activities. The policy sets the reputation risk management principles and rules for clients, employees and communities, all of which are stakeholders of the Bank. The policy is complemented by the special provisions of the new products and activities policy, which determines the approvals required by the various committees that assess risk whenever new products or activities are introduced within the business units. These provisions are intended, among other things, to provide oversight for the management of reputation risk, which may be material for such products or activities. The new products and activities policy requires that any new product or activity for which reputation risk is determined to be high be submitted to the GRC for approval. The activities of the Compliance Service, Legal Affairs Department, Communications and Corporate Social Responsibility Department and Investor Relations Department complete the reputation risk management framework.

## Strategic Risk

Strategic risk is the risk of a loss arising from inappropriate strategic orientations, improper execution or ineffective response to economic, financial, or regulatory changes. The corporate strategic plan is developed by the Office of the President, in alignment with the Bank's overall risk appetite, and approved by the Board. Once approved, the initiatives of the strategic plan are monitored regularly to ensure that they are progressing. If not, strategies could be reviewed or adjusted if deemed appropriate.

In addition, the Bank has a specific Board-approved policy for strategic investments, which are defined as purchases of business assets or acquisitions of significant interests in an entity for the purposes of acquiring control or creating a long-term relationship. As such, acquisition projects and other strategic investments are analyzed through a due diligence process to ensure that these investments are aligned with the corporate strategic plan and the Bank's risk appetite.

## Environmental and Social Risk

Environmental and social risk represents the potential for environmental or social issues to provoke a financial or operational loss for the Bank and damage to its reputation or impacts on its stakeholders. The Bank is exposed to these risks directly through its operations and indirectly through the activities of clients.

With this in mind, the Bank has adopted environmental, social and governance (ESG) principles that demonstrate the importance it attaches to sustainable development and to maintaining the best balance of interests between societal stakeholders. The Bank has supported various sustainable development initiatives, and continues to implement several initiatives aimed at integrating environmental and social issues into its business and operational decisions. This also implies a continuous and stronger adaptation in the event of major crises, such as natural disasters or health crises such as the COVID-19 crisis, that can considerably affect the global economy and society over an extended period of time. Our Report on Environmental, Social and Governance Advances for 2019, available on the Bank's website at [nbc.ca](http://nbc.ca), provides more detailed information on how the Bank identifies and manages these risks.

### Disclosure related to the Task Force on Climate-Related Financial Disclosures (TCFD)

In recent years, environmental and climate issues have often been brought front and centre. Mindful of its mobilizing role on environmental issues, in 2018 the Bank announced its support for the Financial Stability Board's TCFD and undertook to communicate the information recommended by this group. In connection with these recommendations, the Bank has identified two types of relevant climate-related risks, i.e., physical risks and transition risks, which it has added to its monitoring of the main risks. The Bank defines physical risks as the potential impacts of increased and intensified extreme weather events that could lead to, among other things, food, energy and resource supply problems, and potentially depreciate the Bank's physical and financial assets. The Bank defines transition risks as the impacts from moving toward a low-emission economy, such as technological changes or public policy directions that could lead to revaluations of the Bank's assets, resulting in new costs or opportunities. The Bank also includes market risk and reputational risk within transition risks.

The TCFD's recommendations are organized into four main pillars representing the operational foundations of an organization: governance, strategy, risk management, and metrics and targets. These four broad categories of recommendations are intended to provide a framework for climate-related financial reporting so that institutional investors can make informed choices about their exposure to climate-related risks and opportunities. The Bank has defined a roadmap for implementing the TCFD's recommendations and is enhancing disclosures related to climate risk management. The Bank is also working with various industry partners to identify and implement sound management practices aimed at promoting the development of a low-carbon economy. The Bank recently published its first report on advances for the Task Force on Climate-Related Financial Disclosure 2020 – TCFD Report, available on the Bank's website at [nbc.ca](http://nbc.ca). This report provides detailed information on how it is managing climate-related risks.

Given that climate risk is associated with credit risk and operational risk, the Bank recognizes the importance of integrating several additional control measures into its existing risk management processes and implementing appropriate strategies to mitigate them. To this end, an environmental policy has been implemented that applies to activities and decisions across the Bank. This policy clearly sets out the principles established to identify and limit environmental and climate risks as well as impacts on the community and the Bank's business lines. In the interests of proactively ensuring the strategic positioning of its entire portfolio, the Bank continues to express its desire to support the energy transition toward a lower-carbon economy.

In order to continue to foster economically and socially sustainable development, the Bank has emphasized various measures to combat climate change. The Bank can point to a series of achievements over the past year in response to the four priorities identified in its 2019 Annual Report.

Priority	Achievements	Prospects for the Future
<b>Grow the proportion of its renewable-energy-related funding assets at a faster pace than those related to non-renewable energy</b>	<ul style="list-style-type: none"> <li>&gt; The renewable energy loan portfolio grew by 107% in the period from 2014 to 2020, while the non-renewable energy loan portfolio declined by 33%.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Maintain our medium- and long-term commitment.</li> <li>&gt; Incorporate at least one climate-related indicator into our risk appetite framework for fiscal 2021.</li> </ul>
<b>Support clients in their energy transitions</b>	<ul style="list-style-type: none"> <li>&gt; Expansion of the mandate of the renewable energy business development team in 2019.</li> <li>&gt; Financing granted with conditions related to the achievement of climate objectives.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Continue our dialogue with customers to broaden the sustainable product offering.</li> <li>&gt; Continue to support clients in their energy transitions.</li> </ul>
<b>Develop indicators for effectively monitoring the Bank's sustainable development performance</b>	<ul style="list-style-type: none"> <li>&gt; Adoption, in 2020, of a target for reducing the Bank's own greenhouse gas (GHG) emissions by 25% from 2019 levels by 2025.</li> <li>&gt; Annual calculation of the carbon footprint.</li> <li>&gt; Optimization of energy consumption.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Achieve our reduction target by following our action plan.</li> </ul>
<b>Strengthen the Bank's partnerships with the industry's main change agents in order to meet its commitments</b>	<ul style="list-style-type: none"> <li>&gt; The Bank as well as the other major Canadian banks are involved in the working committees of various groups, such as the Canadian Bankers Association, Finance Montréal and the Canadian Standards Association.</li> <li>&gt; The Bank is a member of the United Nations Environment Programme Finance Initiative (UNEP FI).</li> <li>&gt; The Bank is a founding signatory of the UN Principles for Responsible Banking and one of the first financial institutions in North America to adopt them.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Maintain an open dialogue with all our stakeholders to accelerate the transition to a low-carbon economy.</li> </ul>

## Critical Accounting Policies and Estimates

A summary of the significant accounting policies used by the Bank is presented in Note 1 to the consolidated financial statements of this Annual Report. The accounting policies discussed below are considered critical given their importance to the presentation of the Bank's financial position and operating results and require subjective and complex judgments and estimates on matters that are inherently uncertain. Any change in these judgments and estimates could have a significant impact on the Bank's consolidated financial statements.

### COVID-19 Pandemic Considerations

On March 11, 2020, COVID-19 was declared a global pandemic by the World Health Organization. As a result of the heightened uncertainty associated with the unprecedented nature of the COVID-19 pandemic, developing reliable estimates and applying judgment has become even more challenging. ECL accounting has become particularly difficult in the current circumstances and requires significant judgment. The ECL model is forward-looking and is based on a probability-weighted approach. Measurement of ECLs at each reporting period reflects reasonable and supportable information about past events, current conditions, and forecasts of future events and economic conditions. During this period of greater economic uncertainty, it is very difficult to forecast future events and the macroeconomic inputs used in ECL modelling. Determining macroeconomic scenarios and assigning probabilities to these scenarios requires significant judgment. Consideration is given both to the effects of COVID-19 and the significant government support measures. The Bank applies expert credit judgment to adjust modelled ECL results when it becomes evident that known or expected risk factors and information were not considered in the credit rating and modelling process. As a result of COVID-19 and the recent economic downturn, significant measurement uncertainty exists in determining ECLs, and measurement is subject to significant judgment. The uncertainty regarding key inputs used in measuring ECLs is outlined in Note 7 to the consolidated financial statements.

In response to the economic impact of COVID-19, the Canadian government has established, among other financial relief programs, the Canada Emergency Business Account (CEBA) program to provide interest-free loans of up to \$40,000 for small and medium-sized businesses and non-profit organizations. The Bank and several other financial institutions are authorized to implement the CEBA program in cooperation with Export Development Canada. This program is guaranteed by the Government of Canada and aims to help businesses cope with the economic challenges resulting from the COVID-19 crisis. Loans made by the Bank to its business clients under CEBA are not recognized on the Bank's Consolidated Balance Sheet, since the conditions of a qualifying pass-through arrangement have been met and the Bank has determined that substantially all the risks and rewards of ownership of the loans have been transferred to the Canadian government. The Bank receives an administration fee as reimbursement for the costs of administering this Canadian government program and this fee is recognized in the Consolidated Statement of Income as a reduction of *Non-interest expenses – Other*. As at October 31, 2020, loans of \$1.2 billion had been granted to the Bank's clients under the CEBA program.

### Classification of Financial Instruments

At initial recognition, all financial instruments are recorded at fair value on the Consolidated Balance Sheet. At initial recognition, financial assets must be classified as subsequently measured at fair value through other comprehensive income, at amortized cost, or at fair value through profit or loss. The Bank determines the classification based on the contractual cash flow characteristics of the financial assets and on the business model it uses to manage these financial assets. At initial recognition, financial liabilities are classified as subsequently measured at amortized cost, or at fair value through profit or loss.

For the purpose of classifying a financial asset, the Bank must determine whether the contractual cash flows associated with the financial asset are solely payments of principal and interest on the principal amount outstanding. The principal is generally the fair value of the financial asset at initial recognition. The interest consists of consideration for the time value of money, for the credit risk associated with the principal amount outstanding during a particular period, and for other basic lending risks and costs as well as of a profit margin. If the Bank determines that the contractual cash flows associated with a financial asset are not solely payments of principal and interest, the financial assets must be classified as measured at fair value through profit or loss.

When classifying financial assets, the Bank determines the business model used for each portfolio of financial assets that are managed together to achieve a same business objective. The business model reflects how the Bank manages its financial assets and the extent to which the financial asset cash flows are generated by the collection of the contractual cash flows, the sale of the financial assets, or both. The Bank determines the business model using scenarios that it reasonably expects to occur. Consequently, the business model determination is a matter of fact and requires the use of judgment and consideration of all the relevant evidence available at the date of determination.

A financial asset portfolio falls within a "hold to collect" business model when the Bank's primary objective is to hold these financial assets in order to collect contractual cash flows from them and not to sell them. When the Bank's objective is achieved both by collecting contractual cash flows and by selling the financial assets, the financial asset portfolio falls within a "hold to collect and sell" business model. In this type of business model, collecting contractual cash flows and selling financial assets are both integral components to achieving the Bank's objective for this financial asset portfolio. Financial assets are mandatorily measured at fair value through profit or loss if they do not fall within either a "hold to collect" business model or a "hold to collect and sell" business model.

## Fair Value of Financial Instruments

The fair value of a financial instrument is the price that would be received to sell a financial asset or paid to transfer a financial liability in an orderly transaction in the principal market at the measurement date under current market conditions (i.e., an exit price).

Unadjusted quoted prices in active markets, based on bid prices for financial assets and offered prices for financial liabilities, provide the best evidence of fair value. A financial instrument is considered quoted in an active market when prices in exchange, dealer, broker or principal-to-principal markets are accessible at the measurement date. An active market is one where transactions occur with sufficient frequency and volume to provide quoted prices on an ongoing basis.

When there is no quoted price in an active market, the Bank uses another valuation technique that maximizes the use of relevant observable inputs and minimizes the use of unobservable inputs. The chosen valuation technique incorporates all the factors that market participants would consider when pricing a transaction. Judgment is required when applying a large number of acceptable valuation techniques and estimates to determine fair value. The estimated fair value reflects market conditions on the valuation date and, consequently, may not be indicative of future fair value.

The best evidence of the fair value of a financial instrument at initial recognition is the transaction price, i.e., the fair value of the consideration received or paid. If there is a difference between the fair value at initial recognition and the transaction price, and the fair value is determined using a valuation technique based on observable market inputs or, in the case of a derivative, if the risks are fully offset by other contracts entered into with third parties, this difference is recognized in the Consolidated Statement of Income. In other cases, the difference between the fair value at initial recognition and the transaction price is deferred on the Consolidated Balance Sheet. The amount of the deferred gain or loss is recognized over the term of the financial instrument. The unamortized balance is immediately recognized in net income when (i) observable market inputs can be obtained and support the fair value of the transaction, (ii) the risks associated with the initial contract are substantially offset by other contracts entered into with third parties, (iii) the gain or loss is realized through a cash receipt or payment, or (iv) the transaction matures or is cancelled before maturity.

In certain cases, measurement adjustments are recognized to address factors that market participants would use at the measurement date to determine fair value but that are not included in the measurement technique due to system limitations or uncertainty surrounding the measure. These factors include, but are not limited to, the unobservable nature of inputs used in the valuation model, assumptions about risk such as market risk, credit risk, or risk related to the valuation model and future administration costs. The Bank may also consider market liquidity risk when determining the fair value of financial instruments when it believes these instruments could be disposed of for a consideration below the fair value otherwise determined due to a lack of market liquidity or an insufficient volume of transactions in a given market. The measurement adjustments also include the funding valuation adjustment applied to derivative financial instruments to reflect the market implied cost or benefits of funding collateral for uncollateralized or partly collateralized transactions.

IFRS establishes a fair value hierarchy that classifies the inputs used in financial instrument fair value measurement techniques according to three levels. The fair value hierarchy has the following levels:

### Level 1

Inputs corresponding to unadjusted quoted prices in active markets for identical assets and liabilities and accessible to the Bank at the measurement date. These instruments consist primarily of equity securities, derivative financial instruments traded in active markets, and certain highly liquid debt securities actively traded in over-the-counter markets.

### Level 2

Valuation techniques based on inputs, other than the quoted prices included in Level 1 inputs, that are directly or indirectly observable in the market for the asset or liability. These inputs are quoted prices of similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; inputs other than quoted prices used in a valuation model that are observable for that instrument; and inputs that are derived principally from or corroborated by observable market inputs by correlation or other means. These instruments consist primarily of certain loans, certain deposits, derivative financial instruments traded in over-the-counter markets, certain debt securities, certain equity securities whose value is not directly observable in an active market, liabilities related to transferred receivables as well as certain other liabilities.

### Level 3

Valuation techniques based on one or more significant inputs that are not observable in the market for the asset or liability. The Bank classifies financial instruments in Level 3 when the valuation technique is based on at least one significant input that is not observable in the markets. The valuation technique may also be partly based on observable market inputs. Financial instruments whose fair values are classified in Level 3 consist of investments in hedge funds, certain derivative financial instruments, equity and debt securities of private companies, certain loans, and certain deposits (structured deposit notes).

Establishing fair value is an accounting estimate and has an impact on *Securities at fair value through profit or loss*, certain *Loans*, *Securities at fair value through other comprehensive income*, *Obligations related to securities sold short*, *Derivative financial instruments*, financial instruments designated at fair value through profit or loss, and financial instruments designated at fair value through other comprehensive income on the Consolidated Balance Sheet. This estimate also has an impact on *Non-interest income* in the Consolidated Statement of Income of the Financial Markets segment and of the *Other* heading. Lastly, this estimate has an impact on *Other comprehensive income* in the Consolidated Statement of Comprehensive Income. For additional information on the fair value determination of financial instruments, see Notes 3 and 6 to the consolidated financial statements.

## Impairment of Financial Assets

At the end of each reporting period, the Bank applies a three-stage impairment approach to measure the expected credit losses (ECL) on all debt instruments measured at amortized cost or at fair value through other comprehensive income and on loan commitments and financial guarantees that are not measured at fair value. ECLs are a probability-weighted estimate of credit losses over the remaining expected life of the financial instrument. The ECL model is forward looking. Measurement of ECLs at each reporting period reflects reasonable and supportable information about past events, current conditions, and forecasts of future events and economic conditions. Judgment is required in making assumptions and estimates, determining movements between the three stages, and applying forward-looking information. Any changes in assumptions and estimates, as well as the use of different, but equally reasonable, estimates and assumptions, could have an impact on the allowances for credit losses and the provisions for credit losses for the year. All business segments are affected by this accounting estimate. For additional information, see Note 7 to the consolidated financial statements.

### Determining the Stage

The ECL three-stage impairment approach is based on the change in the credit quality of financial assets since initial recognition. If, at the reporting date, the credit risk of non-impaired financial instruments has not increased significantly since initial recognition, these financial instruments are classified in Stage 1, and an allowance for credit losses that is measured, at each reporting date, in an amount equal to 12-month expected credit losses is recorded. When there is a significant increase in credit risk since initial recognition, these non-impaired financial instruments are migrated to Stage 2, and an allowance for credit losses that is measured, at each reporting date, in an amount equal to lifetime expected credit losses is recorded. In subsequent reporting periods, if the credit risk of the financial instrument improves such that there is no longer a significant increase in credit risk since initial recognition, the ECL model requires reverting to Stage 1, i.e., recognition of 12-month expected credit losses. When one or more events that have a detrimental impact on the estimated future cash flows of a financial asset have occurred, the financial asset is considered credit-impaired and is migrated to Stage 3, and an allowance for credit losses equal to lifetime expected losses continues to be recorded or the financial asset is written off. Interest income is calculated on the gross carrying amount for financial assets in Stages 1 and 2 and on the net carrying amount for financial assets in Stage 3.

### Assessment of Significant Increase in Credit Risk

In determining whether credit risk has increased significantly, the Bank uses an internal credit risk grading system, external risk ratings, and forward-looking information to assess deterioration in credit quality of a financial instrument. To assess whether or not the credit risk of a financial instrument has increased significantly, the Bank compares the probability of default (PD) occurring over its expected life as at the reporting date with the PD occurring over its expected life on the date of initial recognition and considers reasonable and supportable information indicative of a significant increase in credit risk since initial recognition. The Bank includes relative and absolute thresholds in the definition of significant increase in credit risk and a backstop of 30 days past due. All financial instruments that are 30 days past due are migrated to Stage 2 even if other metrics do not indicate that a significant increase in credit risk has occurred. The assessment of a significant increase in credit risk requires significant judgment.

### Measurement of Expected Credit Losses

ECLs are measured as the probability-weighted present value of all expected cash shortfalls over the remaining expected life of the financial instrument, and reasonable and supportable information about past events, current conditions and forecasts of future events and economic conditions is considered. The estimation and application of forward-looking information requires significant judgment. The cash shortfall is the difference between all contractual cash flows owed to the Bank and all the cash flows that the Bank expects to receive.

The measurement of ECLs is primarily based on the product of the financial instrument's probability of default (PD), loss given default (LGD) and exposure at default (EAD). Forward-looking macroeconomic factors such as unemployment rates, housing price indices, interest rates, and gross domestic product (GDP) are incorporated into the risk parameters. The estimate of expected credit losses reflects an unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes. The Bank incorporates three forward-looking macroeconomic scenarios in its ECL calculation process: a base scenario, an upside scenario and a downside scenario. Probability weights are attributed to each scenario. The scenarios and probability weights are reassessed quarterly and are subject to management review. The Bank applies experienced credit judgment to adjust the modelled ECL results when it becomes evident that known or expected risk factors and information were not considered in the credit risk rating and modelling process.

ECLs for all financial instruments are recognized in *Provisions for credit losses* in the Consolidated Statement of Income. In the case of debt instruments measured at fair value through other comprehensive income, ECLs are recognized in *Provisions for credit losses* in the Consolidated Statement of Income, and a corresponding amount is recognized in *Other comprehensive income* with no reduction in the carrying amount of the asset on the Consolidated Balance Sheet. As for debt instruments measured at amortized cost, they are presented net of the related allowances for credit losses on the Consolidated Balance Sheet. Allowances for credit losses for off-balance-sheet credit exposures that are not measured at fair value are included in *Other liabilities* on the Consolidated Balance Sheet.

### **Purchased or Originated Credit-Impaired Financial Assets**

On initial recognition of a financial asset, the Bank determines whether the asset is credit-impaired. For financial assets that are credit-impaired upon purchase or origination, the lifetime expected credit losses are reflected in the initial fair value. In subsequent reporting periods, the Bank recognizes only the cumulative changes in these lifetime ECLs since initial recognition as an allowance for credit losses. The Bank recognizes changes in ECLs in *Provisions for credit losses* in the Consolidated Statement of Income, even if the lifetime ECLs are less than ECLs that were included in the estimated cash flows on initial recognition.

### **Definition of Default**

The definition of default used by the Bank to measure ECLs and transfer financial instruments between stages is consistent with the definition of default used for internal credit risk management purposes. The Bank considers a financial asset, other than a credit card receivable, to be credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred or when contractual payments are 90 days past due. Credit card receivables are considered credit-impaired and are fully written off at the earlier of the following: when a notice of bankruptcy is received, a settlement proposal is made, or contractual payments are 180 days past due.

### **Write-Offs**

A financial asset and its related allowance for credit losses are normally written off in whole or in part when the Bank considers the probability of recovery to be non-existent and when all guarantees and other remedies available to the Bank have been exhausted or if the borrower is bankrupt or winding up and balances owing are not likely to be recovered.

## **Impairment of Non-Financial Assets**

Premises and equipment and intangible assets with finite useful lives are tested for impairment when events or changes in circumstances indicate that their carrying value may not be recoverable. At the end of each reporting period, the Bank determines whether there is an indication that premises and equipment or intangible assets with finite useful lives may be impaired. Goodwill and intangible assets that are not yet available for use or that have indefinite useful lives are tested for impairment annually or more frequently if there is an indication that the asset might be impaired.

An asset is tested for impairment by comparing its carrying amount with its recoverable amount. The recoverable amount must be estimated for the individual asset. Where it is not possible to estimate the recoverable amount of an individual asset, the recoverable amount of the cash-generating unit (CGU) to which the asset belongs will be determined. Goodwill is always tested for impairment at the level of a CGU or a group of CGUs. A CGU is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The Bank uses judgment to identify CGUs.

An asset's recoverable amount is the higher of fair value less costs to sell and the value in use of the asset or CGU. Value in use is the present value of expected future cash flows from the asset or CGU. The recoverable amount of the CGU is determined using valuation models that consider various factors such as projected future cash flows, discount rates and growth rates. The use of different estimates and assumptions in applying the impairment tests could have a significant impact on income. If the recoverable amount of an asset or a CGU is less than its carrying amount, the carrying amount is reduced to its recoverable amount and an impairment loss is recognized in *Non-interest expenses* in the Consolidated Statement of Income.

Management exercises judgment when determining whether there is objective evidence that premises and equipment or intangible assets with finite useful lives may be impaired. It also uses judgment in determining to which CGU or group of CGUs an asset or goodwill is to be allocated. Moreover, for impairment assessment purposes, management must make estimates and assumptions regarding the recoverable amount of non-financial assets, CGUs or a group of CGUs. For additional information on the estimates and assumptions used to calculate the recoverable amount of an asset or CGU, see Note 11 to the consolidated financial statements.

Any changes to these estimates and assumptions may have an impact on the recoverable amount of a non-financial asset and, consequently, on impairment testing results. These accounting estimates have an impact on *Premises and equipment*, *Intangible assets* and *Goodwill* reported on the Consolidated Balance Sheet. The aggregate impairment loss, if any, is recognized as a non-interest expense for the corresponding segment and presented in the *Other* item.

## **Employee Benefits – Pension Plans and Other Post-Employment Benefits**

Pension plan and other post-employment plan expenses and obligations are actuarially determined using the projected benefit method prorated on service. The calculations incorporate management's best estimates of various actuarial assumptions such as discount rates, rates of compensation increase, health care cost trend rates, mortality rates and retirement age.

Remeasurements of these plans result in actuarial gains and losses related to the defined benefit obligation and the actual return on plan assets, excluding the net interest determined by applying a discount rate to the net asset or liability of the plans. Remeasurements are immediately recognized in *Other comprehensive income* and will not be subsequently reclassified to net income; these cumulative gains and losses are reclassified to *Retained earnings*.

The use of different assumptions could have a significant impact on the defined benefit asset (liability) presented in *Other assets (Other liabilities)* on the Consolidated Balance Sheet, on the pension plan and other post-employment benefit plan expenses presented in *Compensation and employee benefits* in the Consolidated Statement of Income, as well as on *Remeasurements of pension plans and other post-employment benefit plans* presented in *Other comprehensive income*. All business segments are affected by this accounting estimate. For additional information, including the significant assumptions used to determine the Bank's pension plan and other post-employment benefit plan expenses and the sensitivity analysis for significant plan assumptions, see Note 23 to the consolidated financial statements.

## Income Taxes

The Bank makes assumptions to estimate income taxes as well as deferred tax assets and liabilities. This process includes estimating the actual amount of income taxes payable and evaluating tax loss carryforwards and temporary differences arising from differences between the values of the items reported for accounting and for income tax purposes. Deferred tax assets and liabilities, presented in *Other assets* and *Other liabilities* on the Consolidated Balance Sheet, are calculated according to the tax rates to be applied in future periods. Previously recorded deferred tax assets and liabilities must be adjusted when the date of the future event is revised based on current information. The Bank periodically evaluates deferred tax assets to assess recoverability. In the Bank's opinion, based on the information at its disposal, it is probable that all deferred tax assets will be realized prior to their expiration.

This accounting estimate affects *Income taxes* in the Consolidated Statement of Income for all business segments. For additional information on income taxes, see Notes 1 and 24 to the consolidated financial statements.

## Contingent Liabilities

### Maple Financial Group Inc.

The Bank has a 24.9% equity interest in Maple Financial Group Inc. (Maple), a privately owned Canadian company that operated through direct and indirect wholly owned subsidiaries in Canada, Germany, the United Kingdom and the United States.

Maple Bank GmbH (Maple GmbH), an indirect wholly owned subsidiary of Maple, has been the subject of an investigation into alleged tax irregularities by German prosecutors since September 2015, and the investigation was focusing on selected trading activities by Maple GmbH and some of its former employees, primarily during taxation years 2006 to 2010. The German authorities have alleged that these trading activities, often referred to as "cum/ex trading," violated German tax laws. Neither the Bank nor its employees were involved in these trading activities and, to the Bank's knowledge, are not the subject of this investigation. At that time, the Bank announced that if it were determined that portions of the dividends it received from Maple could be reasonably attributed to tax fraud by Maple GmbH, arrangements would be made to repay those amounts to the relevant authority.

On February 6, 2016, the German Federal Financial Supervisory Authority, BaFin, placed a moratorium on the business activities of Maple GmbH preventing it from carrying out its normal business activities. In August 2016, Maple filed for bankruptcy protection under applicable Canadian laws, and a trustee was appointed to administer the company. Similar proceedings were initiated for each of Maple's other material subsidiaries in their home jurisdictions. In light of the situation, the Bank wrote off the carrying value of its equity interest in Maple in an amount of \$164 million (\$145 million net of income taxes) during the first quarter of 2016. The \$164 million write-off of the equity interest in this associate was recognized in the *Non-interest income – Other* item of the Consolidated Statement of Income for the year ended October 31, 2016 and was reported in the Financial Markets segment.

While there has not yet been a determination of tax fraud on the part of Maple GmbH or its employees, in the insolvency proceedings of Maple GmbH the German finance office issued a declaration about the result of the tax audit at Maple GmbH and about the relevant tax consequences of the cum/ex trading and concluded a final tax claim of the tax authorities against the insolvency administrator. This claim was approved by the Maple GmbH creditor assembly.

The Bank has been in contact with the German prosecutors, who have confirmed that, in their view based upon the evidence they have considered since the occurrence of the insolvency, the Bank was not involved in any respect with the alleged tax fraud undertaken by Maple GmbH nor was it negligent in failing to identify that alleged fraud. Further to discussions between the Bank and the German prosecutors concerning the amounts deemed attributable to the alleged tax fraud, the Bank paid 7.7 million euros to the German tax authorities on November 19, 2019. As at October 31, 2019, an \$11 million provision was recorded to reflect this adjusting event after the Consolidated Balance Sheet date.

In December 2019, the Bank, together with the other principal Maple shareholders, reached an agreement with the bankruptcy and insolvency administrator of Maple GmbH to settle any potential claims that might be asserted against them by or on behalf of Maple GmbH. In connection with the settlement, the Bank agreed to pay 8.7 million euros for the benefit of Maple GmbH's creditors and, during the first quarter of 2020, recorded a \$13 million charge in the *Non-interest expenses – Other* item presented in the *Other* heading of segment results. During the third quarter of 2020, by virtue of the finalization of this agreement, all material liabilities associated with the Bank's ownership of Maple have been resolved.

## Litigation

In the normal course of business, the Bank and its subsidiaries are involved in various claims relating, among other matters, to loan portfolios, investment portfolios and supplier agreements, including court proceedings, investigations or claims of a regulatory nature, class actions or other legal remedies of varied natures.

More specifically, the Bank is involved as a defendant in class actions instituted by consumers contesting, *inter alia*, certain transaction fees or who wish to avail themselves of certain legislative provisions relating to consumer protection. The recent developments in the main legal proceedings involving the Bank are as follows:

### Watson

In 2011, a class action was filed in the Supreme Court of British Columbia against Visa Corporation Canada (Visa) and MasterCard International Incorporated (MasterCard) (the Networks) as well as National Bank and a number of other Canadian financial institutions. A similar action was also initiated in Quebec, Ontario, Alberta and Saskatchewan. In each of the actions, the Networks and financial institutions are alleged to have been involved in a price-fixing system to maintain and increase the fees paid by merchants on transactions executed using the credit cards of the Networks. In so doing, they would notably be in breach of the *Competition Act*. An unspecified amount of compensatory and punitive damages is being claimed. In 2017, a settlement was reached with the plaintiffs; in 2018 it was approved by the trial courts in each of the five jurisdictions where the action was initiated. The rulings approving the settlement are now the subject of appeal proceedings in multiple jurisdictions.

### Defrance

On January 21, 2019, the Quebec Superior Court authorized a class action against the National Bank and several other Canadian financial institutions. The originating application was served to the Bank on April 23, 2019. The class action was initiated on behalf of consumers residing in Quebec. The plaintiffs allege that non-sufficient funds charges, billed by all of the defendants when a payment order is refused due to non-sufficient funds, are illegal and prohibited by the *Consumer Protection Act*. The plaintiffs are claiming, in the form of damages, the repayment of these charges as well as punitive damages.

It is impossible to determine the outcome of the claims instituted or which may be instituted against the Bank and its subsidiaries. The Bank estimates, based on the information at its disposal, that while the amount of contingent liabilities pertaining to these claims, taken individually or in the aggregate, could have a material impact on the Bank's consolidated results of operation for a particular period, it would not have a material adverse impact on the Bank's consolidated financial position.

Provisions are liabilities of uncertain timing and amount. A provision is recognized when the Bank has a present obligation (legal or constructive) arising from a past event, when it is probable that an outflow of economic resources will be required to settle the obligation and when the amount of the obligation can be reliably estimated. Provisions are based on the Bank's best estimates of the economic resources required to settle the present obligation, given all relevant risks and uncertainties, and, when it is significant, the effect of the time value of money.

The recognition of a litigation provision requires the Bank's management to assess the probability of loss and estimate any potential monetary impact. The Bank examines each litigation provision individually by considering the development of each case, its past experience in similar transactions and the opinion of its legal counsel. Each new piece of information can alter the Bank's assessment as to the probability and estimated amount of the loss and the extent to which it adjusts the recorded provision. Moreover, the actual settlement cost of these litigations can be significantly higher or lower than the amounts recognized.

## Structured Entities

In the normal course of business, the Bank enters into arrangements and transactions with structured entities. Structured entities are entities designed so that voting or similar rights are not the dominant factor in deciding who controls the entity, such as when voting rights relate solely to administrative tasks and the relevant activities are directed by means of contractual arrangements. A structured entity is consolidated when the Bank concludes, after evaluating the substance of the relationship and its right or exposure to variable returns, that it controls that entity. Management must exercise judgment in determining whether the Bank controls an entity. Additional information is provided in the Securitization and Off-Balance-Sheet Arrangements section of this MD&A and in Note 27 to the consolidated financial statements.

## Future Accounting Policy Changes

The Bank closely monitors both new accounting standards and amendments to existing accounting standards issued by the IASB. The following standards have been issued but are not yet effective. The Bank is currently assessing the impact of the application of these standards on the consolidated financial statements.

### Effective Date – November 1, 2020

#### *Conceptual Framework for Financial Reporting*

On March 29, 2018, the IASB published *Conceptual Framework for Financial Reporting* to replace its 2010 conceptual framework. For the IASB, the revised conceptual framework has been in effect since its publication date.

### Effective Date – November 1, 2021

#### *Interest Rate Benchmark Reform – Phase 2*

In August 2020, the IASB finalized its response to the ongoing reform of interbank offered rates (IBOR) and other interest rate benchmarks by issuing amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 – *Insurance Contracts* and IFRS 16. The amendments complement those issued in 2019 and focus on the effects on financial statements once existing benchmark rates are replaced with alternative benchmark rates. The amendments in this final phase relate to changes to contractual cash flows, hedge accounting, and disclosures. The effective date for the amendments will be annual periods beginning on or after January 1, 2021, with early application permitted.

To prepare for the interest rate benchmark reform, the Bank developed an enterprise-wide project, put together a dedicated team and established a formal governance structure. Several committees were created to ensure the success of the project and to prepare for the benchmark interest rate reform. The project team is made up of qualified resources from different fields of expertise to ensure an in-depth analysis of all aspects of the changes as well as the financial, operational and technological impacts. Many of these experts, who have in-depth knowledge of accounting standards and reform-related activities, are involved in the Canadian Bankers Association's working group where representatives of the major Canadian banks discuss the issues and interpretations of the reform. The Bank also participates in meetings with the OSFI to discuss these same issues and interpretations. Furthermore, workshops are held to analyze the impact of the reform's implementation, ensuring that information is disseminated to stakeholders affected by this reform; information-sharing meetings are held with all stakeholders affected by the reform, and participants in various industry committees share the latest developments. The project team regularly reports on the project's progress to the project steering committee and the Financial Markets Risk Committee, committees made up of members of management and experts from all departments involved. Finally, a training plan for staff, management and board members has been created.

### Effective Date – November 1, 2023

#### *IFRS 17 – Insurance Contracts*

In May 2017, the IASB issued IFRS 17 – *Insurance Contracts* (IFRS 17), a new standard that replaces IFRS 4, the current insurance contract accounting standard. IFRS 17 introduces a new accounting framework that will improve the comparability and quality of financial information. IFRS 17 provides guidance on the recognition, measurement, presentation and disclosure of insurance contracts. In June 2020, amendments to IFRS 17 were issued and included a two-year deferral of the effective date along with other changes aimed at addressing concerns and implementation challenges identified after IFRS 17 was published in 2017. IFRS 17, as amended, is effective retrospectively for annual periods beginning on or after January 1, 2023, with earlier application permitted. If full retrospective application to a group of insurance contracts is impractical, the modified retrospective approach or the fair value approach may be used.

## Additional Financial Information

### Table 1 – Quarterly Results

(millions of Canadian dollars, except per share amounts)	2020				
	Total	Q4	Q3	Q2	Q1
<b>Statement of income data</b>					
Net interest income	4,255	1,124	1,096	1,105	930
Non-interest income <sup>(1)</sup>	3,672	876	872	931	993
<b>Total revenues</b>	<b>7,927</b>	<b>2,000</b>	<b>1,968</b>	<b>2,036</b>	<b>1,923</b>
Non-interest expenses <sup>(2)</sup>	4,545	1,259	1,074	1,121	1,091
Income before provisions for credit losses and income taxes	3,382	741	894	915	832
Provisions for credit losses	846	110	143	504	89
Income taxes	453	139	149	32	133
<b>Net income</b>	<b>2,083</b>	<b>492</b>	<b>602</b>	<b>379</b>	<b>610</b>
Non-controlling interests	42	2	13	11	16
<b>Net income attributable to the Bank's shareholders and holders of other equity instruments</b>	<b>2,041</b>	<b>490</b>	<b>589</b>	<b>368</b>	<b>594</b>
<b>Earnings per common share</b>					
Basic	\$ 5.73	\$ 1.37	\$ 1.67	\$ 1.01	\$ 1.69
Diluted	5.70	1.36	1.66	1.01	1.67
<b>Dividends (per share)</b>					
Common	\$ 2.84	\$ 0.71	\$ 0.71	\$ 0.71	\$ 0.71
Preferred					
Series 30	1.0063	0.2516	0.2516	0.2515	0.2516
Series 32	0.9636	0.2400	0.2399	0.2399	0.2438
Series 34	1.4000	0.3500	0.3500	0.3500	0.3500
Series 36	1.3500	0.3375	0.3375	0.3375	0.3375
Series 38	1.1125	0.2781	0.2781	0.2782	0.2781
Series 40	1.1500	0.2875	0.2875	0.2875	0.2875
Series 42	1.2375	0.3094	0.3093	0.3094	0.3094
<b>Return on common shareholders' equity</b>	<b>14.9 %</b>	<b>13.7 %</b>	<b>17.0 %</b>	<b>10.7 %</b>	<b>18.0 %</b>
<b>Total assets</b>		<b>331,625</b>	<b>322,453</b>	<b>316,950</b>	<b>289,191</b>
<b>Long-term financial liabilities<sup>(3)</sup></b>		<b>775</b>	<b>777</b>	<b>779</b>	<b>774</b>
<b>Net impaired loans<sup>(4)</sup></b>		<b>465</b>	<b>453</b>	<b>479</b>	<b>436</b>
<b>Number of common shares outstanding (thousands)</b>					
Average – Basic	335,508	335,859	335,552	335,603	335,020
Average – Diluted	337,580	338,264	337,231	337,317	338,113
End of period		335,998	335,666	335,400	335,818
<b>Per common share</b>					
Book value		\$ 39.97	\$ 38.91	\$ 38.74	\$ 37.58
Share price					
High	\$ 74.79	72.85	65.54	74.79	74.22
Low	38.73	62.99	51.38	38.73	68.25
<b>Number of employees – Worldwide</b>		<b>26,517</b>	<b>26,544</b>	<b>26,589</b>	<b>26,314</b>
<b>Number of branches in Canada</b>		<b>403</b>	<b>409</b>	<b>413</b>	<b>416</b>

(1) For fiscal 2020, the *Non-interest income* item includes a foreign currency loss on disposal of subsidiaries of \$24 million (2019: \$79 million gain on disposal of Fiera Capital Corporation shares, a \$50 million gain on disposal of premises and equipment, and a \$33 million loss resulting from the fair value measurement of an investment).

(2) For fiscal 2020, the *Non-interest expenses* item includes \$71 million in impairment losses on premises and equipment and on intangible assets (2019: \$57 million), \$48 million in severance pay (2019: \$10 million), a \$13 million charge related to Maple (2019: \$11 million). An amount of \$45 million in provisions for onerous contracts was also recorded in 2019.

(3) Subordinated debt.

(4) All loans classified in Stage 3 of the expected credit loss model are impaired loans; the net impaired loans presented in this table exclude POCI loans.

2019										2018				
Total	Q4	Q3	Q2	Q1	Total	Q4	Q3	Q2	Q1	Total	Q4	Q3	Q2	Q1
3,596	936	855	942	863	3,382	826	837	885	834	3,784	988	955	869	972
3,836	979	1,093	828	936	3,784	988	955	869	972	3,784	988	955	869	972
7,432	1,915	1,948	1,770	1,799	7,166	1,814	1,792	1,754	1,806	7,166	1,814	1,792	1,754	1,806
4,301	1,095	1,154	1,026	1,026	4,063	1,036	1,011	992	1,024	4,063	1,036	1,011	992	1,024
3,131	820	794	744	773	3,103	778	781	762	782	3,103	778	781	762	782
347	89	86	84	88	327	73	76	91	87	327	73	76	91	87
462	127	100	102	133	544	139	136	124	145	544	139	136	124	145
2,322	604	608	558	552	2,232	566	569	547	550	2,232	566	569	547	550
66	14	17	19	16	87	16	23	25	23	87	16	23	25	23
2,256	590	591	539	536	2,145	550	546	522	527	2,145	550	546	522	527
\$ 6.39	\$ 1.68	\$ 1.68	\$ 1.52	\$ 1.51	\$ 6.01	\$ 1.53	\$ 1.54	\$ 1.46	\$ 1.48	\$ 6.01	\$ 1.53	\$ 1.54	\$ 1.46	\$ 1.48
6.34	1.67	1.66	1.51	1.50	5.94	1.52	1.52	1.44	1.46	5.94	1.52	1.52	1.44	1.46
\$ 2.66	\$ 0.68	\$ 0.68	\$ 0.65	\$ 0.65	\$ 2.44	\$ 0.62	\$ 0.62	\$ 0.60	\$ 0.60	\$ 2.44	\$ 0.62	\$ 0.62	\$ 0.60	\$ 0.60
1.0156	0.2515	0.2516	0.2562	0.2563	1.0250	0.2562	0.2563	0.2562	0.2563	1.0250	0.2562	0.2563	0.2562	0.2563
0.9750	0.2437	0.2438	0.2437	0.2438	0.9750	0.2437	0.2438	0.2437	0.2438	0.9750	0.2437	0.2438	0.2437	0.2438
1.4000	0.3500	0.3500	0.3500	0.3500	1.4000	0.3500	0.3500	0.3500	0.3500	1.4000	0.3500	0.3500	0.3500	0.3500
1.3500	0.3375	0.3375	0.3375	0.3375	1.3500	0.3375	0.3375	0.3375	0.3375	1.3500	0.3375	0.3375	0.3375	0.3375
1.1125	0.2781	0.2781	0.2782	0.2781	1.1125	0.2781	0.2781	0.2782	0.2781	1.1125	0.2781	0.2781	0.2782	0.2781
1.1500	0.2875	0.2875	0.2875	0.2875	0.9310	0.2875	0.2875	0.3560	-	0.9310	0.2875	0.2875	0.3560	-
1.2375	0.3094	0.3093	0.3094	0.3094	0.5323	0.5323	-	-	-	0.5323	0.5323	-	-	-
18.0 %	18.2 %	18.7 %	17.8 %	17.2 %	18.4 %	17.8 %	18.4 %	18.6 %	18.7 %	18.4 %	17.8 %	18.4 %	18.6 %	18.7 %
281,458	276,312	269,106	263,355	263,355	262,471	257,637	256,259	251,065	251,065	262,471	257,637	256,259	251,065	251,065
773	773	772	764	764	747	753	755	8	8	747	753	755	8	8
450	420	379	373	373	404	413	382	371	371	404	413	382	371	371
335,104	334,393	334,843	335,478	335,716	339,372	337,508	339,160	339,885	340,950	339,372	337,508	339,160	339,885	340,950
337,630	336,900	337,768	338,515	338,585	343,240	341,395	343,280	343,900	345,458	343,240	341,395	343,280	343,900	345,458
	334,172	334,210	335,116	335,500		335,071	337,441	339,348	340,390		335,071	337,441	339,348	340,390
	\$ 36.89	\$ 36.12	\$ 35.49	\$ 34.85		\$ 34.40	\$ 33.91	\$ 32.64	\$ 31.75		\$ 34.40	\$ 33.91	\$ 32.64	\$ 31.75
\$ 68.02	68.02	64.16	63.82	61.80	\$ 65.63	65.63	64.29	64.08	65.35	\$ 65.63	65.63	64.29	64.08	65.35
54.97	60.38	60.71	60.31	54.97	58.69	58.93	61.26	58.69	62.33	58.69	58.93	61.26	58.69	62.33
	25,487	24,881	24,137	23,960		23,450	23,029	22,359	21,868		23,450	23,029	22,359	21,868
	422	429	428	428		428	428	428	429		428	428	428	429

## Table 2 – Overview of Results

Year ended October 31 (taxable equivalent basis) <sup>(1)</sup> (millions of Canadian dollars)	2020	2019	2018	2017	2016
Net interest income on a taxable equivalent basis	4,463	3,791	3,526	3,645	3,436
Non-interest income on a taxable equivalent basis <sup>(2)</sup>	3,729	3,971	3,885	3,208	2,639
Total revenues on a taxable equivalent basis	8,192	7,762	7,411	6,853	6,075
Non-interest expenses <sup>(3)</sup>	4,545	4,301	4,063	3,857	3,875
Income before provisions for credit losses and income taxes on a taxable equivalent basis <sup>(1)</sup>	3,647	3,461	3,348	2,996	2,200
Provisions for credit losses	846	347	327	244	484
Income before income taxes on a taxable equivalent basis	2,801	3,114	3,021	2,752	1,716
Income taxes on a taxable equivalent basis	718	792	789	728	460
Net income	2,083	2,322	2,232	2,024	1,256
Non-controlling interests	42	66	87	84	75
Net income attributable to the Bank's shareholders and holders of other equity instruments	2,041	2,256	2,145	1,940	1,181
Average assets	318,199	286,162	265,940	248,351	235,913

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

(2) For fiscal 2020, the *Non-interest income* item includes a foreign currency translation loss on disposal of subsidiaries of \$24 million (2019: \$79 million gain on disposal of Fiera Capital Corporation shares, \$50 million gain on disposal of premises and equipment, and \$33 million loss resulting from the fair value measurement of an investment).

(3) For fiscal 2020, the *Non-interest expenses* item includes \$71 million in impairment losses on premises and equipment and on intangible assets (2019: \$57 million), \$48 million in severance pay (2019: \$10 million), \$13 million charge related to Maple (2019: \$11 million). An amount of \$45 million in provisions for onerous contracts was also recorded in 2019.

## Table 3 – Changes in Net Interest Income

Year ended October 31 <sup>(1)</sup> (taxable equivalent basis) <sup>(2)</sup> (millions of Canadian dollars)	2020	2019	2018	2017	2016
<b>Personal and Commercial</b>					
Net interest income	2,445	2,384	2,276	2,127	2,011
Average assets	117,338	112,798	106,857	102,139	97,741
Average interest-bearing assets	111,488	106,995	101,446	97,339	92,660
Net interest margin <sup>(3)</sup>	2.19 %	2.23 %	2.24 %	2.19 %	2.17 %
<b>Wealth Management</b>					
Net interest income on a taxable equivalent basis	442	455	426	351	291
Average assets	5,917	6,219	6,167	5,947	5,612
<b>Financial Markets</b>					
Net interest income on a taxable equivalent basis	946	474	409	772	938
Average assets	123,943	112,493	100,721	94,991	87,491
<b>USSF&amp;I</b>					
Net interest income	807	656	584	466	284
Average assets	14,336	10,985	9,270	7,519	5,319
<b>Other</b>					
Net interest income on a taxable equivalent basis	(177)	(178)	(169)	(71)	(88)
Average assets	56,665	43,667	42,925	37,755	39,750
<b>Total</b>					
Net interest income on a taxable equivalent basis	4,463	3,791	3,526	3,645	3,436
Average assets	318,199	286,162	265,940	248,351	235,913

(1) For fiscal years prior to 2020, certain amounts have been reclassified.

(2) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

(3) Net interest margin is calculated by dividing net interest income by average interest-bearing assets.

## Table 4 – Non-Interest Income

Year ended October 31

(taxable equivalent basis)<sup>(1)</sup>

(millions of Canadian dollars)

	2020	2019	2018	2017	2016
Underwriting and advisory fees	397	314	388	349	376
Securities brokerage commissions	195	178	195	216	235
Mutual fund revenues	477	449	438	412	364
Trust service revenues	675	609	587	518	453
Credit fees	147	134	126	130	110
Revenues from acceptances, letters of credit and guarantee	320	283	277	231	236
Card revenues	138	175	159	132	119
Deposit and payment service charges	262	271	280	279	258
Trading revenues (losses) on a taxable equivalent basis	661	964	941	409	154
Gains (losses) on available-for-sale securities, net				140	70
Gains (losses) on non-trading securities, net	93	77	77		
Insurance revenues, net	128	136	121	117	114
Foreign exchange revenues, other than trading	104	96	95	81	81
Share in the net income of associates and joint ventures	28	34	28	35	15
Other <sup>(2)</sup>	104	251	173	159	54
	<b>3,729</b>	<b>3,971</b>	<b>3,885</b>	<b>3,208</b>	<b>2,639</b>
Canada	3,631	3,780	3,589	3,027	2,434
United States	5	85	108	136	124
Other countries	93	106	188	45	81
Non-interest income on a taxable equivalent basis as a % of total revenues on a taxable equivalent basis <sup>(1)</sup>	45.5 %	51.2 %	52.4 %	46.8 %	43.4 %
Non-interest income on a taxable equivalent basis and excluding specified items as a % of total revenues on a taxable equivalent basis and excluding specified items <sup>(1)</sup>	45.7 %	50.5 %	52.4 %	46.8 %	45.0 %

(1) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

(2) For fiscal 2020, other revenues include a foreign currency translation loss on disposal of subsidiaries of \$24 million (2019: \$79 million gain on disposal of Fiera Capital Corporation shares, \$50 million gain on disposal of premises and equipment, and \$33 million loss resulting from the fair value measurement of an investment).

## Table 5 – Trading Activity Revenues<sup>(1)</sup>

Year ended October 31<sup>(2)</sup>

(taxable equivalent basis)<sup>(3)</sup>

(millions of Canadian dollars)

	2020	2019	2018	2017	2016
<b>Financial markets</b>					
Equities	706	621	575	506	450
Fixed-income	430	285	263	290	256
Commodities and foreign exchange	132	126	130	107	121
	<b>1,268</b>	<b>1,032</b>	<b>968</b>	<b>903</b>	<b>827</b>
<b>Other segments</b>	<b>198</b>	<b>160</b>	<b>176</b>	<b>97</b>	<b>80</b>
	<b>1,466</b>	<b>1,192</b>	<b>1,144</b>	<b>1,000</b>	<b>907</b>

(1) Includes net interest income on a taxable equivalent basis and non-interest income on a taxable equivalent basis.

(2) For fiscal years prior to 2020, certain amounts have been reclassified.

(3) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

## Table 6 – Non-Interest Expenses

Year ended October 31 (millions of Canadian dollars)	2020	2019	2018	2017	2016
Compensation and employee benefits <sup>(1)</sup>	2,713	2,532	2,466	2,358	2,161
Occupancy <sup>(2)</sup>	151	254	193	195	195
Technology	433	372	375	364	367
Amortization – Premises and equipment	140	44	43	41	38
Amortization – Technology <sup>(3)</sup>	372	332	245	204	220
Communications	58	62	63	61	67
Professional fees	244	249	244	254	276
Restructuring charge <sup>(4)</sup>	–	–	–	–	131
Travel and business development	103	128	128	122	120
Capital and payroll taxes	73	70	79	73	71
Other <sup>(5)</sup>	258	258	227	185	229
<b>Total</b>	<b>4,545</b>	<b>4,301</b>	<b>4,063</b>	<b>3,857</b>	<b>3,875</b>
Canada	4,124	3,931	3,750	3,571	3,601
United States	209	210	205	209	235
Other countries	212	160	108	77	39
Non-interest expenses as a % of total revenues on a taxable equivalent basis <sup>(6)</sup>	55.5 %	55.4 %	54.8 %	56.3 %	63.8 %
Non-interest expenses as a % of total revenues on a taxable equivalent basis and excluding specified items <sup>(6)</sup>	53.7 %	54.5 %	54.8 %	56.3 %	58.6 %

(1) For fiscal 2020, compensation and employee benefits include \$48 million in severance pay (2019: \$10 million).

(2) For fiscal 2019, occupancy expense had included \$45 million in provisions for onerous contracts.

(3) For fiscal 2020, the *Amortization – Technology* expense includes \$71 million in impairment losses on premises and equipment and on intangible assets (2019: \$57 million; 2016: \$44 million).

(4) The fiscal 2016 restructuring charge had included \$129 million in compensation and employee benefits and \$2 million in occupancy expenses.

(5) For fiscal 2020, other expenses include a \$13 million charge related to Maple (2019: \$11 million); the fiscal 2016 other expenses had included \$25 million in litigation charges.

(6) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

## Table 7 – Provisions for Credit Losses<sup>(1)</sup>

Year ended October 31 (millions of Canadian dollars)	2020	2019	2018	2017 <sup>(2)</sup>	2016 <sup>(2)</sup>
<b>Personal Banking<sup>(3)</sup></b>					
Stage 3	147	166	158	153	156
Stages 1 and 2	121	8	9	–	–
	<b>268</b>	174	167	153	156
<b>Commercial Banking</b>					
Stage 3	110	35	40	43	73
Stages 1 and 2 <sup>(4)</sup>	139	28	21	(40)	250
	<b>249</b>	63	61	3	323
<b>Wealth Management</b>					
Stage 3	4	–	–	–	1
Stages 1 and 2	3	–	1	–	–
	<b>7</b>	–	1	–	1
<b>Financial Markets</b>					
Stage 3	65	18	–	–	–
Stages 1 and 2	174	12	4	–	–
	<b>239</b>	30	4	–	–
<b>USSF&amp;I</b>					
Stage 3	46	94	126	48	4
Stages 1 and 2	41	(24)	(3)	–	–
POCI loans	(7)	10	(29)	–	–
	<b>80</b>	80	94	48	4
<b>Other</b>					
Stage 3	–	–	–	–	–
Stages 1 and 2 <sup>(5)</sup>	3	–	–	40	–
	<b>3</b>	–	–	40	–
<b>Total provisions for credit losses</b>	<b>846</b>	347	327	244	484
Average loans and acceptances	<b>159,275</b>	148,765	139,603	130,882	122,559
Provisions for credit losses on impaired loans <sup>(1)</sup> as a % of average loans and acceptances	<b>0.23 %</b>	0.21 %	0.23 %	0.19 %	0.19 %
Provisions for credit losses as a % of average loans and acceptances	<b>0.53 %</b>	0.23 %	0.23 %	0.19 %	0.39 %

(1) Given the adoption of IFRS 9, all loans classified in Stage 3 of the expected credit loss model are impaired loans. Under IAS 39, loans were considered impaired according to different criteria. Provisions for credit losses on impaired loans presented in this table exclude provisions for credit losses on POCI loans.

(2) These figures are presented in accordance with IAS 39.

(3) Includes credit card receivables.

(4) During fiscal 2017, the Bank recorded a \$40 million reversal of the sectoral provision on non-impaired loans that had been taken collectively for the oil and gas producer and service company loan portfolio. In addition, the fiscal 2016 provisions for credit losses had included a \$250 million amount related to the initial recording of this sectoral provision.

(5) During fiscal 2017, the provisions for credit losses had included a \$40 million increase in the collective allowance for credit risk on non-impaired loans, which was established taking into account the Bank's overall credit portfolio, except for loans covered by the sectoral allowance and POCI loans.

## Table 8 – Change in Average Volumes

Year ended October 31<sup>(1)</sup>  
(taxable equivalent basis)<sup>(2)</sup>  
(millions of Canadian dollars)

	2020		2019		2018		2017		2016	
	Average volume \$	Rate %	Average volume \$	Rate %	Average volume \$	Rate %	Average volume \$	Rate %	Average volume \$	Rate %
<b>Assets</b>										
Deposits with financial institutions	16,083	0.55	13,149	1.64	16,282	1.27	15,802	0.72	14,079	0.46
Securities	97,025	1.84	85,772	1.97	75,923	1.64	66,591	1.75	60,784	1.98
Securities purchased under reverse repurchase agreements and securities borrowed	16,408	1.39	22,472	1.60	20,090	1.09	19,878	1.03	19,038	0.75
Residential mortgage loans	59,801	3.13	54,493	3.30	51,509	3.07	50,218	2.82	44,908	2.78
Personal loans	36,273	3.68	35,816	4.25	35,041	3.98	33,298	3.65	31,781	3.30
Credit card receivables	1,995	14.62	2,221	14.06	2,165	13.69	2,209	13.09	2,107	12.88
Business and government loans	53,325	3.37	47,986	4.42	42,803	4.09	37,794	3.33	34,227	2.98
POCI loans	1,073	16.45	1,386	13.37	1,486	13.12	1,238	15.18	1,545	14.01
Interest-bearing assets	281,983	2.69	263,295	3.12	245,299	2.81	227,028	2.58	208,469	2.50
Other assets	36,216		22,867		20,641		21,323		27,444	
<b>Total assets</b>	<b>318,199</b>	<b>2.39</b>	<b>286,162</b>	<b>2.87</b>	<b>265,940</b>	<b>2.60</b>	<b>248,351</b>	<b>2.36</b>	<b>235,913</b>	<b>2.12</b>
<b>Liabilities and equity</b>										
Personal deposits	63,634	0.87	58,680	1.22	53,179	1.08	50,878	0.99	46,815	1.09
Deposit-taking institutions	6,494	0.63	5,987	1.80	5,985	1.45	7,567	0.69	12,469	0.39
Other deposits	137,253	1.26	119,793	2.06	108,012	1.66	95,809	1.21	83,568	1.12
Subordinated debt	207,381	1.12	184,460	1.79	167,176	1.47	154,254	1.11	142,852	1.04
Obligations other than deposits	759	3.25	758	3.25	564	3.20	423	3.81	1,047	3.16
Interest-bearing liabilities	49,671	0.65	47,404	1.35	47,762	1.20	44,204	0.74	38,804	0.31
Other liabilities	257,811	1.23	232,622	1.90	215,502	1.57	198,881	1.11	182,703	0.98
Equity	44,702		38,827		36,492		36,722		41,627	
Liabilities and equity	15,686		14,713		13,946		12,748		11,583	
<b>Liabilities and equity</b>	<b>318,199</b>	<b>1.00</b>	<b>286,162</b>	<b>1.55</b>	<b>265,940</b>	<b>1.27</b>	<b>248,351</b>	<b>0.89</b>	<b>235,913</b>	<b>0.76</b>
<b>Net interest margin</b>	<b>1.39</b>		<b>1.32</b>		<b>1.33</b>		<b>1.47</b>		<b>1.36</b>	

(1) For fiscal years prior to 2020, certain amounts have been reclassified.

(2) See the Financial Reporting Method section on pages 22 and 23 for additional information on non-GAAP financial measures.

**Table 9 – Distribution of Gross Loans and Acceptances by Borrower Category Under Basel Asset Classes**

As at October 31										
(millions of Canadian dollars)										
	2020		2019		2018		2017		2016	
	\$	%	\$	%	\$	%	\$	%	\$	%
Residential mortgage <sup>(1)(2)</sup>	81,543	49.2	74,448	48.4	70,591	48.1	66,398	48.4	58,265	45.2
Qualifying revolving retail	3,599	2.2	4,099	2.7	4,211	2.9	4,217	3.1	4,178	3.2
Other retail	11,569	7.0	11,606	7.5	12,246	8.3	12,150	8.9	10,316	8.0
Agriculture	6,696	4.0	6,308	4.1	5,759	3.9	4,923	3.6	4,599	3.6
Oil and gas, and pipelines	5,052	3.0	4,329	2.8	4,056	2.8	3,364	2.5	3,595	2.8
Mining	756	0.5	758	0.5	1,032	0.7	470	0.3	582	0.5
Utilities	4,352	2.6	3,372	2.2	2,715	1.9	2,347	1.7	1,814	1.4
Non-real-estate construction <sup>(3)</sup>	1,079	0.7	1,168	0.8	1,049	0.7	1,336	1.0	1,147	0.9
Manufacturing	5,545	3.3	6,303	4.1	5,303	3.6	4,274	3.1	3,561	2.8
Wholesale	2,206	1.3	2,221	1.4	2,163	1.5	2,066	1.5	2,021	1.6
Retail	2,955	1.8	3,289	2.1	3,069	2.1	3,431	2.5	2,911	2.3
Transportation	1,528	0.9	1,682	1.1	1,452	1.0	1,425	1.0	1,565	1.2
Communications	1,184	0.7	1,614	1.0	1,597	1.1	1,662	1.2	1,578	1.2
Finance and insurance	4,347	2.6	4,335	2.8	4,732	3.2	4,932	3.6	3,872	3.0
Real estate and real-estate-construction <sup>(4)</sup>	14,171	8.6	11,635	7.6	11,629	7.9	10,418	7.6	9,458	7.3
Professional services	1,490	0.9	1,846	1.2	1,582	1.1	1,416	1.0	1,374	1.1
Education and health care	3,800	2.3	3,520	2.3	3,284	2.2	2,886	2.1	2,738	2.1
Other services	5,296	3.2	4,937	3.2	4,715	3.2	4,762	3.5	4,647	3.6
Government	1,160	0.7	1,071	0.7	1,445	1.0	1,452	1.1	1,201	0.9
Other <sup>(2)</sup>	6,715	4.0	4,222	2.7	2,534	1.7	1,233	0.9	7,537	5.9
POCI loans	855	0.5	1,166	0.8	1,576	1.1	1,990	1.4	1,846	1.4
	<b>165,898</b>	<b>100.0</b>	<b>153,929</b>	<b>100.0</b>	<b>146,740</b>	<b>100.0</b>	<b>137,152</b>	<b>100.0</b>	<b>128,805</b>	<b>100.0</b>

(1) Includes residential mortgage loans on one to four-unit dwellings (Basel definition) and home equity lines of credit.

(2) Since November 1, 2016, the loans acquired by the Financial Markets segment for securitization purposes, and reported in the *Other* category, are now being reported in the *Residential mortgage* category. Figures as at October 31, 2016 were not adjusted to reflect those modifications.

(3) Includes civil engineering loans, public-private partnership loans, and project finance loans.

(4) Includes residential mortgages on dwellings of five or more units and SME loans.

**Table 10 – Impaired Loans<sup>(1)</sup>**

As at October 31					
(millions of Canadian dollars)					
	2020	2019	2018	2017 <sup>(2)</sup>	2016 <sup>(2)</sup>
Net impaired loans <sup>(3)</sup>					
Personal Banking	206	187	199	81	89
Commercial Banking	206	222	187	121	190
Wealth Management	2	3	3	1	1
Financial Markets	21	23	–	–	–
USSF&I	30	15	15	3	1
Other	–	–	–	–	–
<b>Total net impaired loans</b>	<b>465</b>	<b>450</b>	<b>404</b>	<b>206</b>	<b>281</b>
Gross impaired loans	817	684	630	380	492
Allowances for credit losses on impaired loans	352	234	226		
Individual and collective allowances on impaired loans				174	211
<b>Net impaired loans<sup>(3)</sup></b>	<b>465</b>	<b>450</b>	<b>404</b>	<b>206</b>	<b>281</b>
Provisioning rate	43.1 %	34.2 %	35.9 %	45.8 %	42.9 %
As a % of loans and acceptances	0.3 %	0.3 %	0.3 %	0.2 %	0.2 %

(1) Given the adoption of IFRS 9, all loans classified in Stage 3 of the expected credit loss model are impaired loans. Under IAS 39, loans were considered impaired according to different criteria. The impaired loans presented in this table exclude POCI loans.

(2) These figures are presented in accordance with IAS 39.

(3) Net impaired loans are presented net of allowances for credit losses on Stage 3 loan amounts drawn.

## Table 11 – Allowances for Credit Losses

Year ended October 31 (millions of Canadian dollars)	2020	2019	2018	2017 <sup>(1)</sup>	2016 <sup>(1)</sup>
Balance at beginning	755	714	735	769	555
Provisions for credit losses	846	347	327	244	484
Write-offs	(294)	(351)	(367)	(320)	(282)
Disposals	–	(1)	(24)	–	–
Recoveries	44	52	45	13	13
Exchange and other movements	(8)	(6)	(2)	(11)	(1)
Balance at end	1,343	755	714	695	769
Composition of allowances:					
Allowances for credit losses on impaired loans <sup>(2)</sup>	352	234	226	174	211
Allowances for credit losses on non-impaired loans	872	501	498		
Allowances for credit losses on off-balance-sheet commitments and other assets	185	77	56		
Allowances for credit losses on POCI loans	(66)	(57)	(66)	(24)	(12)
Sectoral allowance on non-impaired loans – Oil and gas <sup>(3)</sup>				139	204
Collective allowance on non-impaired loans <sup>(4)</sup>				406	366

(1) These figures are presented in accordance with IAS 39.

(2) Given the adoption of IFRS 9, all loans classified in Stage 3 of the expected credit loss model are impaired loans. Under IAS 39, loans were considered impaired according to different criteria. Allowances for credit losses on impaired loans presented in this table exclude allowances for credit losses on POCI loans.

(3) The sectoral allowance on non-impaired loans – oil and gas was established collectively for the portfolio of loans to producers and service companies in the oil and gas sector.

(4) The collective allowance for credit risk on non-impaired loans was established taking into account the Bank's overall credit portfolio, except for loans covered by the sectoral allowance and POCI loans.

## Table 12 – Deposits

As at October 31 (millions of Canadian dollars)	2020		2019		2018		2017		2016	
	\$	%	\$	%	\$	%	\$	%	\$	%
Personal	67,499	31.3	60,065	31.7	55,688	32.6	52,175	33.3	51,163	36.0
Business and government	143,787	66.6	125,266	66.1	110,321	64.6	99,115	63.3	85,263	60.0
Deposit-taking institutions	4,592	2.1	4,235	2.2	4,821	2.8	5,381	3.4	5,640	4.0
Total	215,878	100.0	189,566	100.0	170,830	100.0	156,671	100.0	142,066	100.0
Canada	195,730	90.7	172,764	91.1	156,054	91.4	145,288	92.8	131,869	92.8
United States	8,126	3.7	6,907	3.7	6,048	3.5	5,825	3.7	4,442	3.1
Other countries	12,022	5.6	9,895	5.2	8,728	5.1	5,558	3.5	5,755	4.1
Total	215,878	100.0	189,566	100.0	170,830	100.0	156,671	100.0	142,066	100.0
Personal deposits as a % of total assets		20.4		21.3		21.2		21.2		22.0