U.S. Securities and Exchange Commission

Washington, D.C. 20549

Form 40-F

[Check one]

☐ **Registration statement pursuant to Section 12 of the Securities Exchange Act of 1934**

or

☒ **Annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934**

For the fiscal year ended October 31, 2021 Commission File Number 001-13354

BANK OF MONTREAL

(Exact name of Registrant as specified in its charter)

Not Applicable
(Translation of Registrant's name into English (if applicable))

Canada
(Province or other jurisdiction of incorporation or organization)

6029
(Primary Standard Industrial Classification Code Number (if applicable))

Not Applicable
(I.R.S. Employer Identification Number (if applicable))

100 King Street West, 1 First Canadian Place, Toronto, Ontario, Canada M5X 1A1 (416-867-6785)
(Address and telephone number of Registrant's principal executive offices)

Colleen Hennessy, Bank of Montreal, 111 West Monroe Street, Chicago, Illinois 60603 (312-497-6153)
(Name, address (including zip code) and telephone number (including area code) of agent for service in the United States)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title Of Each Class	Trading Symbol	Name Of Each Exchange On Which Registered
Common Shares	**BMO**	**New York Stock Exchange**

Securities registered or to be registered pursuant to Section 12(g) of the Act:

Not Applicable

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

Not Applicable

For annual reports, indicate by check mark the information filed with this Form:

☒ Annual information form ☒ Audited annual financial statements

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

Common Shares	648,172,993
Class B Preferred Shares Series 27 (Non-Viability Contingent Capital (NVCC))	20,000,000
Class B Preferred Shares Series 29 (Non-Viability Contingent Capital (NVCC))	16,000,000
Class B Preferred Shares Series 31 (Non-Viability Contingent Capital (NVCC))	12,000,000
Class B Preferred Shares Series 33 (Non-Viability Contingent Capital (NVCC))	8,000,000
Class B Preferred Shares Series 38 (Non-Viability Contingent Capital (NVCC))	24,000,000
Class B Preferred Shares Series 40 (Non-Viability Contingent Capital (NVCC))	20,000,000
Class B Preferred Shares Series 42 (Non-Viability Contingent Capital (NVCC))	16,000,000
Class B Preferred Shares Series 44 (Non-Viability Contingent Capital (NVCC))	16,000,000
Class B Preferred Shares Series 46 (Non-Viability Contingent Capital (NVCC))	14,000,000
Class B Preferred Shares Series 48 (Non-Viability Contingent Capital (NVCC))	1,250,000

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files).

Yes ☒ No ☐

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 12b-2 of the Exchange Act.

Emerging growth company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards† provided pursuant to Section 13(a) of the Exchange Act. ☐

† The term “new or revised financial accounting standard” refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

Yes ☒ No ☐

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DISCLOSURE CONTROLS AND PROCEDURES

The information provided under the heading “Management’s Annual Report on Disclosure Controls and Procedures and Internal Control over Financial Reporting — Disclosure Controls and Procedures” (page 121) contained in the Bank’s Management’s Discussion and Analysis for the fiscal year ended October 31, 2021 (“2021 MD&A”), filed as Exhibit 99.2 to this annual report on Form 40-F, is incorporated by reference herein.

INTERNAL CONTROL OVER FINANCIAL REPORTING

a. Management’s annual report on internal control over financial reporting

The information provided under the heading “Management’s Annual Report on Disclosure Controls and Procedures and Internal Control over Financial Reporting — Internal Control over Financial Reporting” (page 121) contained in the 2021 MD&A, filed as Exhibit 99.2 to this annual report on Form 40-F, is incorporated by reference herein.

b. Auditor’s attestation report on internal control over financial reporting

The Bank’s shareholders’ auditors, KPMG LLP, have issued an audit report on our internal control over financial reporting. This audit report appears on page 145 of the Bank’s Consolidated Financial Statements for the fiscal year ended October 31, 2021, filed as Exhibit 99.3 to this annual report on Form 40-F and is incorporated by reference herein.

c. Changes in internal control over financial reporting

The information provided under the heading “Management’s Annual Report on Disclosure Controls and Procedures and Internal Control over Financial Reporting — Changes in Internal Control over Financial Reporting” (page 121) contained in the 2021 MD&A, filed as Exhibit 99.2 to this annual report on Form 40-F, is incorporated by reference herein.

AUDIT AND CONDUCT REVIEW COMMITTEE FINANCIAL EXPERT

The information provided under the heading “Audit and Conduct Review Committee Information — Composition of the Audit and Conduct Review Committee” (pages 15 and 16) identifying the Bank’s Audit and Conduct Review Committee Financial Experts, and confirming the independence of the Audit and Conduct Review Committee Financial Experts, as set forth in the Bank’s Annual Information Form (dated December 3, 2021), filed as Exhibit 99.1 to this annual report on Form 40-F, is incorporated by reference herein.

CODE OF ETHICS

BMO’s Code of Conduct is its code of business conduct and ethics, which is applicable to every director and employee of the Bank. BMO’s Code of Conduct is available on the Bank’s website www.bmo.com and is available in print without charge to any shareholder upon request.

PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information provided under the heading “Shareholders’ Auditors’ Services and Fees — Shareholders’ Auditors’ Fees” and “— Pre-Approval Policies and Procedures” (page 120) contained in the 2021 MD&A, filed as Exhibit 99.2 to this annual report on Form 40-F, is incorporated by reference herein.

OFF-BALANCE SHEET ARRANGEMENTS

The information provided under the heading “Financial Condition Review – Off-Balance Sheet Arrangements” (pages 72 and 73) contained in the 2021 MD&A, filed as Exhibit 99.2 to this annual report on Form 40-F, is incorporated by reference herein.

CONTRACTUAL AND OTHER OBLIGATIONS

The information provided under the heading “Liquidity and Funding Risk – Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments” (pages 104 and 105) contained in the 2021 MD&A, filed as Exhibit 99.2 to this annual report on Form 40-F, is incorporated by reference herein.

IDENTIFICATION OF THE AUDIT AND CONDUCT REVIEW COMMITTEE

The information provided under the heading “Audit and Conduct Review Committee Information — Composition of the Audit and Conduct Review Committee” (pages 15 and 16) identifying the Bank’s Audit and Conduct Review Committee and confirming the independence of the Audit and Conduct Review Committee as set forth in the Bank’s Annual Information Form (dated December 3, 2021), filed as Exhibit 99.1 to this annual report on Form 40-F, is incorporated by reference herein.

SUMMARY OF SIGNIFICANT CORPORATE GOVERNANCE DIFFERENCES

A summary of significant ways corporate governance practices followed by the Bank differ from corporate governance practices required to be followed by U.S. domestic companies under The New York Stock Exchange’s listing standards (disclosure required by Section 303A.11 of the NYSE Listed Company Manual) and under The Nasdaq Stock Market’s listing standards (disclosure required by Section 5615(a)(3) of the Nasdaq Listing Rules) is available on the Bank’s website at www.bmo.com.

NOTE ON CERTAIN ACTIVITIES

During the year fiscal ended October 31, 2020, the Bank maintained a Canadian dollar personal chequing account and personal savings account with a Canadian resident citizen that appears on the Specially Designated Nationals (“SDN”) list of the U.S. Treasury Department’s Office of Foreign Assets Control (“OFAC”) under Executive Order 13224 (the “Executive Order”). The Bank had maintained these accounts and monitored their use, prohibiting access to U.S. currency and the U.S. financial system. The accounts were closed by the Bank in December 2019.

Pursuant to Section 13(r) of the Exchange Act, the Bank is required to disclose whether it or any of its affiliates knowingly engaged in certain activities, transactions or dealings with certain individuals or entities, including those listed on OFAC’s SDN list under the Executive Order. Disclosure is generally required even where the activities, transactions or dealings were conducted outside the U.S. in compliance with applicable law. The Bank was not prohibited from doing business with this customer under applicable law or regulation. Revenues and profits from this relationship was not calculated but would be considered negligible.

UNDERTAKING

Registrant undertakes to make available, in person or by telephone, representatives to respond to inquiries made by the Commission staff, and to furnish promptly, when requested to do so by the Commission staff, information relating to the securities in relation to which the obligation to file an annual report on Form 40-F arises or transactions in said securities.

SIGNATURES

Pursuant to the requirements of the Exchange Act, the Registrant certifies that it meets all of the requirements for filing on Form 40-F and has duly caused this annual report to be signed on its behalf by the undersigned, thereto duly authorized.

Registrant: BANK OF MONTREAL

By: /s/ Tayfun Tuzun
Tayfun Tuzun
Chief Financial Officer

Date: December 3, 2021

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99.3	Consolidated Financial Statements for the Fiscal Year Ended October 31, 2021
99.4	Consent of Independent Registered Public Accounting Firm dated December 3, 2021
99.5	Certifications of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
99.6	Certifications of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
99.7	Certifications pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101	Inline Interactive Data File
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Exhibit 99.1

BANK OF MONTREAL



ANNUAL INFORMATION FORM

FOR THE YEAR ENDED OCTOBER 31, 2021

Dated December 3, 2021

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[1] As indicated, parts of the Bank's Consolidated Financial Statements (2021 Financial Statements) and Management's Discussion and Analysis (2021 MD&A) for the fiscal year ended October 31, 2021 are incorporated by reference into this Annual Information Form. The 2021 Financial Statements and the 2021 MD&A are available on SEDAR (www.sedar.com).

EXPLANATORY NOTES AND CAUTIONS

Unless specifically stated otherwise in this Annual Information Form:

- all amounts are in Canadian dollars
- BMO Financial Group, the Bank, BMO, we, or our means Bank of Montreal and, as applicable, its subsidiaries
- information is as at October 31, 2021

Caution Regarding Forward-Looking Statements

Bank of Montreal's public communications often include written or oral forward-looking statements. Statements of this type are included in this document, and may be included in other filings with Canadian securities regulators or the U.S. Securities and Exchange Commission, or in other communications. All such statements are made pursuant to the "safe harbor" provisions of, and are intended to be forward-looking statements under, the United States Private Securities Litigation Reform Act of 1995 and any applicable Canadian securities legislation. Forward-looking statements in this document may include, but are not limited to, statements with respect to our objectives and priorities for fiscal 2022 and beyond, our strategies or future actions, our targets and commitments (including with respect to net zero emissions), expectations for our financial condition, capital position or share price, the regulatory environment in which we operate, the results of, or outlook for, our operations or for the Canadian, U.S. and international economies, and the COVID-19 pandemic, and include statements made by our management. Forward-looking statements are typically identified by words such as "will", "would", "should", "believe", "expect", "anticipate", "project", "intend", "estimate", "plan", "goal", "commit", "target", "may", "might", "schedule", "forecast" and "could" or negative or grammatical variations thereof.

By their nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, both general and specific in nature. There is significant risk that predictions, forecasts, conclusions or projections will not prove to be accurate, that our assumptions may not be correct, and that actual results may differ materially from such predictions, forecasts, conclusions or projections. The uncertainty created by the COVID-19 pandemic has heightened this risk, given the increased challenge in making assumptions, predictions, forecasts, conclusions or projections. We caution readers of this document not to place undue reliance on our forward-looking statements, as a number of factors – many of which are beyond our control and the effects of which can be difficult to predict – could cause actual future results, conditions, actions or events to differ materially from the targets, expectations, estimates or intentions expressed in the forward-looking statements.

The future outcomes that relate to forward-looking statements may be influenced by many factors, including, but not limited to: general economic and market conditions in the countries in which we operate, including labour challenges; the severity, duration and spread of the COVID-19 pandemic, and possibly other outbreaks of disease or illness, and its impact on local, national or international economies, as well as its heightening of certain risks that may affect our future results; information, privacy and cyber security, including the threat of data breaches, hacking, identity theft and corporate espionage, as well as the possibility of denial of service resulting from efforts targeted at causing system failure and service disruption; benchmark interest rate reforms; technological changes and technology resiliency; political conditions, including changes relating to, or affecting, economic or trade matters; climate change and other environmental and social risk; the Canadian housing market and consumer leverage; inflationary pressures; global supply-chain disruptions; changes in monetary, fiscal, or economic policy; changes in laws, including tax legislation and interpretation, or in supervisory expectations or requirements, including capital, interest rate and liquidity requirements and guidance, and the effect of such changes on funding costs; weak, volatile or illiquid capital or credit markets; the level of competition in the geographic and business areas in which we operate; judicial or regulatory proceedings; the accuracy and completeness of the information we obtain with respect to our customers and counterparties; failure of third parties to comply with their obligations to us; our ability to execute our strategic plans and to complete proposed acquisitions or dispositions, including obtaining regulatory approvals; critical accounting estimates and the effects of changes to accounting standards, rules and interpretations on these estimates; operational and infrastructure risks, including with respect to reliance on third parties; changes to our credit ratings; global capital markets activities; the possible effects on our business of war or terrorist activities; natural disasters and disruptions to public infrastructure, such as transportation, communications, power or water supply; and our ability to anticipate and effectively manage risks arising from all of the foregoing factors.

We caution that the foregoing list is not exhaustive of all possible factors. Other factors and risks could adversely affect our results. For more information, please refer to the discussion in the Risks That May Affect Future Results section, and the sections related to credit and counterparty, market, insurance, liquidity and funding, operational non-financial, legal and regulatory, strategic, environmental and social, and reputation risk, in the Enterprise-Wide Risk Management section of the 2021 MD&A, as may be updated in subsequently filed quarterly reports to shareholders, all of which outline certain key factors and risks that may affect our future results. Investors and others should carefully consider these factors and risks, as well as other uncertainties and potential events, and the inherent uncertainty of forward-looking statements. We do not undertake to update any forward-looking statements, whether written or oral, that may be made from time to time by the organization or on its behalf, except as required by law. The forward-looking information contained or incorporated by reference in this document is presented for the purpose of assisting shareholders and analysts in understanding our financial position as at and for the periods ended on the dates presented, as well as our strategic priorities and objectives, and may not be appropriate for other purposes.

Material economic assumptions underlying the forward-looking statements contained or incorporated by reference in this document are set out in the Economic Developments and Outlook section of the 2021 MD&A as well as in the Allowance for Credit Losses section of the 2021 MD&A, each as may be updated in subsequently filed quarterly reports to shareholders. Assumptions about the performance of the Canadian and U.S. economies, as well as overall market conditions and their combined effect on our business, are material factors we consider when determining our strategic priorities, objectives and expectations for our business. In determining our expectations for economic growth, we primarily consider historical economic data, past relationships between economic and financial variables, changes in government policies, and the risks to the domestic and global economy.

CORPORATE STRUCTURE

Bank of Montreal started business in Montreal in 1817 and was incorporated in 1821 by an Act of Lower Canada as the first Canadian chartered bank. Since 1871, the Bank has been a chartered bank under the *Bank Act* (Canada) (the Bank Act), and is named in Schedule I of the Bank Act. The Bank Act is the charter of the Bank and governs its operations.

The Bank's head office is 129 rue Saint Jacques, Montreal, Quebec, H2Y 1L6. Its executive offices are 100 King Street West, 1 First Canadian Place, Toronto, Ontario, M5X 1A1.

Bank of Montreal brands the organization's member companies as BMO Financial Group. Note 26 to the 2021 Financial Statements lists the intercorporate relationships among Bank of Montreal and its significant subsidiaries. The Bank incorporates this Note herein by reference. These subsidiaries are incorporated or organized under the laws of the state or country of their principal office, except for: BMO Financial Corp.; BMO Asset Management Corp.; BMO Capital Markets Corp.; BMO Harris Financing, Inc. and BMO Family Office, LLC, which are incorporated under the laws of the state of Delaware, United States; BMO Asset

Management (Holdings) plc[1] which is incorporated under the laws of Scotland, and BMO Harris Investment Company LLC which is organized under the laws of the state of Nevada, United States.

[1] This subsidiary was part of the sale of our EMEA asset management business which was completed on November 8, 2021.

GENERAL DEVELOPMENT OF THE BUSINESS

Three-Year History

As at October 31, 2021, BMO was the eighth largest bank in North America by assets.

On October 10, 2018, BMO announced the appointments of Patrick Cronin as Chief Risk Officer, BMO Financial Group and Dan Barclay as Group Head, BMO Capital Markets. Each of these appointments was effective November 1, 2018.

On November 1, 2019, BMO announced its intention to appoint George A. Cope as Chair of the Board of Bank of Montreal, which became effective following his re-election as an independent Director of the Bank at the Bank's March 31, 2020 Annual Meeting of Shareholders.

Effective January 1, 2021, Tayfun Tuzun was appointed Chief Financial Officer and Tom Flynn was appointed a Vice Chair. Also effective January 1, 2021, Sharon Haward-Laird was appointed General Counsel and Simon Fish was appointed Special Advisor to the CEO.

On October 28, 2021, BMO announced the appointment of Deland Kamanga as Group Head, BMO Wealth Management, effective November 1, 2021.

BMO has had common share buyback programs in place for several years. The 2019-2020 normal course issuer bid (NCIB) program expired on June 2, 2020. On February 25, 2020, BMO announced its intention, subject to the approval of Office of the Superintendent of Financial Institutions of Canada (OSFI) and the Toronto Stock Exchange, to establish a new NCIB that would permit BMO to purchase for cancellation up to 12 million common shares over a 12-month period, commencing on or about June 3, 2020. The renewal process was put on hold in light of OSFI's expectations, effective from March 13, 2020 to November 4, 2021, that federally regulated financial institutions not undertake common share repurchases. During the year ended October 31, 2019, we repurchased and cancelled 1 million of our common shares as part of the NCIB. During the years ended October 31, 2020 and 2021, the Bank did not repurchase any of its common shares for cancellation.

For additional information on the general development of BMO's business and its strategies for the upcoming year, see pages 20 and 38 to 57 of the 2021 MD&A, which pages the Bank incorporates herein by reference.

This Three-Year History section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements on page 2.

DESCRIPTION OF THE BUSINESS

Business

BMO Financial Group is a highly diversified financial services provider based in North America. BMO provides a broad range of products and services directly and through Canadian and non-Canadian subsidiaries, offices, and branches. As at October 31, 2021, BMO had over 12 million customers and approximately 44,000 full-time equivalent employees. The Bank has approximately 1,400 bank branches and more than 4,800 automated banking machines, as well as online and mobile digital banking platforms in Canada and the United States. It operates internationally in major financial markets and trading areas through its offices in a number of jurisdictions around the world. BMO Financial Corp. (BFC) is based in Chicago and wholly-owned by Bank of Montreal. BFC operates primarily through its subsidiary BMO Harris Bank N.A. (BHB), which provides banking, financing, investing, and cash management services in the United States. BMO provides a full range of investment dealer services through entities, including BMO Nesbitt Burns Inc., a major fully integrated Canadian investment dealer, and BMO Capital Markets Corp., Bank of Montreal's wholly-owned registered broker dealer in the United States.

BMO conducts business through three operating groups: Personal and Commercial Banking (P&C), made up of Canadian P&C and U.S. P&C; BMO Wealth Management; and BMO Capital Markets. In P&C, personal banking provides customers with a wide range of financial products and services, including deposits, lending, and everyday financial and investment advice through a network of branches, dedicated contact centres, digital banking platforms and automated teller machines. Commercial Banking serves clients across Canada and the United States with a comprehensive range of commercial banking products and services, including multiple financing options and treasury and payment solutions, as well as risk management products. Commercial bankers are trusted advisors and partners to their clients, offering sector and industry expertise and local presence. Canadian P&C operates branches across Canada, while U.S. P&C operates branches predominately in eight states (Illinois, Wisconsin, Missouri, Indiana, Minnesota, Kansas, Arizona and Florida) under the BMO Harris brand. In addition, the commercial business provides targeted nationwide coverage for key specialty sectors and has offices in select regional markets. BMO Wealth Management serves a full range of clients from individuals and families to business owners and institutions. It offers a wide spectrum of wealth, asset management and insurance products and services aimed at helping clients plan, grow, protect and transition their wealth. The asset management business is focused on making a positive impact and delivering innovative client solutions. BMO Capital Markets is a North American-based financial services provider offering a complete range of products and services to corporate, institutional and government clients. These include equity and debt investment and corporate banking services, as well as global market sales and trading solutions. Corporate Services consists of Corporate Units and Technology and Operations (T&O). Corporate Units provide enterprise-wide expertise, governance and support in a variety of areas, including strategic planning, risk management, finance, legal and regulatory compliance, human resources, communications, marketing, real estate and procurement. T&O develops, monitors, manages and maintains governance of information technology, including data and analytics, and provides cyber security and operations services.

For additional information regarding BMO's businesses, see pages 20, and 38 to 57 of the 2021 MD&A and Note 25 to the 2021 Financial Statements. The Bank incorporates these pages and Note herein by reference.

This Business section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements on page 2.

Supervision and Regulation in Canada

Bank of Montreal's activities in Canada are governed by the Bank Act.

Under the Bank Act, a bank can operate its regular banking business as well as some additional activities, such as dealing with real property and various financial technology and information services. A bank is restricted when it undertakes certain activities, including fiduciary activities, dealing in securities, insurance activities, and personal property leasing. For example, other than for authorized types of insurance, a bank may not offer insurance products through its branch system or bank website.

The Bank Act grants a bank broad power to invest in the securities of other corporations and entities, but limits substantial investments. Under the Bank Act, a bank generally has a substantial investment in a body corporate when (1) the bank and entities controlled by the bank beneficially own more than 10% of the voting shares of the body corporate or (2) the bank and entities controlled by the bank beneficially own shares representing more than 25% of the total shareholders' equity of the body corporate. A bank can have a substantial investment in entities that meet the substantial investment requirements as set out in Part IX of the Bank Act. In certain cases, the Minister of Finance or the Superintendent of Financial Institutions (Canada) (the Superintendent) must approve before a bank can make an investment.

The Superintendent is responsible to the Minister of Finance for administering the Bank Act. The Superintendent provides guidelines for disclosing a bank's financial information. The Superintendent must also examine each bank annually to ensure compliance with the Bank Act and that each bank is in sound financial condition. The Superintendent's examination report is submitted to the Minister of Finance.

The Bank's Canadian trust, loan and insurance subsidiaries are federally regulated financial institutions governed by the *Trust and Loan Companies Act (Canada) and the Insurance Companies Act (Canada), respectively, and under provincial laws in respect of their activities in the provinces. The Bank and its Canadian trust, loan and insurance subsidiaries are also subject to regulation by the Financial Consumer Agency of Canada (the FCAC). The FCAC enforces consumer-related provisions of the federal statutes which govern these financial institutions. Certain activities of the Bank and its subsidiaries acting as securities brokers, dealers, underwriters, advisors and investment fund managers are regulated in Canada under provincial securities legislation and, in some cases, by a self-regulatory organization (the Investment Industry Regulatory Organization of Canada or the Mutual Fund Dealers Association of Canada).*

Under Canadian bank resolution powers, the Canada Deposit Insurance Corporation (CDIC) may, in circumstances where the Bank has ceased, or is about to cease, to be viable, assume temporary control or ownership of the Bank and may be granted broad powers by one or more orders of the Governor in Council (Canada), including the power to sell or dispose of all or a part of the assets of the Bank, and the power to carry out or cause the Bank to carry out a transaction or a series of transactions the purpose of which is to restructure the business of the Bank. As part of the Canadian bank resolution powers, certain provisions of, and regulations under the Bank Act, the Canada Deposit Insurance Corporation Act (CDIC Act) and certain other Canadian federal statutes pertaining to banks (collectively, the "Bail-in Regime") provide for a bank recapitalization regime for banks designated by the Superintendent as domestic systemically important banks. Effective September 23, 2018, under the Bail-in Regime, subject to an order of the Governor in Council (Canada) having been issued, CDIC may, having assumed temporary control or ownership of the Bank, amongst other actions, carry out a conversion, by converting or causing the Bank to convert, in whole or in part – by means of a transaction or series of transactions and in one or more steps – the shares and liabilities of the Bank that are subject to the Bail-in Regime into common shares of the Bank or any of its affiliates. For a more detailed description of Canadian bank resolution powers and the consequent risk factors attaching to certain liabilities of the Bank, reference is made to https://www.bmo.com/ir/files/F18%20Files/Bail_In_TLAC_Disclosure.pdf. The information on the Bank's website does not form a part of this Annual Information Form.

Additional information about supervision and regulation in Canada is found under the headings "Regulatory Capital Requirements" and "Regulatory Capital Developments" in the Enterprise-Wide Capital Management section on pages 66 to 68, "Regulatory Requirements" in the Risks That May Affect Future Results section on pages 76 to 77, and "Legal and Regulatory Risk" on pages 109 to 110 of the 2021 MD&A, which pages the Bank incorporates herein by reference.

Supervision and Regulation in the United States

In the United States, the operations of Bank of Montreal and its subsidiaries are supervised, regulated, and examined by regulatory and government agencies at the federal and state level. As a foreign bank, Bank of Montreal is subject to various U.S. laws and regulations, including the United States International Banking Act of 1978, the United States Bank Holding Company Act of 1956, and related regulations. The Board of Governors of the Federal Reserve System, including the Federal Reserve Banks (the Federal Reserve), and state banking regulators oversee the Bank of Montreal's branch and office operations in the United States. The U.S. Securities and Exchange Commission (the SEC), the Financial Industry Regulatory Authority, and state securities regulators regulate broker-dealer subsidiaries. The SEC and state securities regulators regulate registered investment advisor subsidiaries.

Bank of Montreal and its subsidiaries own two Federal Deposit Insurance Corporation (FDIC) insured depository institutions in the United States, BHB and BMO Harris Central N.A. (BHC). BHB provides banking, financing, investing, and cash management services predominantly in the U.S. Midwest. BHC provides limited cash management services. They are subject to examination by the Office of the Comptroller of the Currency (OCC). The Federal Reserve generally needs to approve acquiring (a) more than 5% of voting shares, (b) control, or (c) all (or substantially all) of the assets of a bank holding company, bank, or savings association.

The Bank is also subject to the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank). Dodd-Frank reforms include heightened consumer protection, revised regulation of over-the-counter derivatives markets, restrictions on proprietary trading and the ownership and sponsorship of private investment funds by banks and their affiliates (referred to as the Volcker Rule), imposition of heightened prudential standards, and broader application of leverage and risk-based capital requirements.

The Federal Reserve Board's rule for strengthening supervision and regulation of foreign banking organizations (FBO Rule) implemented Dodd Frank's enhanced prudential standards for the U.S. operations of non-U.S. banks, such as BMO. The rule established new requirements relating to an intermediate holding company structure, risk based capital and leverage requirements, capital stress testing requirements, U.S. risk management and risk governance, liquidity risk management and liquidity stress testing frameworks. The Bank has certified its compliance with this rule. In May 2018, the U.S. Congress passed the Economic Growth, Regulatory Relief, and Consumer Protection Act (EGRRCP), which made reforms to Dodd-Frank, including raising the threshold for heightened prudential standards from US$50 billion to US$250 billion in total consolidated assets. The Federal Reserve in October 2019 issued final rules that modify capital and liquidity requirements, single counterparty credit limits, and enhanced prudential standards for bank holding companies and foreign banking organizations.

The OCC has issued guidelines that establish heightened standards for large national banks with average total consolidated assets of US$50 billion or more, including BHB. The guidelines set out minimum standards for the design and implementation of a bank's risk governance framework and minimum standards for oversight of that framework by a bank's board of directors. The framework must ensure the bank's risk profile is easily distinguished and separate from that of its parent for risk management purposes. A bank's board of directors is responsible for informed oversight of, and providing credible challenge to, management's risk management recommendations and decisions. We comply with these guidelines.

Additional information about supervision and regulation in the United States is found under the headings “Regulatory Capital Requirements”, “Regulatory Capital Developments” and “Regulatory Capital Review” in the Enterprise-Wide Capital Management section on pages 66 to 68, “Regulatory Requirements” in the Risks That May Affect Future Results section on pages 76 to 77, and “Legal and Regulatory Risk” on pages 109 to 110 of the 2021 MD&A, which pages the Bank incorporates herein by reference.

This Supervision and Regulation in the United States section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements on page 2.

International Supervision and Regulation

Outside Canada and the U.S., each of Bank of Montreal’s branches, agencies and subsidiaries must comply with the regulatory requirements of the country or jurisdiction where it conducts business. These include the Basel Committee on Banking Supervision capital, liquidity and prudential rules (Basel III), or local variations on Basel III, which are intended to strengthen the banking sector’s capital and liquidity frameworks. Since the first quarter of 2013, regulatory capital requirements for Bank of Montreal have been determined on a Basel III basis. Additional information about international supervision and regulation is found under the headings “Regulatory Capital Requirements”, “Regulatory Capital and Total Loss Absorbing Capacity Ratios”, “Regulatory Capital and Total Loss Absorbing Capacity Elements” and “Regulatory Capital Developments” in the Enterprise-Wide Capital Management section on pages 66 to 68, “Regulatory Requirements” in the Risks That May Affect Future Results section on pages 76 to 77, and “Legal and Regulatory Risk” on pages 109 to 110 of the 2021 MD&A, which pages the Bank incorporates herein by reference.

Competition

Canada’s financial services industry is highly competitive. It includes 35 domestic banks and 48 foreign bank subsidiaries, branches, and lending branches, as well as a multitude of trust companies, credit unions, online and full-service brokerages, investment dealers, life and property and casualty insurance companies, mutual fund dealers, and large monoline financial institutions, among others. Bank of Montreal competes with most of these companies in some form in its different businesses. However, the Bank’s range of services compares most directly to those of the other five major Canadian banks, and they are direct competitors in almost all the Bank’s businesses and markets in Canada. Bank of Montreal was the fourth largest chartered bank in Canada as measured by assets, equity, and market capitalization as at October 31, 2021. In North America, the Bank is the eighth largest bank by assets, and eleventh largest by equity and by market capitalization as at October 31, 2021. BMO is the second largest Canadian bank as measured by retail branches in Canada and the United States, and a top-10 commercial lender in North America.

The financial services industry continues to operate in a highly competitive and rapidly changing environment. The six major banks play a prominent role in the Canadian banking system, each maintaining an extensive and evolving branch network, augmented by automated banking machines, dedicated contact centres and digital platforms. The industry is considered mature with moderate growth, supported by an overall focus on productivity, continued investments in technology and infrastructure. Although the major banks offer similar products and services, they compete on offerings, pricing, service models and digital capabilities, as well as entering partnerships and alliances, with a goal of gaining a strategic advantage and enhancing customer experiences. Increased competition is also evident in the drive for scale and operating efficiencies.

Global economies continue to recover from the effects of the COVID-19 pandemic, which has added significant challenges to an already highly competitive and rapidly changing environment. It continued to accelerate existing industry trends, including digital adoption across customer segments, a growing need for product innovation and downward pressure on fees. Traditional competitors continue to expand their advisory sales forces and product offerings that allow them to serve customers in new ways and focus more effectively on providing elevated client experiences, while non-traditional competitors continued to gain momentum in certain segments of banking, in some cases with reduced regulatory requirements and oversight, and are deepening their connections with banks in order to enhance their products and build customer relationships. Traditional competitors therefore continue to invest in digital capabilities and platforms that provide high levels of operational reliability and resilience, particularly with respect to business-critical systems. This includes leveraging digital offerings to meet clients’ evolving needs and goals, refining credit decisioning and enhancing artificial intelligence (AI) and data and analytical capabilities to bring new solutions to market, while reducing costs, simplifying processes and improving the efficiency of operations. The accelerated adoption of cloud-based solutions and strengthened cloud service delivery partnerships provide the Bank flexibility to adapt to the expanded digital landscape and the remote work environment. BMO’s Financial Crimes Unit (FCU) has been pivotal in implementing risk mitigation strategies in response to the increase in cyber threats and continue to advance its capabilities to respond to a heightened and evolving threat landscape. However, matching the pace of innovation exhibited by new and differently-situated competitors may require the Bank and policy-makers to continue adapting at a faster pace. The competitive environment and changing client preferences will also continue to exert pressure on fees for products and services.

The Bank will continue to focus on delivering word-class client loyalty and growth; a winning culture driven by alignment, empowerment and recognition; digital capabilities for speed, efficiency and scale; simplifying work and eliminating complexity; and superior management of risk and capital performance.

BMO’s Canadian P&C banking business is one of the top five in Canada in all core product areas, providing a full range of lending, deposit and treasury management products and services to eight million customers. Canadian P&C continues to focus on strengthening customer loyalty in order to generate growth in a competitive environment, as well as increasing digital capabilities to augment the customer experience. Personal Banking provides customers with a wide range of products and services, including chequing and savings accounts, credit cards, mortgages, personal loans, small business lending and everyday financial and investment advice. The Bank’s employees are focused on providing exceptional service to all of our customers in every interaction and helping them make real financial progress.

Canadian P&C’s award winning[1] commercial bank possesses a strong competitive position in commercial lending, with a number two market share for business loans of up to $25 million. Commercial Banking provides clients with a broad suite of commercial products and services, including business deposit accounts, commercial credit cards, business loans and commercial mortgages, cash management solutions, foreign exchange and specialized banking programs. The Bank’s Commercial bankers partner with clients to help them grow and manage their business.

In Canada, BMO Wealth Management competes with domestic banks, insurance companies, trust companies, global private banks, investment counselling firms, and mutual fund companies. BMO Wealth Management’s Canadian businesses have strong brand recognition and market position. BMO Private Wealth provides full-service investing, award-winning private banking[2] and wealth advisory services to high net worth and ultra-high net worth clients, leveraging individualized financial planning and advice-based solutions. BMO InvestorLine provides a range of digital investment services that compete effectively with online brokerages and digital advice providers. BMO Insurance competes with Canadian insurance companies in providing individual life and annuity products as well as pension de-risking solutions. In the United States, BMO Wealth Management competes primarily in U.S. personal wealth and advisory services, with a strategic presence in the States of Illinois and Wisconsin and in select high-growth wealth markets across the country. BMO Global Asset Management provides investment management products and

services to institutional, retail and high net worth investors, offering a range of innovative, client-focused solutions and strategies to help clients meet their investment objectives.

BMO Capital Markets operates in a highly competitive environment and its businesses face a diverse range of competitors. With approximately 2,600 professionals in 32 locations around the world, including 18 offices in North America, BMO Capital Markets works proactively with clients, aiming to be their valued financial partner – leveraging people, innovative solutions, and capital to help them achieve their goals. BMO Capital Markets' success is based on a highly integrated, client-focused North American capital markets business with a well-diversified platform and business mix – by sector, geography, product and currency. This includes a strong, scalable and relevant U.S. business, and strong risk management and regulatory compliance practices.

The footprint of our U.S. P&C core branch network spans eight states (Illinois, Wisconsin, Missouri, Indiana, Minnesota, Kansas, Arizona and Florida). In addition, the commercial business offers targeted nationwide coverage of key specialty sectors and has offices in select regional markets, while the personal banking digital platform delivers our financial products and services nationally. Although still impacted by the COVID-19 pandemic, the U.S. economy began to recover in fiscal 2021, gaining strength as public health restrictions were gradually lifted. Consumers and businesses continued to add to their savings, supported by government support programs and rising employment rates. Borrowing remained muted, as high levels of cash savings balances, led to continued strength in deposit growth and slower loan growth. The economy is expected to grow at a robust pace in the year ahead, although labour shortages and supply-chain disruptions are still a concern. Consumers are benefiting from high levels of excess savings and growing employment, and some additional fiscal stimulus is also expected. Housing market activity is expected to remain healthy in fiscal 2022, supported by rising employment. Corporate credit growth is expected to increase, as rising business confidence leads to new investments. U.S. P&C remains committed to its customers, employees and local communities, and is well-positioned to grow despite a highly competitive environment. The commercial banking business continues to be well-positioned to grow, as our bankers have been working with our clients throughout the pandemic, providing them with a full range of deposit, lending and advisory solutions that are timely, relevant and supportive of their business. In personal banking, investments in technology continue to deliver improvements in speed, scale and efficiency, and are fuelling growth in digital and mobile adoption.

Consolidation has been underway in the financial services industry in Canada and the United States in recent years. This affects trust companies, mutual fund managers, life insurers, and credit unions. Any large bank merger would be subject to Canadian federal government policy on bank mergers and a thorough public review process. It is uncertain whether this will change in the near future but further consolidation and increased competition in the financial services industry overall is likely.

This Competition section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements on page 2.

[1] In 2021, the Bank was named the Best Commercial Bank in Canada by World Finance Magazine for the seventh consecutive year.
[2] BMO Private Banking was named Best Private Bank in Canada by World Finance for the eleventh consecutive year.

Environmental, Social and Governance Issues

The Bank publishes a *Sustainability Report and Public Accountability Statement*, outlining how the Bank is addressing environmental, social, and governance issues. This report and other related information is available on the Bank's website, www.bmo.com. The information on the Bank's website does not form a part of this Annual Information Form. Additional information about the Bank's environmental and social risks is under the heading "Risks that May Affect Future Results – Top and Emerging Risks That May Affect Future Results – Climate Change and Other Environmental and Social Risks" and "Environmental and Social Risk" in the Enterprise-Wide Risk Management section on pages 75-76 and pages 111-113 of the 2021 MD&A, which pages the Bank incorporates herein by reference.

Risk Factors

A description of certain key factors and risks faced by the Bank and its businesses can be found in the "Enterprise-Wide Risk Management" section on pages 74-113 of the 2021 MD&A, which pages the Bank incorporates herein by reference.

DIVIDENDS

You can find information about the Bank's dividends paid or payable per share on the common shares and each outstanding series of preferred shares in each of the three most recently completed years under the heading "Outstanding Shares and NVCC Capital Instruments" on page 71 of the 2021 MD&A, which page the Bank incorporates herein by reference.

The Bank cannot (a) declare dividends on its preferred or common shares if paying those dividends would contravene the capital adequacy, liquidity, or other regulations under the Bank Act; (b) pay common share dividends unless the Bank has paid all dividends declared and payable on its preferred shares or set aside sufficient funds to do so; and (c) in certain circumstances, pay Class B Preferred Share dividends unless the Bank pays dividends on the Class B Preferred Shares Series 48 (NVCC) (as defined below). In the event that interest due and payable on the Bank's Subordinated Capital Notes (as defined below) is not paid in full, the Bank will not declare dividends on its common shares or preferred shares or, subject to certain exceptions, redeem, purchase or otherwise retire such shares until the month commencing after such interest payments have been made in full. The Board of Directors determines the amount and payment of future dividends. The determination by the Board of Directors depends on the Bank's operations, financial condition, cash requirements, future regulatory restrictions on the payment of dividends, and other factors the Board of Directors finds relevant. You can find information about the Bank's dividends and dividend payout range on page 72 of the 2021 MD&A, which page the Bank incorporates herein by reference.

Currently, these limitations do not restrict the payment of dividends on common or preferred shares.

OSFI announced on March 13, 2020 that it expected federally regulated financial institutions to halt dividend increases for the time being. The restriction remained in place throughout the year ended October 31, 2021 and was lifted on November 4, 2021.

DESCRIPTION OF CAPITAL STRUCTURE

The following summarizes certain provisions of the Bank's common shares, preferred shares, Subordinated Capital Notes and Limited Recourse Capital Notes. This summary is qualified in its entirety by the Bank's by-laws and the actual terms and conditions of such securities. For more detail on the Bank's capital structure, see pages 67 to 72 of the 2021 MD&A and Notes 16 and 19 of the 2021 Financial Statements. The Bank incorporates those pages and Notes herein by reference.

Description of Common Shares

The authorized capital of the Bank includes an unlimited number of common shares without nominal or par value for unlimited consideration. The holders of common shares are entitled to:

(i) Vote at all Bank shareholders' meetings, except for meetings where only holders of a specified class or series of shares are entitled to vote.

(ii) Receive dividends as and when declared by the Board of Directors, subject to the preference of the Bank's holders of preferred shares.

(iii) Receive the remaining property of the Bank if it is liquidated, dissolved, or wound up, only after paying the Bank's holders of preferred shares and paying all outstanding debt.

Description of Preferred Shares

The authorized capital of the Bank includes an unlimited number of Class A Preferred Shares and Class B Preferred Shares without nominal or par value, in series, for unlimited consideration. Class B Preferred Shares may be issued in a foreign currency. The following describes certain general terms and conditions of the preferred shares.

Certain Conditions of the Class A Preferred Shares as a Class

Issuable in Series

From time to time, the Board of Directors may resolve to issue Class A Preferred Shares in one or more series with rights, privileges, restrictions, and conditions, which the Board of Directors may also decide. As at December 2, 2021, there were no outstanding Class A Preferred Shares.

The Class A Preferred Shares of each series rank equally to all other series of Class A and Class B Preferred Shares and are entitled to preference over the common shares and over any other shares ranking junior to the Class A Preferred Shares and the Class B Preferred Shares with respect to the payment of dividends and in the distribution of property in the event of the liquidation, dissolution or winding up of the Bank.

Creating and Issuing Shares

Under the Bank Act, the Bank needs approval from the holders of Class A Preferred Shares to create any other class of shares with equal or superior rank to Class A Preferred Shares. Shareholders must give this approval as set out below in "Shareholder Approvals." The Bank Act and other laws may also require other forms of approval.

The Bank does not require shareholder approval to create or issue additional Class A Preferred Shares or shares of equal rank if, on the date they are created or issued, the Bank has declared and paid or set apart for payment all dividends payable on cumulative and non-cumulative Class A Preferred Shares, including for the most recently completed fiscal period.

Voting Rights

The holders of the Class A Preferred Shares only have voting rights as a class on certain matters (see below) or as the law requires.

Shareholder Approvals

Holders of the Class A Preferred Shares can give their approval if 66 2/3% or more holders casting vote in favour of doing so at a meeting where the majority of Class A Preferred Shares is represented, or if no quorum is present at such a meeting, at an adjourned meeting at which no quorum requirements apply.

Certain Conditions of the Class B Preferred Shares as a Class

Issuable in Series

From time to time, the Board of Directors may resolve to issue Class B Preferred Shares in one or more series with rights, privileges, restrictions, and conditions, which the Board of Directors may also decide.

The Class B Preferred Shares of each series rank equally to all the other series of Class B and Class A Preferred Shares and are entitled to preference over the common shares and any other shares ranking junior to the Class A Preferred Shares and the Class B Preferred Shares with respect to the payment of dividends and in the distribution of property in the event of the liquidation, dissolution or winding up of the Bank.

Creating and Issuing Shares

Under the Bank Act, the Bank needs approval from holders of Class B Preferred Shares to create any other class of shares with equal or superior rank to Class B Preferred Shares. The Bank Act or other laws may also require other forms of approval.

The Bank does not require shareholder approval to create or issue additional Class B Preferred Shares or shares of equal rank if, on the date they are created or issued, the Bank has declared and paid or set apart for payment all dividends payable on cumulative and non-cumulative Class B Preferred Shares, including for the most recently completed fiscal period. As at December 2, 2021, none of the outstanding Class B Preferred Shares have the right to cumulative dividends.

Voting Rights

The holders of the Class B Preferred Shares only have voting rights as a class on certain matters (see below) or as the law requires.

Shareholder Approvals

Holders of the Class B Preferred Shares can give their approval if 66 2/3% or more holders casting vote in favour of doing so at a meeting where the majority of Class B Preferred Shares is represented, or if no quorum is present at such meeting, at an adjourned meeting at which no quorum requirements apply.

Contingent Conversion of Certain Series of Class B Preferred Shares

Upon the occurrence of certain specified trigger events relating to the viability of the Bank, the Class B Preferred Shares Series 27(Non-Viability Contingent Capital (NVCC)), Class B Preferred Shares Series 29 (Non-Viability Contingent Capital (NVCC)), Class B Preferred Shares Series 31 (Non-Viability Contingent Capital) (NVCC)), Class B Preferred Shares Series 33 (Non-Viability Contingent Capital (NVCC)), Class B Preferred Shares Series 38 (Non-Viability Contingent Capital (NVCC)), Class B Preferred Shares Series 40 (Non-Viability Contingent Capital (NVCC)), Class B Preferred Shares Series 42 (Non-Viability Contingent Capital (NVCC)), Class B Preferred Shares Series 44 (Non-Viability Contingent Capital (NVCC)), Class B Preferred Shares Series 46 (Non-Viability Contingent Capital (NVCC)) and Class B Preferred Shares Series 48 (Non-Viability Contingent Capital (NVCC)) will immediately and automatically be converted into common shares of the Bank. The number of common shares into which such Class B Preferred Shares would be converted upon the occurrence of such a trigger event will be determined in accordance with a pre-determined conversion formula specified at the time of issuance of such Class B Preferred Shares.

Description of Other Equity Instruments – Subordinated Capital Notes

The Bank currently has outstanding US$500 million 4.800% Fixed Rate Resetting Non-Cumulative Subordinated Additional Tier 1 Capital Notes (Non-Viability Contingent Capital (NVCC)) (“Subordinated Capital Notes”) which are classified as equity and form part of the Bank’s additional tier 1 non-viability contingent capital. The Subordinated Capital Notes are compound financial instruments that have both equity and liability features. For more details, see “Other Equity Instruments” in Note 16 of the 2021 Financial Statements.

The Subordinated Capital Notes are direct unsecured obligations of the Bank and, in the event of the Bank’s insolvency or winding-up, will rank subordinate to all of the Bank’s subordinated indebtedness and in right of payment equally with and not prior to indebtedness that ranks equally in right of payment with, or is subordinated to, the Subordinated Capital Notes (other than indebtedness which by its terms ranks subordinate to the Subordinated Capital Notes, including but not limited to the Limited Recourse Capital Notes). The Subordinated Capital Notes will constitute subordinated indebtedness for the purposes of the Bank Act. In the event of the Bank’s insolvency or winding-up, the Subordinated Capital Notes will rank ahead of the Bank’s common shares and Preferred Shares.

Upon the occurrence of certain specified trigger events relating to the viability of the Bank, the Subordinated Capital Notes will immediately and automatically be converted into common shares of the Bank. The number of common shares into which the Subordinated Capital Notes would be converted upon the occurrence of such a trigger event will be determined in accordance with a pre-determined conversion formula specified at the time of issuance of the Subordinated Capital Notes.

Certain Provisions of the Subordinated Capital Notes

Distributions and Restrictions on Dividend and Retirement of Shares

Interest on the Subordinated Capital Notes is paid semi-annually in arrears for the initial five years. Thereafter, the interest will reset every five years and accrue at a fixed rate. While interest is payable on a semi-annual basis, the Bank may, at its discretion, with prior notice, cancel the payments. If the Bank does not pay the interest in full to the note holders, the Bank will not declare dividends on its common shares or preferred shares or redeem, purchase or otherwise retire such shares until the month commencing after the Bank resumes full interest payments on the Subordinated Capital Notes.

Maturity and Redemption

The Subordinated Capital Notes have no scheduled maturity or redemption date. Accordingly, the Bank is not required to make any repayment of the principal amount of the Subordinated Capital Notes except in the event of bankruptcy or insolvency and provided that the NVCC requirements have not been triggered. The Subordinated Capital Notes are redeemable at par five years after issuance solely at the option of the Bank, or following certain regulatory or tax events, in accordance with their terms. All redemptions are subject to regulatory consent.

Purchase for Cancellation

Subject to regulatory consent, the Bank may at any time, purchase for cancellation any Subordinated Capital Notes at any price in the open market.

Events of Default

An event of default in respect of the Subordinated Capital Notes will occur only if the Bank becomes bankrupt or insolvent or becomes subject to the provisions of the *Winding-up and Restructuring Act* (Canada), or if the Bank goes into liquidation, either voluntarily or under an order of a court of competent jurisdiction, passes a resolution for the winding-up, liquidation or dissolution of the Bank or otherwise acknowledges its insolvency. Neither a failure to make a payment on the Subordinated Capital Notes when due (including any interest payment, whether as a result of cancellation or otherwise) nor an NVCC automatic conversion upon the occurrence of a trigger event will constitute an event of default.

Issuance of other Senior or Pari Passu Securities

The terms governing the Subordinated Capital Notes do not limit the Bank's ability to incur additional indebtedness or issue or repurchase securities, other than the restriction on retirement of shares noted above. The Bank may incur additional indebtedness without the authorization of the holders of the Subordinated Capital Notes.

Voting Rights

The holders of Subordinated Capital Notes are not entitled to any rights of holders of common shares, including any rights of shareholders to receive notice, to attend or to vote at any meeting of the shareholders of the Bank. If the Subordinated Capital Notes are converted into common shares of the Bank under NVCC requirements, holders of the Subordinated Capital Notes will become holders of the Bank's common shares and will only have rights as holders of common shares.

Description of Other Equity Instruments – Limited Recourse Capital Notes

The Bank currently has outstanding $1.25 billion 4.300% Limited Recourse Capital Notes, Series 1 (Non-Viability Contingent Capital (NVCC)) ("Limited Recourse Capital Notes") which are classified as equity and form part of the Bank's additional tier 1 non-viability contingent capital. The Limited Recourse Capital Notes are compound financial instruments that have both equity and liability features. For more details, see "Other Equity Instruments" in Note 16 of the 2021 Financial Statements.

The Limited Recourse Capital Notes are direct unsecured obligations of the Bank and, in the event of the Bank's insolvency or winding-up (prior to the occurrence of specified trigger events), will rank: (a) subordinate in right of payment to the prior payment in full of all indebtedness, including certain subordinated indebtedness (including but not limited to the Subordinated Capital Notes); and (b) in right of payment, equally with and not prior to indebtedness which by its terms ranks equally in right of payment with, or is subordinate to, the Limited Recourse Capital Notes (other than indebtedness which by its terms ranks subordinate to the Limited Recourse Capital Notes) in each case, from time to time outstanding, and will be subordinate in right of payment to the claims of the Bank's depositors and other unsubordinated creditors. The Limited Recourse Capital Notes will constitute subordinated indebtedness for the purposes of the Bank Act. In the event of the Bank's insolvency or winding-up, the Limited Recourse Capital Notes will rank ahead of the Bank's common shares and Preferred Shares.

In the event of a non-payment by the Bank of the principal amount of, or interest on the Limited Recourse Capital Notes when due, while a holder of Limited Recourse Capital Notes will have a claim against the Bank for the principal amount of the Limited Recourse Capital Notes and any accrued and unpaid interest (which will then be due and payable), the sole remedy of each holder of Limited Recourse Capital Notes is the delivery of such holder's proportionate share of the assets of a limited recourse trust. As of the date hereof, the limited recourse trust's assets in respect of the Limited Recourse Capital Notes consist of 1,250,000 Class B Preferred Shares, Series 48 (Non-Viability Contingent Capital (NVCC)) ("Class B Preferred Shares Series 48 (NVCC)").

Upon the occurrence of certain specified trigger events relating to the viability of the Bank, the above Class B Preferred Shares Series 48 (NVCC) will immediately and automatically be converted into common shares of the Bank. The number of common shares into which the Class B Preferred Shares Series 48 (NVCC) would be converted upon the occurrence of such a trigger event will be determined in accordance with a pre-determined conversion formula specified at the time of the issuance of the Class B Preferred Shares Series 48 (NVCC). Subject to certain limitations, each holder of the Limited Recourse Capital Notes would receive such holder's proportionate share of such common shares of the Bank.

Certain Provisions of the Limited Recourse Capital Notes

Distributions and Restrictions on Dividend and Retirement of Shares

Interest on the Limited Recourse Capital Notes is paid semi-annually in arrears for the initial five years. Thereafter, the interest will reset every five years and accrue at a fixed rate.

Until revoked, the trustee of the limited recourse trust has waived its right to receive any and all dividends on the Class B Preferred Shares Series 48 (NVCC). Accordingly, until such waiver is revoked by the trustee of the limited recourse trust, no dividends are expected to be declared or paid on the Class B Preferred Shares Series 48 (NVCC). To the extent the waiver is no longer in effect and the limited recourse trust is the sole holder of the Class Preferred Shares Series 48 (NVCC), if the Bank does not declare and pay dividends on the Class B Preferred Shares Series 48 (NVCC), it will not declare and pay dividends on any of the other outstanding series of Class B Preferred Shares of the Bank.

Maturity and Redemption

The Limited Recourse Capital Notes are scheduled to mature on November 26, 2080. The Limited Recourse Capital Notes are redeemable, at the option of the Bank, at their principal amount every five years after issuance, or following certain regulatory or tax events, in accordance with their terms. Upon any redemption of the Class B Preferred Shares Series 48 (NVCC) held by the limited recourse trust, the Bank shall redeem Limited Recourse Capital Notes with an aggregate principal amount equal to the aggregate face amount of the Class B Preferred Shares Series 48 (NVCC) redeemed by the Bank. All redemptions are subject to regulatory consent.

Purchase for Cancellation

Subject to regulatory consent, the Bank may at any time, purchase for cancellation any Limited Recourse Capital Notes at any price in the open market. Prior to any such cancellation, the Bank shall, subject to regulatory consent, redeem a corresponding number of Class B Preferred Shares Series 48 (NVCC) (the aggregate face amount of which shall equal the aggregate principal amount of the Notes to be cancelled) then held by the limited recourse trust for cancellation.

Events of Default

An event of default in respect of the Limited Recourse Capital Notes ("Event of Default"), will occur only if the Bank becomes bankrupt or insolvent or becomes subject to the provisions of the Winding-up and Restructuring Act (Canada), or if the Bank goes into liquidation, either voluntarily or under an order of a court of competent jurisdiction, passes a resolution for the winding-up, liquidation or dissolution of the Bank or otherwise acknowledges its insolvency. Upon an Event of Default, the sole remedy of each holder of Limited Recourse Capital Notes is the delivery of such holder's proportionate share of the Class B Preferred Shares Series 48 (NVCC).

Issuance of other Senior or Pari Passu Securities

The terms governing the Limited Recourse Capital Notes do not limit the Bank's ability to incur additional indebtedness or issue or repurchase securities. The Bank may incur additional indebtedness without the authorization of the holders of the Limited Recourse Capital Notes.

Voting Rights

The holders of the Limited Recourse Capital Notes are not entitled to any rights of holders of common shares, including any rights of shareholders to receive notice, to attend or to vote at any meeting of the shareholders of the Bank. If the Class B Preferred Shares Series 48 (NVCC) are converted into common shares of the Bank, holders of the Limited Recourse Capital Notes will become holders of the Bank's common shares and will only have rights as holders of common shares.

This Certain Provisions of the Limited Recourse Capital Notes section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements on page 2.

Restraints on Bank Shares under the Bank Act

The Bank Act restricts the beneficial ownership of shares of a bank. No person may be a major shareholder of a bank if the bank has equity of $12 billion or more, which applies to the Bank. A major shareholder is defined as a person, or group of persons under common control or acting jointly or in concert, that beneficially owns more than 20% of any class of voting shares or more than 30% of any class of non-voting shares of the bank.

In addition, no person may have a significant interest in any class of shares of a bank, including the Bank, unless the person first receives the approval of the Minister of Finance. A person has a significant interest in a class of shares of a bank when the person, or group of persons under common control or acting jointly or in concert, beneficially owns more than 10% of any class of shares of the bank.

Governments and their agents are also restricted from acquiring shares of a bank, except for certain cases that require the Minister of Finance's consent.

Ratings

The credit ratings that external rating agencies assign to some of the Bank's securities are important in the raising of both capital and funding to support the Bank's business operations. Maintaining strong credit ratings allows the Bank to access the capital markets at competitive pricing levels. Should the Bank's credit ratings experience a downgrade, its cost of funds would likely increase and its access to funding and capital through capital markets could be reduced. A material downgrade of the Bank's ratings could also have other consequences, including those set out in Note 8 of the 2021 Financial Statements, which Note the Bank incorporates herein by reference.

The following table sets out ratings the Bank has received for its outstanding securities from the rating agencies, which are current as at December 2, 2021.

	S&P		Moody's		DBRS		Fitch	
	Rating	**Rank[1]**	**Rating**	**Rank[1]**	**Rating**	**Rank[1]**	**Rating**	**Rank[1]**
Short-term instruments	A-1	1 of 6	P-1	1 of 4	R-1 (high)	1 of 6	F1+	1 of 7
Senior debt[3]	A-	3 of 10	A2	3 of 9	AA (low)	2 of 10	AA-	2 of 10
Long Term Deposits / Legacy Senior Debt[4]	A+	3 of 10	Aa2	2 of 9	AA	2 of 10	AA	2 of 10
Subordinated debt	A-	3 of 10	Baa1	4 of 9	A (high)	3 of 10	A	3 of 10
Subordinated debt – NVCC[2]	BBB+	4 of 10	Baa1 (hyb)	4 of 9	A (low)	3 of 10	A	3 of 10
Subordinated Capital Notes – NVCC[2]	BBB-	4 of 10	Baa3 (hyb)	4 of 9	N/A	N/A	N/A	N/A
Limited Recourse Capital Notes – NVCC[2]	BBB-	4 of 10	Baa3 (hyb)	4 of 9	BBB (high)	4 of 10	N/A	N/A
Preferred shares	BBB	3 of 9	Baa3	4 of 9	Pfd-2 (high)	2 of 6	N/A	N/A
Preferred shares – NVCC[2]	BBB-	3 of 9	Baa3 (hyb)	4 of 9	Pfd-2	2 of 6	N/A	N/A
Trend/Outlook	Stable	--	Stable	--	Stable	--	Negative	--

Notes: [1] Rank, according to each rating agency's public website, refers to the assigned ratings ranking of all major assignable ratings for each debt or share class, 1 being the highest. Each assignable major rating may be modified further (+/-, high/low) to show relative standing within the major rating categories.
[2] Non-viability contingent capital or NVCC.
[3] Subject to conversion under the Bail-In Regime.
[4] Long Term Deposits / Legacy Senior Debt Includes: (a) Senior debt issued prior to September 23, 2018; and (b) Senior debt issued on or after September 23, 2018 which is excluded from the Bail-In Regime.

A definition of the categories of each rating as at December 2, 2021 from each rating agency's website is outlined in Appendix II to this Annual Information Form. Further information may be obtained from the applicable rating agency. S&P, Moody's and DBRS each have a stable outlook on BMO's long-term credit ratings and Fitch has a negative outlook.

During fiscal 2021 there were no changes to ratings assigned by S&P, Moody's, DBRS or Fitch. Credit ratings may not reflect the potential impact of all risks on the value of securities. In addition, real or anticipated changes in the rating assigned to a security will generally affect the market value of that security. The Bank cannot know for certain that a rating will remain in effect for any given period of time or that a rating agency will not revise or withdraw it entirely in the future.

The Bank paid fees to credit rating agencies to obtain its credit ratings. The Bank may also pay fees for other services from credit rating agencies in the ordinary course of business.

MARKET FOR SECURITIES

Trading Price and Volume

The outstanding common shares of the Bank are listed for trading on the Toronto Stock Exchange (TSX) and on the New York Stock Exchange (NYSE) under the trading symbol BMO. The outstanding preferred shares of the Bank set out below are listed on the TSX with the following trading symbols: BMO.PR.S for the Class B Preferred Shares Series 27 (Non-Viability Contingent Capital (NVCC)), BMO.PR.T for the Class B Preferred Shares Series 29 (Non-Viability Contingent Capital (NVCC)), BMO.PR.W for the Class B Preferred Shares Series 31 (Non-Viability Contingent Capital (NVCC)), BMO.PR.Y for the Class B Preferred Shares Series 33 (Non-Viability Contingent Capital (NVCC)), BMO.PR.B for the Class B Preferred Shares Series 38 (Non-Viability Contingent Capital (NVCC)), BMO.PR.C for the Class B Preferred Shares Series 40 (Non-Viability Contingent Capital (NVCC)), BMO.PR.D for the Class B Preferred Shares Series 42 (Non-Viability Contingent Capital (NVCC)), BMO.PR.E for the Class B Preferred Shares Series 44 (Non-Viability Contingent Capital (NVCC)) and BMO.PR.F for the Class B Preferred Shares Series 46 (Non-Viability Contingent Capital (NVCC)).

The following table sets out the reported high and low trading prices in Canadian dollars and the trading volumes of the common and preferred shares of Bank of Montreal on the TSX for the given periods. Prices are based on the reported data from the TSX Historical Data Access.

	BMO Common Shares	PR.Q [1] Series 25	PR.A [1] Series 26	PR.S Series 27	PR.T Series 29	PR.W Series 31	PR.Y Series 33	PR.Z [2] Series 35	PR.B Series 38	PR.C Series 40	PR.D Series 42	PR.E Series 44	PR.F Series 46
November 2020													
- High Price ($)	98.05	24.92	24.75	19.50	18.80	19.50	20.26	26.03	25.70	24.70	24.09	21.85	25.65
- Low Price ($)	78.82	24.75	24.60	17.72	17.15	17.85	19.20	25.94	25.50	23.72	22.64	20.30	25.05
- Volume	73,569,115	319,101	35,100	176,280	250,782	367,925	226,117	71,180	141,998	190,700	142,928	153,308	107,075
December 2020													
- High Price ($)	98.62	25.10	24.93	20.85	20.09	20.46	21.58	n.a.	25.81	25.00	24.50	22.84	25.75
- Low Price ($)	94.76	24.80	24.75	19.45	18.78	19.55	20.23	n.a.	25.51	24.37	23.92	21.63	25.11
- Volume	40,281,840	264,013	12,816	755,651	657,483	342,026	48,894	n.a.	674,606	1,508,437	355,420	252,949	158,818
January 2021													
- High Price ($)	102.38	25.07	25.00	21.11	20.31	20.74	22.00	n.a.	26.04	25.25	25.09	24.02	25.88
- Low Price ($)	94.90	24.88	24.82	20.26	19.54	20.01	21.25	n.a.	25.60	24.27	24.09	22.35	25.26
- Volume	60,313,878	153,077	13,220	350,266	643,558	73,218	64,170	n.a.	411,564	287,750	333,585	289,435	120,828
February 2021													
- High Price ($)	108.57	25.05	25.10	22.79	21.71	21.98	23.02	n.a.	25.80	25.33	25.20	24.25	26.19
- Low Price ($)	95.16	24.98	24.85	20.85	19.90	20.40	21.50	n.a.	25.53	24.80	24.61	23.16	25.65
- Volume	56,517,393	229,520	29,268	352,742	222,321	192,708	410,399	n.a.	578,785	516,483	277,445	182,648	129,212
March 2021													
- High Price ($)	113.50	25.04	25.00	23.70	22.95	22.95	23.98	n.a.	25.87	25.68	25.63	24.88	26.45
- Low Price ($)	104.28	24.91	24.85	22.40	21.53	21.86	23.08	n.a.	25.58	24.86	24.76	24.03	25.75
- Volume	53,743,126	495,319	19,800	453,744	311,614	163,476	89,850	n.a.	321,930	753,802	360,958	455,730	150,136
April 2021													
- High Price ($)	117.91	25.15	25.00	23.72	23.09	23.29	24.28	n.a.	25.87	25.63	25.54	25.20	26.79
- Low Price ($)	111.81	24.96	24.90	22.86	22.20	22.50	23.26	n.a.	25.58	25.12	25.20	24.60	25.82
- Volume	61,856,709	90,648	4,902	256,177	182,798	92,065	141,916	n.a.	287,800	266,373	151,976	193,128	125,833
May 2021													
- High Price ($)	127.49	25.10	25.05	24.00	23.75	23.94	24.48	n.a.	25.79	25.73	25.87	25.26	27.04
- Low Price ($)	114.88	24.93	24.90	23.40	22.85	23.05	23.85	n.a.	25.55	25.22	25.22	24.85	26.22
- Volume	52,311,812	41,011	8,133	141,075	204,040	103,005	63,152	n.a.	93,286	223,284	119,665	263,496	339,927
June 2021													
- High Price ($)	130.40	25.10	25.05	24.36	24.05	24.14	24.50	n.a.	25.78	25.75	26.00	25.88	27.33
- Low Price ($)	126.03	25.00	24.95	23.58	23.17	23.43	24.02	n.a.	25.50	25.36	25.40	25.00	26.68
- Volume	35,641,501	91,688	13,950	352,011	196,217	109,093	56,167	n.a.	151,097	490,150	174,867	208,641	136,410
July 2021													
- High Price ($)	128.69	25.11	25.06	24.33	23.97	24.12	24.69	n.a.	25.81	25.89	25.74	25.82	27.15
- Low Price ($)	121.76	24.99	25.00	23.75	23.25	23.60	23.95	n.a.	25.51	25.46	25.00	25.22	26.01
- Volume	52,376,621	206,537	30,247	334,085	150,474	80,369	33,735	n.a.	176,737	464,449	108,891	140,568	103,504
August 2021													
- High Price ($)	132.35	25.00	25.00	24.65	24.27	24.32	25.21	n.a.	25.50	25.78	25.89	26.01	27.40
- Low Price ($)	123.06	24.98	24.99	23.78	23.31	23.54	24.18	n.a.	25.32	25.40	25.05	25.07	26.51
- Volume	47,423,885	48,077	8,560	129,859	128,775	162,610	63,927	n.a.	194,025	453,712	98,907	203,746	179,249
September 2021													
- High Price ($)	129.71	n.a.	n.a.	24.58	24.41	24.37	25.08	n.a.	25.52	25.74	25.89	25.90	27.28
- Low Price ($)	123.85	n.a.	n.a.	24.19	24.03	24.10	24.71	n.a.	25.36	25.19	25.30	25.39	26.00
- Volume	28,128,541	n.a.	n.a.	202,619	146,422	162,521	260,937	n.a.	96,594	166,513	120,139	181,285	187,069
October 2021													
- High Price ($)	138.67	n.a.	n.a.	25.00	24.60	24.85	25.24	n.a.	25.59	25.65	25.82	25.98	27.10
- Low Price ($)	125.69	n.a.	n.a.	24.50	24.23	24.35	24.78	n.a.	25.23	25.25	25.43	25.61	26.86
- Volume	53,424,173	n.a.	n.a.	182,370	470,060	111,819	96,743	n.a.	106,976	485,191	250,086	121,405	111,078

[1] The Bank redeemed all of its outstanding Class B Preferred Shares Series 25 and Class B Preferred Shares Series 26 on August 25, 2021.
[2] The Bank redeemed all of its outstanding Class B Preferred Shares Series 35 (NVCC) on November 25, 2020.

Prior Sales

From time to time, the Bank issues principal at risk notes, securities for which the amount payable at maturity is determined by reference to the price, value or level of an underlying interest such as a stock index, an exchange traded fund or a notional portfolio of equities or other securities. In addition, the Bank periodically

issues subordinated debt and other equity instruments which are not listed or quoted on a marketplace. For information about the Bank's issuances of subordinated indebtedness and other equity instruments since October 31, 2020, see the "Subordinated Debt" and "Equity" sections on pages 64-65 of the 2021 MD&A and Notes 15 and 16 of the 2021 Financial Statements, which page and Notes are incorporated herein by reference. Also refer to the Description of Other Equity Instruments – Subordinated Capital Notes and Description of Other Equity Instruments – Limited Recourse Capital Notes sections above.

ESCROWED SECURITIES AND SECURITIES SUBJECT TO CONTRACTUAL RESTRICTION ON TRANSFER

Designation of class	Number of securities held in escrow or that are subject to a contractual restriction on transfer	Percentage of class
Class B Preferred Shares Series 48 (NVCC) [1]	1,250,000	100% of the Class B Preferred Shares Series 48 (NVCC)

[1] The Class B Preferred Shares Series 48 (NVCC) are held in a limited recourse trust and are restricted from being transferred except to satisfy the recourse of the holders of the Limited Recourse Capital Notes in respect of non-payment by the Bank of the principal amount of, or interest on, the Limited Recourse Capital Notes when due.

DIRECTORS AND EXECUTIVE OFFICERS

Board of Directors

As at December 2, 2021, the following were directors of the Bank.

DIRECTOR NAME AND PRINCIPAL OCCUPATION	MUNICIPALITY OF RESIDENCE	DIRECTOR SINCE
Jan Babiak Corporate Director	Nashville, Tennessee USA	October 23, 2012
Sophie Brochu, C.M. President and Chief Executive Officer Hydro-Quebec	Bromont, Québec Canada	March 22, 2011
Craig Broderick Corporate Director	Greenwich, Connecticut	August 27, 2018
George A. Cope, C.M. Chair of the Board, Bank of Montreal	Toronto, Ontario Canada	July 25, 2006
Stephen Dent Managing Director and co-founder Birch Hill Equity Partners, a private equity firm	Toronto, Ontario Canada	April 7, 2021
Christine Edwards Corporate Director	Lake Forest, Illinois U.S.A.	August 1, 2010
Dr. Martin S. Eichenbaum Charles Moskos Professor of Economics Northwestern University	Glencoe, Illinois U.S.A.	March 31, 2015
David Harquail Chair of the Board Franco-Nevada Corporation, a royalty and streaming company	Toronto, Ontario	April 5, 2018
Linda S. Huber Chief Financial Officer FactSet Research Systems Inc., a provider of financial information and analytical applications	New York, New York U.S.A.	April 4, 2017
Eric R. La Flèche President and Chief Executive Officer Metro Inc., a food retailer and distributor	Montreal, Québec Canada	March 20, 2012
Lorraine Mitchelmore Corporate Director	Calgary, Alberta Canada	March 31, 2015
Madhu Ranganathan Executive Vice President and Chief Financial Officer OpenText Corporation, an information management software company	Saratoga, California U.S.A	April 7, 2021
Darryl White Chief Executive Officer BMO Financial Group	Toronto, Ontario Canada	May 24, 2017

A director of the Bank holds office until the next annual meeting of shareholders or until a successor is elected or appointed, unless their seat is vacated before they can do so.

Since November 1, 2016, the directors have held the principal occupations above, or other positions with the same, predecessor, or associated firms except for Ms. Brochu who before December 30, 2019 was President and Chief Executive Officer of Energir, Mr. Broderick who before January 2018 was Chief Risk Officer of Goldman Sachs & Co., Mr. Cope who before January 2020 was CEO of BCE Inc., Ms. Edwards who before February 2021 was a capital partner at Winston &

Strawn LLP, Mr. Harquail who before May 6, 2020 was Chief Executive Officer of Franco-Nevada Corporation, Ms. Huber who before October 2020 was Chief Financial Officer and Treasurer of MSCI Inc. and before July 2018 was the Executive Vice-President and Chief Financial Officer of Moody's Corporation, Ms. Mitchelmore, who before July 2018 was the President and Chief Executive Officer of Enlighten Innovations Inc. and before January 2016, was the President, Canada Country Chair & Executive Vice President, Heavy Oil, Shell Canada Limited, Ms. Ranganathan who before March 2018 was Chief Financial Officer of [24]7.ai, Inc. and Mr. White who, from November 2016 until October 2017 was Chief Operating Officer of the Bank and, from November 2014 until October 2016, was Group Head, BMO Capital Markets.

Board Committee Members

There are four committees of the Board of Directors made up of the following members:

Audit and Conduct Review Committee: Jan Babiak (Chair), Dr. Martin S. Eichenbaum, David Harquail, Linda S. Huber and Madhu Ranganathan.

Governance and Nominating Committee: Christine Edwards (Chair), Jan Babiak, Sophie Brochu, Craig Broderick, George Cope and Lorraine Mitchelmore.

Human Resources Committee: Lorraine Mitchelmore (Chair), Sophie Brochu, George Cope, Christine Edwards and Eric La Flèche.

Risk Review Committee: Craig Broderick (Chair), Stephen Dent, Dr. Martin S. Eichenbaum, David Harquail, Linda S. Huber and Lorraine Mitchelmore.

Executive Officers

At November 30, 2021, the following were executive officers of the Bank:

EXECUTIVE OFFICER NAME	PRINCIPAL OCCUPATION	MUNICIPALITY OF RESIDENCE
Darryl White	Chief Executive Officer	Toronto, Ontario Canada
Dan Barclay	Group Head, BMO Capital Markets	Toronto, Ontario Canada
David R. Casper	Chief Executive Officer, BMO Financial Corp. and Group Head, North American Commercial Banking	Northbrook, Illinois U.S.A.
Patrick Cronin	Chief Risk Officer	Toronto, Ontario Canada
Cameron Fowler	Chief Strategy & Operations Officer	Toronto, Ontario Canada
Sharon Haward-Laird	General Counsel	Toronto, Ontario Canada
Ernie Johannson	Group Head, North American Personal and Business Banking	Toronto, Ontario Canada
Deland Kamanga	Group Head, BMO Wealth Management	Toronto, Ontario Canada
Mona Malone	Chief Human Resources Officer and Head of People & Culture	Toronto, Ontario Canada
Steve Tennyson	Chief Technology Officer & Operations Officer	Toronto, Ontario Canada
Tayfun Tuzun	Chief Financial Officer	Cincinatti, Ohio U.S.A.

All the executive officers named above have held their present positions or other senior positions with Bank of Montreal or its subsidiaries for the past five years, other than Mr. Tuzun. Prior to joining BMO, Mr. Tuzun was Executive Vice President and Chief Financial Officer, Fifth Third Bancorp, where he held positions including Senior Vice President, Treasurer and other senior treasury and finance roles.

Shareholdings of Directors and Executive Officers

To the knowledge of the Bank, as at October 31, 2021, the directors and executive officers of Bank of Montreal, as a group, beneficially owned, directly or indirectly, or exercised control or direction over an aggregate of 184,565 common shares of Bank of Montreal, representing less than 0.1% of Bank of Montreal's issued and outstanding common shares.

Additional Disclosure for Directors and Executive Officers

To the Bank's knowledge, no director or executive officer of the Bank:

(a) is, as at October 31, 2021, or was, within the 10 years before, a director, chief executive officer or chief financial officer of any company (including the Bank):

(i) subject to an order (including a cease trade order or an order similar to a cease trade order or an order that denied the relevant company access to any exemption under securities legislation for a period of more than 30 consecutive days), that was issued while the director or executive officer was acting in the capacity as director, chief executive officer or chief financial officer; or

(ii) subject to an order (including a cease trade order or an order similar to a cease trade order or an order that denied the relevant company access to any exemption under securities legislation for a period of more than 30 consecutive days) that was issued after the director or executive officer ceased to be a director, chief executive officer or chief financial officer and which resulted from an event that occurred while that person was acting in the capacity as director, chief executive officer or chief financial officer;

(b) is, as at October 31, 2021, or has been, within the 10 years before, a director or executive officer of any company (including the Bank), that while that person was acting in that capacity or within a year of the person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets; or

(c) has, within the 10 years before October 31, 2021, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director or executive officer.

To the Bank's knowledge, none of its directors or executive officers have been subject to: (a) any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority; or (b) any other penalties or sanctions imposed by a court or regulatory body, that would likely be considered important to a reasonable investor in making an investment decision.

LEGAL PROCEEDINGS AND REGULATORY ACTIONS

A description of certain legal proceedings to which the Bank is a party appears under the heading "Legal Proceedings" in Note 24 of the 2021 Financial Statements, which Note the Bank incorporates herein by reference.

In the ordinary course of business, the Bank and its subsidiaries may be assessed fees or fines by a Canadian securities regulatory authority in relation to administrative matters, including late filings or reporting, which may be considered penalties or sanctions pursuant to Canadian securities regulations but which are not, individually or in the aggregate, material to the Bank. In addition, the Bank and its subsidiaries are subject to numerous regulatory authorities around the world, and accordingly fees, administrative penalties, settlement agreements and sanctions may be categorized differently by certain regulators. Any such penalties imposed under these categories against the Bank and its subsidiaries in the 2021 fiscal year, however, are not material, nor would they likely be considered important to a reasonable investor in making an investment decision. Since November 1, 2020, the Bank and its subsidiaries have not entered into any material settlement agreements with a court relating to securities legislation or with a securities regulatory authority.

TRANSFER AGENT AND REGISTRAR

The registrar and transfer agent for the Bank's common and preferred shares is Computershare Trust Company of Canada. This agent has transfer facilities in Montreal, Toronto, Calgary and Vancouver. In addition, Computershare Investor Services PLC and Computershare Trust Company, N.A. serve as transfer agents and registrars for the common shares in Bristol, United Kingdom and Canton, Maine, respectively.

INTERESTS OF EXPERTS

The Bank's Shareholders' Auditors are KPMG LLP. KPMG LLP have confirmed that they are independent with respect to the Bank within the meaning of the relevant rules and related interpretations prescribed by the relevant professional bodies in Canada and any applicable legislation or regulation, and that they are independent accountants with respect to the Bank under all relevant United States professional and regulatory standards.

AUDIT AND CONDUCT REVIEW COMMITTEE INFORMATION

Composition of the Audit and Conduct Review Committee

The following five members make up the Bank's Audit and Conduct Review Committee: Jan Babiak (Chair), Dr. Martin S. Eichenbaum, David Harquail, Linda S. Huber and Madhu Ranganathan. The Committee's responsibilities and duties are set out in the Committee's charter, which is included in Appendix I to this Annual Information Form.

The Board of Directors has determined that the members of the Audit and Conduct Review Committee reflect a high level of financial literacy and expertise. Each member of the Audit and Conduct Review Committee is "independent" and "financially literate" according to the definitions under Canadian and United States securities laws and the NYSE corporate governance listing standards, and each of Ms. Babiak, Ms. Huber and Ms. Ranganathan is an "Audit Committee Financial Expert" as defined under United States securities laws. The Board bases these decisions on each Committee member's education and experience. The following paragraphs describe the relevant education and experience of each Committee member:

Ms. Babiak holds a B.B.A. in accounting from the University of Oklahoma and an M.B.A. from Baldwin Wallace University. She is a Chartered Accountant in the United Kingdom and a Certified Public Accountant in the United States. Ms. Babiak serves on the boards of other public and private companies and was formerly a Managing Partner at Ernst & Young LLP.

Dr. Eichenbaum received a B.Comm from McGill University and a Doctorate in Economics from the University of Minnesota. He served on the advisory council of the Global Markets Institute at Goldman Sachs. He completed a four-year term as co-editor of the American Economic Review in 2015. He has served as a consultant to the Federal Reserve Banks in Atlanta and Chicago and the International Monetary Fund.

Mr. Harquail holds a B.A.Sc. in Geological Engineering from the University of Toronto, an MBA from McGill University and is a registered Professional Engineer in Ontario. Mr. Harquail is the Chair of the Board of Franco-Nevada Corporation, a publicly traded company. He is the former President and Chief Executive officer of Franco-Nevada. He is a past-director and past-chair of the World Gold Council. Mr. Harquail has over 35 years of experience on public and non-profit boards and task force advisories.

Ms. Huber holds an M.B.A. from the Stanford Graduate School of Business and a B.S. (with high honors) in business and economics from Lehigh University. Ms. Huber is the Chief Financial Officer of FactSet Research Systems Inc. Prior to October 2020, she was the Chief Finance Officer and Treasurer of MSCI. Before joining MSCI in 2019, she was Executive Vice President and Chief Financial Officer of Moody's Corporation. Before joining Moody's in 2005, Ms. Huber served in several senior roles in financial services, including Executive Vice President and Chief Financial Officer at U.S. Trust Company, a subsidiary of Charles Schwab & Company, Inc.; Managing Director at Freeman & Co.; Vice President of Corporate Strategy and Development and Vice President and Assistant Treasurer at PepsiCo.

Ms. Ranganathan holds an M.B.A. from the University of Massachusetts and a B.S. Accounting from the University of Madras. She is a member of the Institute of Chartered Accountants in India and member of the American Institute of Certified Public Accountants in the United States. Ms. Ranganathan is the Executive Vice President and Chief Financial Officer of OpenText Corporation. Prior to March 2018, she was the Chief Finance Officer of [24]7.ai, Inc. Ms. Ranganathan currently serves as a Board Member & Audit Committee Chair for Akamai Technologies, Inc.

Shareholders' Auditors' Pre-Approval Policies and Procedures and Fees

For information about the fees paid to KPMG LLP, in the years ended October 31, 2021 and 2020, and the related pre-approval policies and procedures, see page 120 of the 2021 MD&A, which page the Bank incorporates herein by reference.

ADDITIONAL INFORMATION

You can find additional information about Bank of Montreal on the Bank's web site at www.bmo.com/investorrelations, on SEDAR (System for Electronic Document Analysis and Retrieval) at www.sedar.com, and on the SEC's web site at www.sec.gov/edgar. Information contained in or otherwise accessible through the websites mentioned herein does not form part of this document.

The Bank's proxy circulars contain more information, including directors' and executive officers' compensation, debt, and shareholdings under equity compensation plans. The most recent circular is dated February 11, 2021, in connection with the Bank's Annual Meeting of Shareholders on April 7, 2021 (the 2021 Proxy Circular). The Bank expects the next proxy circular to be dated as of February 14, 2022, in connection with the Bank's Annual Meeting of Shareholders on April 13, 2022.

The 2021 Financial Statements and the 2021 MD&A for the fiscal year ended October 31, 2021 provide additional financial information.

You can get copies of this Annual Information Form, as well as copies of the 2021 Financial Statements, the 2021 MD&A, the Bank's 2021 Annual Report, and the 2021 Proxy Circular (after the Bank has mailed these documents to shareholders) by contacting the Bank at:

Bank of Montreal
Corporate Secretary's Department
100 King Street West
1 First Canadian Place, 21st Floor
Toronto, Ontario
Canada M5X 1A1

Telephone: 416 867 6785
Fax: 416 867 6793
Email: corp.secretary@bmo.com

APPENDIX I

BANK OF MONTREAL

AUDIT AND CONDUCT REVIEW COMMITTEE CHARTER

The Committee is responsible for assisting the Board in fulfilling its oversight responsibilities for the integrity of the Bank's financial reporting; the effectiveness of the Bank's internal controls; the independent auditor's qualifications, independence and performance; the Bank's compliance with legal and regulatory requirements; transactions involving related parties; conflicts of interest and confidential information; and standards of business conduct and ethics.

In addition, the Committee will also act as the audit and conduct review committee of Designated Subsidiaries.

PART I
MANDATE

The Committee will, either directly or through one or more sub-committees, perform the duties set out in this Charter and such other duties as may be necessary or appropriate including:

1.1 Financial Reporting

1.1.1 reviewing, together with management and the Shareholders' Auditors:

(i) the appropriateness of, and any changes to, the Bank's accounting and financial reporting;

(ii) the accounting treatment, presentation and impact of significant risks and uncertainties;

(iii) any material relevant proposed changes in accounting standards and securities policies or regulations;

(iv) key estimates and judgments of management;

(v) significant auditing and financial reporting issues and the method of resolution; and

(vi) tax matters that are material to the financial statements.

1.1.2 reviewing, together with management and the Shareholders' Auditors, and approving or, if appropriate, recommending to the Board:

(i) prior to Board review or public disclosure, the audited annual and unaudited interim financial statements and related management's discussion and analysis, the annual information form, and any other financial or non-financial (as considered appropriate) information in material public disclosure documents (other than earnings coverage ratios, capitalization tables and summary financial information derived from any of the foregoing); and

(ii) such returns to OSFI requiring review under the *Bank Act* (Canada);

1.1.3 seeking confirmation from management that the Bank's annual and interim financial filings, fairly present in all material respects the financial condition, results of operations and cash flows of the Bank as of the relevant date and for the relevant periods, prior to recommending to the Board for approval;

1.1.4 reviewing the types of information to be provided and types of presentations to be made to rating agencies and analysts (if any) relating to earnings guidance, and

1.1.5 satisfying itself that adequate procedures are in place for the review of financial information extracted or derived from the Bank's financial statements that is to be publicly disclosed and has not otherwise been reviewed by the Committee.

1.2 Internal Controls

1.2.1 overseeing the design, implementation, maintenance and effectiveness of the Bank's internal controls, including those related to the prevention, identification and detection of fraud; and reviewing and monitoring other Bank Corporate Policies as the Committee considers appropriate;

1.2.2 requiring management to design, implement, and maintain appropriate internal control procedures;

1.2.3 reviewing management's certifications and assessment of the Bank's internal control over financial reporting and the associated Shareholders' Auditors' report;

1.2.4 reviewing reports on the effectiveness of disclosure controls and procedures;

1.2.5 reviewing and discussing reports from management and the Chief Auditor as to the identification of any significant deficiencies or material weaknesses in the design or operation of the Bank's internal control, risk management, and governance systems and processes, including controls over financial reporting; reviewing any recommendations, as well as remediation plans, including the status of remediation plans implemented by management to rectify any such deficiencies identified; and discussing whether similar or related deficiencies may exist elsewhere in the Bank; and

1.2.6 reviewing as required, correspondence relating to inquiries or investigations by regulators concerning internal controls.

1.3 Internal Audit Function

1.3.1 overseeing and reviewing at least annually the overall internal audit function, its resources and independence, and reviewing and approving the annual audit plan, including assurance that the audit plan is risk-based and encompasses appropriate audit coverage, audit cycle requirements, and provides a basis for reliance by the Committee;

1.3.2 reviewing and approving the Bank's Corporate Audit Mandate setting out the terms of reference of the internal audit function and the Chief Auditor;

1.3.3 reviewing, and jointly with the Human Resources Committee, recommending to the Board, the appointment,re-assignment or dismissal of the Chief Auditor, as required; and annually assessing the effectiveness of the Chief Auditor, in conjunction with the Human Resources Committee, and reviewing and approving his or her mandate;

1.3.4 annually reviewing and approving the organizational structure, budget, resource plan and strategic priorities of the Corporate Audit function and assessing its effectiveness having regard to its role as an independent control function;

1.3.5 reviewing the results of periodic independent reviews of the Corporate Audit function;

1.3.6 reviewing the quarterly report of the Chief Auditor, together with management's response;

1.3.7 reviewing any other reports submitted to the Committee by the Chief Auditor; and

1.3.8 communicating directly with the Chief Auditor and participating in his or her initial and ongoing engagement and evaluation.

1.4 Shareholders' Auditors

1.4.1 reviewing and evaluating the quality, independence, objectivity and professional skepticism of the Shareholders' Auditors and the lead auditor;

1.4.2 annually reviewing the performance of the Shareholders' Auditors including assessing their effectiveness and quality of service, to facilitate an informed recommendation on re-appointment of the Shareholders' Auditors and, on a periodic basis, performing a comprehensive review of the performance of the Shareholders' Auditors over multiple years to assess the audit firm, its independence and application of professional skepticism;

1.4.3 reviewing Shareholders' Auditors' audit findings reports with the Shareholders' Auditors, the Chief Auditor, and management including:

(i) the quality of the financial statements;

(ii) the Shareholders' Auditors' evaluation of the Bank's internal control over financial reporting;

(iii) the degree of cooperation the Shareholders' Auditors received from management; any problems or difficulties experienced by the Shareholders' Auditors in conducting the audit, including management's responses in respect thereof, any restrictions imposed by management or significant accounting issues on which there was a disagreement with management;

(iv) any concerns expressed by the Shareholders' Auditors related to accounting and auditing matters, including the risk of material misstatements;

(v) the appropriateness and quality of all critical accounting policies and practices used by the Bank and of the selection of new policies and practices; and

(vi) any material judgments that have been discussed with management, the ramifications of their use and the Shareholders' Auditors' preferred treatment, as well as any other material communications with management, and advising the Board of these matters as considered appropriate;

1.4.4 overseeing the resolution of any disagreements between the Shareholders' Auditors and management;

1.4.5 reviewing all material correspondence between the Shareholders' Auditors and management related to audit findings;

1.4.6 reviewing the Shareholders' Auditors' report under Section 328 of the *Bank Act* (Canada);

1.4.7 obtaining and reviewing a report from the Shareholders' Auditors at least annually addressing: (i) the Shareholders' Auditors' internal quality control procedures; (ii) any material issues raised by the most recent internal quality-control review or peer review of the Shareholders' Auditors, or by any inquiry or investigation by governmental or professional authorities including the Canadian Public Accountability Board and the Public Company Accounting Oversight Board, within the preceding five years, respecting one or more audits carried out by the Shareholders' Auditors; (iii) any steps taken to deal with any such issues; (iv) the Shareholders' Auditors' internal procedures to ensure independence; and (v) the delineation of all relationships between the Shareholders' Auditors and the Bank;

1.4.8 reviewing any notices required to be communicated/delivered by the Shareholders' Auditors to the Committee, including those required by the Canadian Public Accountability Board, Office of the Superintendent of Financial Institutions, and the U.S. Public Accounting Oversight Board, and taking such action and making recommendations to the Board as appropriate in connection therewith;

1.4.9 reviewing the terms of the Shareholders' Auditors' engagement, the annual audit plan, including assurance that the audit plan is risk-based and appropriately addresses the risks of material misstatement, as well as any change in the materiality level used by the Shareholders' Auditors, and total fees payable and making recommendations to the Board as appropriate;

1.4.10 reviewing an annual written confirmation of the Shareholders' Auditors that they are independent in accordance with applicable independence rules and report directly to the Committee, as representatives of the Bank's shareholders;

1.4.11 reviewing and recommending to the Board the approval of the Bank's Auditor Independence Standard;

1.4.12 pre-approving audit services and permitted non-audit services by the Shareholders' Auditors in accordance with the Bank's Auditor Independence Standard; and

1.4.13 reviewing and approving the Bank's policies for hiring current or former partners or employees of the current or former Shareholders' Auditors and reviewing the Shareholders' Auditors' partner rotation.

1.5 Finance, Legal & Regulatory Compliance Functions

1.5.1 reviewing and, jointly with the Human Resources Committee, recommending to the Board the respective appointment,re-assignment or dismissal of the Chief Financial Officer, the General Counsel and the Chief Compliance Officer, as required; and annually assessing, in conjunction with the Human Resources Committee, the effectiveness of the Chief Financial Officer, the General Counsel and the Chief Compliance Officer, and reviewing and approving their respective mandates;

1.5.2 annually reviewing and approving the organizational structure, budget, resource plan and strategic priorities of the finance and legal & compliance, functions and assessing their effectiveness having regard to their respective roles as independent control functions;

1.5.3 reviewing the results of periodic independent reviews of the finance and compliance functions; and

1.5.4 reviewing and overseeing the status of remediation plans implemented by management to rectify any deficiencies identified.

1.6 Financial Risk Management

1.6.1 monitoring the Bank's major financial risk exposures and the steps management has taken to monitor and control such exposures; and

1.6.2 reviewing investments or transactions that could adversely affect the wellbeing of the Bank which the Shareholders' Auditors or any officer of the Bank may bring to the Committee's attention.

1.7 Legal & Regulatory Compliance

1.7.1 reviewing and approving the Legal, Regulatory and Reputation Risk Corporate Policy;

1.7.2 reviewing, with the Bank's General Counsel and the Chief Compliance Officer, the adequacy and effectiveness of the Bank's enterprise compliance program and the results of related monitoring and oversight activities;

1.7.3 reviewing an annual report on significant litigation matters and reviewing quarterly any material developments;

1.7.4 reviewing and approving the Bank's Anti-Money Laundering and Anti-Terrorist Financing Program framework, including key policies and any significant amendments;

1.7.5 meeting, at least annually, with the Chief Anti-Money Laundering Officer and the Chief Auditor to review their respective reports on the Anti-Money Laundering and Anti-Terrorist Financing Program;

1.7.6 meeting annually with representatives of OSFI as a Committee or as part of the Board, to receive OSFI's report on the results of its annual examination of the Bank; and

1.7.7 reviewing any other relevant reports of regulators to the Bank and any required action by management.

1.8 Business Conduct and Sustainability

1.8.1 reviewing and recommending for Board approval BMO's Code of Conduct;

1.8.2 approving any exceptions from BMO's Code of Conduct, as appropriate;

1.8.3 assessing the effectiveness of the Bank's governance frameworks aimed at (i) fostering an ethical culture, (ii) encouraging compliance with both the letter and spirit of applicable laws, regulations and consumer protections, and (iii) reducing misconduct;

1.8.4 reviewing procedures, at least biennially, for the receipt, retention and treatment of complaints received by the Bank regarding accounting, internal control over financial reporting or auditing matters; and the confidential anonymous submission of concerns by employees of the Bank regarding questionable accounting or auditing matters;

1.8.5 reviewing reports relating to employee and/or customer concerns received through the Office of the Ombudsman;

1.8.6 approving BMO's Sustainability Report and Public Accountability Statement prior to disclosure;

1.8.7 reviewing any "up the ladder" report received by the Committee in accordance with written procedures adopted by the Committee. The Bank's "up the ladder" procedure, adopted by the Bank's Legal Group, sets out reporting protocols that comply with s.307 of the *Sarbanes Oxley Act of 2002* for the Bank's lawyers in the event of a material violation of certain laws;

1.8.8 determining the necessity of, and overseeing any, investigations in connection with any "up the ladder" report; and

1.8.9 assessing the effectiveness of the Bank's governance of sustainability issues.

1.9 Self Dealing

1.9.1 overseeing the effectiveness of self-dealing identification and procedures established by management for related and affected parties and monitoring compliance with applicable laws;

1.9.2 reviewing and approving as considered appropriate: (i) practices to identify related party transactions that could have a material effect on the stability or solvency of the Bank and; (ii) the measurement criteria and benchmarks for permitted related party transactions;

1.9.3 reviewing and, if advisable, approving the terms and conditions of related party loans that exceed established benchmarks; and

1.9.4 reviewing reports to the Committee on related and affected party transactions.

1.10 Conflicts of Interest and Confidential Information

1.10.1 overseeing the Bank's procedures to identify, resolve and, where possible, reduce incidences of, conflicts of interest;

1.10.2 overseeing the Bank's procedures to restrict the use and disclosure of confidential information;

1.10.3 reviewing and approving the Bank's Disclosure Corporate Policy;

1.10.4 reviewing reports to the Committee relating to the use and disclosure of customer and employee information; and

1.10.5 overseeing the Bank's compliance with privacy legislation.

1.11 Consumer Protection Measures and Complaints

1.11.1 overseeing the Bank's procedures to make disclosure of information to Bank customers as required by the *Bank Act* (Canada), the *Trust and Loan Companies Act* (Canada), and the *Insurance Companies Act* (Canada);

1.11.2 overseeing the Bank's procedures for dealing with complaints;

1.11.3 reviewing the annual report of the Office of the Ombudsman on complaint resolution;

1.11.4 overseeing the Bank's procedures for complying with obligations imposed by the Financial Consumer Agency of Canada and applicable U.S. regulatory agencies; and

1.11.5 reviewing reports to the Committee relating to disclosure of information to customers and complaints.

1.12 Aircraft and Chief Executive Officer Expense Accounts

1.12.1 reviewing and approving, on an annual basis, the report on Bank aircraft and Chief Executive Officer expense accounts; and

1.12.2 the chair of the Committee will review, on a quarterly basis, the report on Chief Executive Officer expense accounts.

PART II

COMPOSITION

2.1 Members

2.1.1 The Committee will consist of three or more directors as determined by the Board. At least a majority of the members of the Committee will not be "affiliated" with the Bank for the purposes of the Bank Act (Canada). Each member of the Committee will be: (i) a director who is not an officer or employee of the Bank or an affiliate of the Bank; and (ii) "independent" for the purposes of applicable Canadian and United States securities laws and the New York Stock Exchange Rules.

2.1.2 Committee members will be Financially Literate or become so within a reasonable period after appointment to the Committee. At least one Committee member will qualify as an Audit Committee Financial Expert. Committee members will not serve on more than three public company audit committees without the approval of the Board.

2.1.3 The Board will, having considered the recommendation of the Governance and Nominating Committee, appoint the members of the Committee and the chair of the Committee annually following the meeting of the shareholders at which directors are elected each year. The Board may appoint a member to fill a vacancy which occurs in the Committee between annual elections of directors and increase the number of Committee members as it determines appropriate. If a member of the Committee becomes "affiliated" with the Bank for the purposes of the *Bank Act* (Canada), the member may continue as a member of the Committee with the approval of the Governance and Nominating Committee, in consultation with the Bank's General Counsel. Any member of the Committee may be removed or replaced at any time by the Board.

2.1.4 In addition to any orientation provided by the Governance and Nominating Committee, the chair of the Committee will provide orientation to new members of the Committee with respect to their duties and responsibilities as members of the Committee.

2.1.5 The Committee may invite other directors to attend Committee meetings or otherwise provide input as needed to acquire additional specific skills as required to carry out its mandate.

PART III

COMMITTEE PROCEDURE

3.1 Meetings

3.1.1 The Committee will meet as frequently as it determines necessary but not less than once each quarter. Meetings may be called by the Chair of the Board, the chair of the Committee or any two members of the Committee. The chair of the Committee must call a meeting when requested to do so by any member of the Committee, the Shareholders' Auditors, the Chief Auditor, the Chair of the Board, the Chief Executive Officer, the Chief Financial Officer or the General Counsel

3.1.2 Notice of the time and place of each meeting of the Committee, other than *ad hoc* meetings, will be given to each member of the Committee and the Shareholders' Auditors, not less than 48 hours before the time when the meeting is to be held. A quorum of the Committee will be a majority of its members. The powers of the Committee may be exercised at a meeting at which a quorum of the Committee is present in person or by telephone or other electronic means or by a resolution signed by all members entitled to vote on that resolution at a meeting of the Committee. Each member is entitled to one vote in Committee proceedings.

3.1.3 Notice of the time and place of *ad hoc* meetings will be given to each member not less than two hours before the time when the meeting is to be held.

3.1.4 The chair of the Committee will preside at all meetings of the Committee at which he or she is present and will, in consultation with the Chief Financial Officer, the Chief Auditor, the General Counsel and the Shareholders' Auditors, develop the agenda for each Committee meeting. The agenda for each meeting of the Committee, other than *ad hoc* meetings, will be delivered together with such other materials as the chair determines necessary, to each member of the Committee at least 48 hours prior to the meeting. The chair will designate from time to time a person who may be, but need not be, a member of the Committee, to be secretary of the Committee. Minutes will be kept of all meetings of the Committee and will be maintained by the Bank's Corporate Secretary.

3.1.5 The procedure at meetings is to be determined by the Committee unless otherwise determined by the By-Laws of the Bank, by a resolution of the Board or by this Charter.

3.1.6 The Committee will meet at least quarterly in separate private sessions with each of the Shareholders' Auditors and the Chief Auditor, and as appropriate with management including the Chief Financial Officer, the General Counsel, the Chief Compliance Officer and the Chief Anti-Money Laundering Officer.

3.1.7 The Committee will meet at the end of each meeting with only members of the Committee present.

3.1.8 The Committee may invite any director, officer or employee of the Bank or the Bank's counsel or the Shareholders' Auditors or any other person, as appropriate, to attend meetings of the Committee to assist in the discussion and examination of the matters under consideration by the Committee. The Shareholders' Auditors will, at the expense of the Bank, be entitled to attend and be heard at any meeting of the Committee.

3.2 Reports

3.2.1 The Committee will report the proceedings of each meeting and all recommendations made by the Committee at such meeting to the Board at the Board's next meeting. The Committee will make such recommendations to the Board as it may deem appropriate and will have such decision-making authority as the Board may determine from time to time. The Committee will approve the report of the Committee to be included in the Bank's Management Proxy Circular and such other reports relating to the activities of the Committee as may be required by the Bank or the Board from time to time. In addition, the Committee will prepare and submit to the Board for its review and approval the report required to be submitted by the Board to OSFI within 90 days after the financial year-end of the Bank concerning the activities of the Committee during the year in carrying out its conduct reviewresponsibilities.

3.3 Access to Management and Outside Advisors and Continuing Education

3.3.1 The Committee will have full, free and unrestricted access to management and employees, the Chief Auditor and the Shareholders' Auditors. The Committee has the authority to engage independent legal counsel, consultants or other advisors, with respect to any issue or to assist it in fulfilling its responsibilities without consulting or obtaining the approval of any officer of the Bank and the Bank will provide appropriate funding, as determined by the Committee, for the payment of: compensation to the Shareholders' Auditors engaged for the purpose of preparing or issuing an auditor's report or performing the audit, review or attest services for the Bank; compensation to any advisors employed by the Committee; and ordinary administrative expenses of the Committee that are necessary or appropriate in carrying out its duties.

3.3.2 The Committee will have access to continuing education programs to assist the Committee in fulfilling its responsibilities and the Bank will provide appropriate funding for such programs.

3.4 Annual Review and Assessment

3.4.1 The Committee will ensure that an annual review and assessment of the Committee's performance and effectiveness, including a review of its compliance with this Charter, will be conducted in accordance with the process developed by the Board's Governance and Nominating Committee and approved by the Board. The results thereof will be reported in accordance with the process established by the Board's Governance and Nominating Committee and approved by the Board.

3.4.2 The Committee will review and assess the adequacy of this Charter on an annual basis taking into account all legislative and regulatory requirements applicable to the Committee as well as any best practice guidelines recommended by regulators or stock exchanges with whom the Bank has a reporting relationship and, if appropriate, will recommend changes to the Board's Governance and Nominating Committee.

3.5 Definitions

"**Audit Committee Financial Expert**" means a person who has the following attributes:

(i) an understanding of generally accepted accounting principles and financial statements;

(ii) the ability to assess the general application of such principles in connection with the accounting for estimates, accruals and reserves;

(iii) experience preparing, auditing, analyzing or evaluating financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of issues that can reasonably be expected to be raised by the Bank's financial statements, or experience actively supervising one or more persons engaged in such activities;

(iv) an understanding of internal control over financial reporting; and

(v) an understanding of audit committee functions, acquired through any one or more of the following:

a) education and experience as a principal financial officer, principal accounting officer, controller, public accountant or auditor or experience in one or more positions that involve the performance of similar functions;

b) experience actively supervising a principal financial officer, principal accounting officer, controller, public accountant, auditor or person performing similar functions;

c) experience overseeing or assessing the performance of companies or public accountants with respect to the preparation, auditing or evaluation of financial statements; or

d) other relevant experience.

"Auditor Independence Standard" means the Bank's Auditor Independence Standard that provides guidance for engaging the Shareholders' Auditors to perform audit and permitted non-audit services for the Bank, its subsidiaries and material entities over which the Bank has significant influence.

"Bank" means Bank of Montreal and as the context requires, subsidiaries of the Bank.

"Board" means the Board of Directors of Bank of Montreal.

"Committee" means the Audit and Conduct Review Committee of the Board of Directors of Bank of Montreal.

"Chief Anti-Money Laundering Officer" means the Bank's officer appointed as Chief Anti-Money Laundering Officer.

"Designated Subsidiary" means as requested by the Board, those subsidiaries of the Bank for which the Committee will act as audit and conduct review committee.

"Financially Literate" means the ability to read and understand a set of financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of the issues that can reasonably be expected to be raised by the Bank's financial statements.

"OSFI" means the Office of the Superintendent of Financial Institutions.

"Shareholders' Auditors" mean the independent financial statement auditors of the Bank.

APPENDIX II

CREDIT RATING CATEGORIES

(a) Standard & Poor's ("S&P")

S&P has different rating scales for short-term debt, long-term debt and preferred shares. S&P short-term issue credit ratings are generally assigned to those obligations considered short-term in the relevant market. Short-term ratings are also used to indicate the creditworthiness of an obligor with respect to put features on long-term obligations. A short-term obligation rated A-1 indicates S&P's view that the Bank's capacity to meet its financial commitments on these obligations is strong.

S&P long-term issue credit ratings are based, in varying degrees, on the analysis of the following considerations: likelihood of payment—capacity and willingness of the obligor to meet its financial commitments on an obligation in accordance with the terms of the obligation; nature of and provisions of the financial obligation; and protection afforded to, and relative position of, the financial obligation in the event of bankruptcy, reorganization, or other arrangement under the laws of bankruptcy and other laws affecting creditors' rights. An obligation rated A means the obligation is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories, however, the obligor's capacity to meet its financial commitment on the obligation is still strong. An obligation rated BBB indicates that the obligation exhibits adequate protection parameters, however, adverse economic conditions or changing circumstances are more likely to weaken the obligor's capacity to meet its financial commitments on the obligation. Ratings from AA to CCC may be modified by the addition of a plus (+) or minus (–) sign to show relative standing within the rating categories.

The S&P preferred share rating on the Canadian scale is a forward-looking opinion about the creditworthiness of an obligor with respect to a specific preferred share obligation issued in the Canadian market, relative to preferred shares issued by other issuers in the Canadian market. The Canadian scale rating is fully determined by the applicable global scale rating, and there are no additional analytical criteria associated with the determination of ratings on the Canadian scale. The BBB and BBB- preferred share ratings on the Global Scale correspond to a P-2 and P-2(Low) rating, respectively, on the Canadian National Preferred Share Scale.

A rating outlook assesses the potential direction of a long-term credit rating over the intermediate term (generally up to two years). In determining a rating outlook, consideration is given to any changes in the economic and/or fundamental business conditions. A positive or negative outlook is not necessarily a precursor of a future rating change or CreditWatch listing.

The "Stable" rating outlook means that a rating is not likely to change.

(b) Moody's Investors Service ("Moody's")

Moody's has different rating scales for short-term ratings and long-term ratings.

Ratings assigned by Moody's are forward-looking opinions of the relative credit risks of financial obligations issued by non-financial corporates, financial institutions, structured finance vehicles, project finance vehicles, and public sector entities.

Moody's short-term ratings are assigned to obligations with an original maturity of 13 months or less and reflect both on the likelihood of a default or impairment on contractual financial obligations and the expected financial loss suffered in the event of default or impairment. The P-1 rating is the highest of four rating categories and indicates issuers (or supporting institutions) that have a superior ability to repay short-term debt obligations.

Moody's long-term ratings are assigned to issuers or obligations with an original maturity of 11 months or more and reflect both on the likelihood of a default or impairment on contractual financial obligations and the expected financial loss suffered in the event of default or impairment. Obligations rated Aa are judged to be of high quality and are subject to very low credit risk. Obligations rated A are judged to be upper-medium grade and subject to low credit risk. Obligations rated Baa are judged to be medium-grade and subject to moderate credit risk and as such may possess certain speculative characteristics. Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category. Additionally, a "(hyb)" indicator is appended to all ratings of hybrid securities issued by banks, insurers, finance companies, and securities firms.

Moody's Issuer Ratings are opinions of the ability of entities to honour senior unsecured debt and debt-like obligations.

The Moody's rating outlook is an opinion regarding the likely rating direction over the medium term.

The "Stable" outlook indicates a low likelihood of a rating change over the medium term.

(c) DBRS Limited ("DBRS")

DBRS has different rating scales for short-term debt, long-term debt and preferred shares. DBRS rating approach is based on a combination of quantitative and qualitative considerations.

The DBRS short-term debt rating scale provides an opinion on the risk that an issuer will not meet its short-term financial obligations in a timely manner. The R-1 and R-2 rating categories are further denoted by the subcategories "high", "middle" and "low". An obligation rated R-1(high) is of the highest credit quality and indicates the capacity for the payment of short-term financial obligations as they fall due is exceptionally high; unlikely to be adversely affected by future events.

The DBRS long-term rating scale provides an opinion on the risk of default. That is, the risk that an issuer will fail to satisfy its financial obligations in accordance with the terms under which the obligations have been issued. All rating categories other than AAA and D also contain subcategories “(high)” and “(low)”. The absence of either a “(high)” or “(low)” designation indicates the rating is in the middle of the category. Long-term financial obligations rated AA are of superior credit quality and the capacity for payment is considered high; credit quality differs from AAA only to a small degree; unlikely to be significantly vulnerable to future events. Long-term financial obligations rated A are of good credit quality and the capacity for payment is considered substantial, but of lesser credit quality than AA; may be vulnerable to future events but qualifying negative factors are considered manageable.

The DBRS preferred share rating scale is used in the Canadian securities market and reflects an opinion on the risk that an issuer will not fulfill its obligations with respect to both dividend and principal commitments in accordance with the terms under which the relevant preferred shares were issued. Each rating category may be denoted by the subcategories “high” and “low”. The absence of either a “high” or “low” designation indicates the rating is in the middle of the category. The Pfd-2 rating generally indicates good credit quality.

The Rating Trend indicates the direction in which DBRS Morningstar considers the rating may move if present circumstances continue.

The “Stable” rating trend indicates a lower likelihood that the rating could change in the future than would be the case if the rating trend was “Positive” or “Negative”.

(d) Fitch

Fitch publishes opinions on a variety of scales.

A short-term issuer or obligation rating is based on the short-term vulnerability to default of the rated entity and relates to the capacity to meet financial obligations in accordance with the documentation governing the relevant obligation. For banks, “short term” typically means up to 13 months. A rating of F1+ indicates the highest short-term credit quality. The added “+” denotes an exceptionally strong credit feature.

Rated entities in a number of sectors, including financial andnon-financial corporations, are generally assigned Issuer Default Ratings (“IDRs”). IDRs opine on an entity’s relative vulnerability to default on financial obligations. A rating of AA indicates a very high credit quality and denotes expectation of very low default risk. A rating of A indicates a high credit quality and denotes expectation of low default risk. The modifiers “+” or “-” may be appended to a rating to denote relative status within major rating categories.

Rating Outlooks indicate the direction a rating is likely to move over a one totwo-year period. They reflect financial or other trends that have not yet reached or been sustained at the level that would cause a rating action, but which may do so if such trends continue. A Positive or Negative Rating Outlook does not imply that a rating change is inevitable.

The “Negative” rating outlook indicates a downward trend on the rating scale.

Enhanced Disclosure Task Force

On October 29, 2012, the Enhanced Disclosure Task Force (EDTF) of the Financial Stability Board published its first report, Enhancing the Risk Disclosures of Banks. We support the recommendations issued by EDTF for the provision of high-quality, transparent risk disclosures.

Disclosures related to the EDTF recommendations are detailed in the index below, as presented in this 2021 Annual Report, the Supplemental Financial Information (SFI) or Supplemental Regulatory Capital Information (SRC). Information within the SFI or SRC is not, and should not be considered incorporated by reference into this 2021 Annual Report.

Topic	EDTF Disclosure	Page Number		
		Annual Report	SFI	SRC
General	1. Present all risk-related information in each report, providing an index for easy navigation	74-113	Index	Index
	2. Define the bank's risk terminology and risk measures and present key parameters used	84-113,136-138		
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Risk Governance, Risk Management & Business Model	5. Summarize the bank's risk management organization, processes, and key functions	78-83		
	6. Describe the bank's risk culture and procedures applied to support the culture	83		
	7. Describe key risks that arise from the bank's business model and activities	81		
	8. Describe the use of stress testing within the bank's risk governance and capital frameworks	82		
Capital Adequacy and Risk-Weighted Assets (RWA)	9. Provide minimum Pillar 1 capital requirements	66-69		3-4,10
	10. Summarize information contained in the composition of capital templates and reconciliation of the accounting balance sheet to the regulatory balance sheet			
	• A Main Features template can also be found on BMO's website at www.bmo.com under Investor Relations and Regulatory Filings	69		3-5
	11. Present a flow statement of movements in regulatory capital, including changes in Common Equity Tier 1, Additional Tier 1, and Tier 2 capital			6
	12. Discuss capital planning within a more general discussion of management's strategic planning	65		
	13. Provide granular information to explain how RWA relate to business activities	69-70		11
	14. Present a table showing the capital requirements for each method used for calculating RWA	69-70, 84-87		11,17,18,21-30, 37-43
	15. Tabulate credit risk in the banking book for Basel asset classes and major portfolios			17-30,37-43
	16. Present a flow statement that reconciles movements in RWA by credit risk and market risk			31,57
	17. Describe the bank's Basel validation and back-testing process. Included in our SRC information is our estimated and actual loss parameter information	108		58-62
Liquidity	18. Describe how the bank manages its potential liquidity needs and the liquidity reserve held to meet those needs	97-103		
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	20. Tabulate consolidated total assets, liabilities and off-balance sheet commitments by remaining contractual maturity	104-105		
	21. Discuss the bank's sources of funding and describe the bank's funding strategy	100-101		
Market Risk	22. Provide a breakdown of balance sheet positions into trading and non-trading market risk measures	96		
	23. Provide qualitative and quantitative breakdowns of significant trading and non-trading market risk measures	92-96		
	24. Describe significant market risk measurement model validation procedures and back-testing and how these are used to enhance the parameters of the model	92-95,108		
	25. Describe the primary risk management techniques employed by the bank to measure and assess the risk of loss beyond reported risk measures	92-93		
Credit Risk	26. Provide information about the bank's credit risk profile	84-91,160-166	23-35	11-56
	27. Describe the bank's policies related to impaired loans and renegotiated loans	161,166		
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Management's Discussion and Analysis

BMO's Chief Executive Officer and Chief Financial Officer have signed a statement outlining management's responsibility for financial information in the annual consolidated financial statements and Management's Discussion and Analysis (MD&A). The statement also explains the roles of the Audit and Conduct Review Committee and Board of Directors in respect of that financial information.

The MD&A comments on our operations and financial condition for the years ended October 31, 2021 and 2020. The MD&A should be read in conjunction with the consolidated financial statements for the year ended October 31, 2021. The MD&A commentary is as at December 3, 2021. Unless otherwise indicated, all amounts are stated in Canadian dollars and have been derived from consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board. We also comply with interpretations of IFRS by our regulator, the Office of the Superintendent of Financial Institutions Canada. References to generally accepted accounting principles (GAAP) mean IFRS.

Effective the first quarter of 2020, we adopted IFRS 16, *Leases*, recognizing the cumulative effect of adoption in opening retained earnings with no changes to prior periods. Certain prior-period results and measures have been reclassified for methodology changes and transfers of certain businesses between operating groups.

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Regulatory Filings
BMO's continuous disclosure materials, including our interim consolidated financial statements and interim MD&A, audited annual consolidated financial statements and annual MD&A, Annual Information Form and Notice of Annual Meeting of Shareholders and Management Proxy Circular, are available on our website at www.bmo.com/investorrelations, on the Canadian Securities Administrators' website at www.sedar.com and on the EDGAR section of the U.S. Securities and Exchange Commission's (SEC) website at www.sec.gov. BMO's Chief Executive Officer and Chief Financial Officer certify the appropriateness and fairness of BMO's annual and interim consolidated financial statements, MD&A and Annual Information Form, the effectiveness of BMO's disclosure controls and procedures and the effectiveness of, and any material weaknesses relating to, BMO's internal control over financial reporting. Information contained in or otherwise accessible through our website (www.bmo.com), or any third-party websites mentioned herein, does not form part of this document.

Caution
The About BMO, Financial Objectives and Value Measures, and Economic Developments and Outlook sections contain certain forward-looking statements. By their nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties. Refer to the Caution Regarding Forward-Looking Statements for a discussion of such risks and uncertainties and the material factors and assumptions related to the statements set forth in such sections.

Factors That May Affect Future Results

As noted in the following Caution Regarding Forward-Looking Statements, all forward-looking statements and information, by their nature, are subject to inherent risks and uncertainties, both general and specific, which may cause actual results to differ materially from the expectations expressed in any forward-looking statement. The Enterprise-Wide Risk Management section describes a number of risks, including credit and counterparty, market, insurance, liquidity and funding, operational non-financial, legal and regulatory, strategic, environmental and social, and reputation risk. Should our risk management framework prove ineffective, there could be a material adverse impact on our financial position and results.

Caution Regarding Forward-Looking Statements

Bank of Montreal's public communications often include written or oral forward-looking statements. Statements of this type are included in this document, and may be included in other filings with Canadian securities regulators or the U.S. Securities and Exchange Commission, or in other communications. All such statements are made pursuant to the "safe harbor" provisions of, and are intended to be forward-looking statements under, the United States *Private Securities Litigation Reform Act of 1995* and any applicable Canadian securities legislation. Forward-looking statements in this document may include, but are not limited to, statements with respect to our objectives and priorities for fiscal 2022 and beyond, our strategies or future actions, our targets and commitments (including with respect to net zero emissions), expectations for our financial condition, capital position or share price, the regulatory environment in which we operate, the results of, or outlook for, our operations or for the Canadian, U.S. and international economies, and the COVID-19 pandemic, and include statements made by our management. Forward-looking statements are typically identified by words such as "will", "would", "should", "believe", "expect", "anticipate", "project", "intend", "estimate", "plan", "goal", "commit", "target", "may", "might", "schedule", "forecast" and "could" or negative or grammatical variations thereof.

By their nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, both general and specific in nature. There is significant risk that predictions, forecasts, conclusions or projections will not prove to be accurate, that our assumptions may not be correct, and that actual results may differ materially from such predictions, forecasts, conclusions or projections. The uncertainty created by the COVID-19 pandemic has heightened this risk, given the increased challenge in making assumptions, predictions, forecasts, conclusions or projections. We caution readers of this document not to place undue reliance on our forward-looking statements, as a number of factors – many of which are beyond our control and the effects of which can be difficult to predict – could cause actual future results, conditions, actions or events to differ materially from the targets, expectations, estimates or intentions expressed in the forward-looking statements.

The future outcomes that relate to forward-looking statements may be influenced by many factors, including, but not limited to: general economic and market conditions in the countries in which we operate, including labour challenges; the severity, duration and spread of the COVID-19 pandemic, and possibly other outbreaks of disease or illness, and its impact on local, national or international economies, as well as its heightening of certain risks that may affect our future results; information, privacy and cyber security, including the threat of data breaches, hacking, identity theft and corporate espionage, as well as the possibility of denial of service resulting from efforts targeted at causing system failure and service disruption; benchmark interest rate reforms; technological changes and technology resiliency; political conditions, including changes relating to, or affecting, economic or trade matters; climate change and other environmental and social risk; the Canadian housing market and consumer leverage; inflationary pressures; global supply-chain disruptions; changes in monetary, fiscal, or economic policy; changes in laws, including tax legislation and interpretation, or in supervisory expectations or requirements, including capital, interest rate and liquidity requirements and guidance, and the effect of such changes on funding costs; weak, volatile or illiquid capital or credit markets; the level of competition in the geographic and business areas in which we operate; judicial or regulatory proceedings; the accuracy and completeness of the information we obtain with respect to our customers and counterparties; failure of third parties to comply with their obligations to us; our ability to execute our strategic plans and to complete proposed acquisitions or dispositions, including obtaining regulatory approvals; critical accounting estimates and the effects of changes to accounting standards, rules and interpretations on these estimates; operational and infrastructure risks, including with respect to reliance on third parties; changes to our credit ratings; global capital markets activities; the possible effects on our business of war or terrorist activities; natural disasters and disruptions to public infrastructure, such as transportation, communications, power or water supply; and our ability to anticipate and effectively manage risks arising from all of the foregoing factors.

We caution that the foregoing list is not exhaustive of all possible factors. Other factors and risks could adversely affect our results. For more information, please refer to the discussion in the Risks That May Affect Future Results section, and the sections related to credit and counterparty, market, insurance, liquidity and funding, operational non-financial, legal and regulatory, strategic, environmental and social, and reputation risk, in the Enterprise-Wide Risk Management section, all of which outline certain key factors and risks that may affect our future results. Investors and others should carefully consider these factors and risks, as well as other uncertainties and potential events, and the inherent uncertainty of forward-looking statements. We do not undertake to update any forward-looking statements, whether written or oral, that may be made from time to time by the organization or on its behalf, except as required by law. The forward-looking information contained in this document is presented for the purpose of assisting shareholders and analysts in understanding our financial position as at and for the periods ended on the dates presented, as well as our strategic priorities and objectives, and may not be appropriate for other purposes.

Material economic assumptions underlying the forward-looking statements contained in this document are set out in the Economic Developments and Outlook section, as well as in the Allowance for Credit Losses section. Assumptions about the performance of the Canadian and U.S. economies, as well as overall market conditions and their combined effect on our business, are material factors we consider when determining our strategic priorities, objectives and expectations for our business. In determining our expectations for economic growth, we primarily consider historical economic data, past relationships between economic and financial variables, changes in government policies, and the risks to the domestic and global economy.

About BMO

Established in 1817, BMO Financial Group (BMO, Bank of Montreal, the bank, we, our, us) is a highly diversified provider of financial products and services based in North America. We are the eighth largest bank in North America by assets, with total assets of $988.2 billion. Our employees are engaged, our workforce is diverse, and our culture is award-winning. BMO provides a broad range of personal and commercial banking, wealth management, global markets and investment banking products and services, conducting business through three operating groups: Personal and Commercial Banking, BMO Wealth Management and BMO Capital Markets. We serve eight million customers across Canada through our Canadian personal and commercial banking segment, BMO Bank of Montreal. In the United States, we serve more than two million personal, business and commercial banking customers nationally through BMO Harris Bank, based in the U.S. Midwest. We also serve customers through our wealth management businesses – BMO Private Wealth, BMO InvestorLine, BMO Wealth Management U.S., BMO Global Asset Management and BMO Insurance. BMO Capital Markets provides a full suite of financial products and services to North American and international corporate, institutional and government clients through its Investment and Corporate Banking and Global Markets divisions.

At BMO, we continue to build a high-performance, digitally-enabled, future-ready bank. Anchored in our Purpose, we are driven by our strategic priorities for growth, strengthened by our approach to sustainability, and guided by our values to build a foundation of trust with our stakeholders and achieve leading customer loyalty.

Our Purpose: Boldly Grow the Good *in business and life*

BMO has a deep sense of purpose – to be a champion for progress and a catalyst for change. We are leveraging our position as a leading financial services provider to create opportunities for our communities and our stakeholders to make positive, sustainable change, in the belief that success can and must be mutual. Our bold commitments for a sustainable future, a thriving economy and an inclusive society are reflected in our active direct response to today's most pressing challenges.

- **Thriving economy** – Increasing support for small businesses, women entrepreneurs and Canadian Indigenous and military customers.
- **Sustainable future** – Being our clients' lead partner in the transition to a net zero world, delivering on our commitments to sustainable financing and responsible investing.
- **Inclusive society** – Working toward zero barriers to inclusion, supporting equal access to opportunities for our colleagues, customers and the communities we serve.

Our Strategic Priorities

Consistent strong performance is essential to achieving our Purpose. We aim to deliver top-tier total shareholder return and achieve our financial objectives by aligning our operations with, and executing on, our strategic priorities:

- **World-class** client loyalty and growth
- **Winning culture** driven by alignment, empowerment and recognition
- **Digital first** for speed, efficiency and scale
- **Simplify** work and **eliminate complexity**
- **Superior management** of **risk** and **capital** performance.

Our group strategic priorities align with and support our enterprise-wide strategy, positioning us well to drive competitive performance. The group strategies are outlined in the 2021 Operating Groups Performance Review.

Our Approach to Sustainability

Our commitment to sustainability is embedded in our strategy and is fundamental to our Purpose. We identify the most significant effects of our business operations, products and services on our stakeholders and the communities in which we operate. We take steps to manage our business in a manner that is consistent with our sustainability objectives, and we consider the interests of our stakeholders. We apply a variety of ESG practices to capture opportunities and manage risks in key areas such as sustainable finance, climate change, human rights, and diversity, equity and inclusion.

Our Values

Four core values shape our culture and underpin our choices and actions:

- **Integrity** – Do what is right
- **Diversity** – Learn from difference
- **Responsibility** – Make tomorrow better
- **Empathy** – Put others first.

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Financial Objectives and Value Measures

Results and measures in this section are presented on a reported and an adjusted basis, and management considers both to be useful in assessing our performance. It permits readers to assess the impact of certain specified items on results for the periods presented, and to better assess results, excluding those items that may not be reflective of ongoing business performance.

Adjusted results and measures in this section, including earnings per share (EPS), EPS growth, return on equity (ROE), return on tangible common equity (ROTCE), net income, revenue, non-interest expense, efficiency ratio and operating leverage, are non-GAAP amounts, measures and ratios, and are discussed in the Non-GAAP and Other Financial Measures section.

We also present reported and adjusted revenue on a basis that is net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), and we calculate our efficiency ratio and operating leverage on a similar basis. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets, caused by movements in interest rates and equity markets, that is largely offset in CCPB. Presenting our revenue, efficiency ratio and operating leverage on a net basis allows for a better assessment of operating results.

Measures and ratios on a net revenue basis are non-GAAP. For more information on CCPB, refer to the Non-GAAP and Other Financial Measures section. Information regarding the composition of each of these measures is also provided in the Glossary of Financial Terms.

Financial Objectives

BMO's business planning process is rigorous, sets ambitious goals and considers prevailing economic conditions, our risk appetite, our customers' evolving needs and the opportunities available across our lines of business. It includes clear and direct accountability for annual performance that is measured against both internal and external benchmarks and our progress toward our strategic priorities.

We have established medium-term financial objectives for certain important performance measures, which are set out below. Medium-term is generally defined as three to five years, and performance is measured on an adjusted basis. We aim to deliver top-tier total shareholder return and achieve our financial objectives by aligning our operations with, and executing on, our strategic priorities. We consider top-tier returns to be top-quartile shareholder returns, relative to our Canadian banking peer group.

These objectives serve as guideposts as we execute on our strategic priorities, and they assume a normal business environment. Our ability to meet these objectives in any single period may be adversely affected by extraordinary developments, such as the impacts of the COVID-19 pandemic. We recognize that in managing our operations and our exposure to risk, current profitability and our ability to meet these objectives in a single period must be balanced with the need to invest in our businesses for long-term sustainability and future growth.

Our financial objectives and our performance against these objectives are outlined in the table below and described in the sections that follow. BMO's financial results in 2021 reflected continued execution on our strategic priorities, as well as improving economic conditions. Performance in fiscal 2020 reflected the negative impacts of the COVID-19 pandemic, including elevated provisions for credit losses.

Financial Objectives and Metrics

As at and for the periods ended October 31, 2021	Financial objectives (adjusted)	Reported basis			Adjusted basis (1)		
		1-year	3-year (2)	5-year (2)	1-year	3-year (2)	5-year (2)
Total shareholder return (%)	Top-tier	75.9	15.7	14.0	na	na	na
Earnings per share growth (%)	7-10%	53.3	12.3	10.8	68.0	13.0	11.5
Average return on equity (%)	15% or more	14.9	12.5	12.8	16.7	13.5	13.8
Net operating leverage (%) (3)	2% or more	0.4	1.4	2.1	6.1	3.2	2.6
Common Equity Tier 1 Ratio (%)	Exceed regulatory requirement	13.7	na	na	na	na	na

(1) Adjusted results and measures in this table are non-GAAP measures and are discussed in the Non-GAAP and Other Financial Measures section.
(2) The 3-year and 5-year EPS growth rate and net operating leverage reflect compound annual growth rates (CAGR).
(3) Net operating leverage on a reported and adjusted basis presented in this table are non-GAAP measures and are discussed in the Non-GAAP and Other Financial Measures section.
na – not applicable

Total Shareholder Return

The average annual total shareholder return (TSR) is a key measure of shareholder value, and over time, we expect that execution on our strategic priorities will drive value creation for our shareholders. The one-year, three-year and five-year average annual TSR was 75.9%, 15.7% and 14.0%, respectively, all above our Canadian peer group average (excluding BMO) of 56.1%, 15.3% and 13.6%, respectively.

The table below summarizes dividends paid on BMO's common shares over the past five years and the movements in our share price. An investment of $1,000 in BMO common shares made at the beginning of fiscal 2017 would have been worth $1,924 as at October 31, 2021, assuming reinvestment of dividends, for a total return of 92.4%.

Dividends declared per common share in fiscal 2021 totalled $4.24, unchanged from the prior year, as the Office of the Superintendent of Financial Institutions' (OSFI's) restriction on dividend increases by federally regulated financial institutions effective March 13, 2020, remained in place throughout the year and was removed effective November 4, 2021. Dividends paid over a five-year period have increased at an average annual compound rate of approximately 5%.

The **average annual total shareholder return (TSR)** represents the average annual total return earned on an investment in BMO common shares made at the beginning of a fixed period. The return includes the change in share price and assumes dividends received were reinvested in additional common shares.

Total Shareholder Return

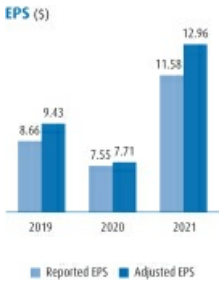
For the year ended October 31	2021	2020	2019	2018	2017	3-year CAGR (1)	5-year CAGR (1)
Closing market price per common share ($)	**134.37**	79.33	97.50	98.43	98.83	**10.9**	**9.5**
Dividends paid ($ per share)	**4.24**	4.21	3.99	3.72	3.52	**4.5**	**4.8**
Dividend yield (%)	**3.2**	5.3	4.2	3.8	3.6	**nm**	**nm**
Increase (decrease) in share price (%)	**69.4**	(18.6)	(0.9)	(0.4)	15.8	**nm**	**nm**
Total annual shareholder return (%) (2)	**75.9**	(14.6)	3.2	3.3	20.2	**15.7**	**14.0**

(1) Compound annual growth rate (CAGR) expressed as a percentage.
(2) Total annual shareholder return assumes reinvestment of quarterly dividends and therefore does not equal the sum of dividend and share price returns in the table.
nm – not meaningful

Earnings per Share Growth

The year-over-year percentage change in earnings per share (EPS) and in adjusted EPS are our key measures for analyzing earnings growth. All references to EPS are to diluted EPS, unless otherwise indicated.

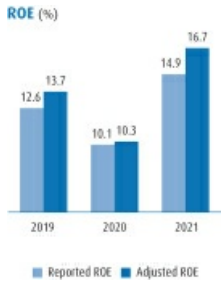
EPS was $11.58, an increase of $4.03 or 53% from $7.55 in 2020. Adjusted EPS was $12.96, an increase of $5.25 or 68% from $7.71 in 2020. The increase in EPS primarily reflected higher earnings. Reported net income available to common shareholders increased 55% year-over-year, while the average number of diluted common shares outstanding increased 1%.



Earnings per share (EPS) is calculated by dividing net income, after deducting preferred share dividends and distributions on other equity instruments, by the average number of common shares outstanding. Adjusted EPS is calculated in the same manner using adjusted net income. Diluted EPS, which is BMO's basis for measuring performance, adjusts for possible conversions of financial instruments into common shares if those conversions would reduce EPS, and is more fully explained in Note 23 of the consolidated financial statements.

Return on Equity

Reported return on equity (ROE) was 14.9% in 2021 and adjusted ROE was 16.7%, compared with 10.1% and 10.3%, respectively, in 2020. Reported and adjusted ROE increased due to higher net income, partially offset by growth in common equity. There was an increase of $2,660 million or 55% in reported net income available to common shareholders and an increase of $3,453 million or 70% in adjusted net income available to common shareholders in the current year. Average common shareholders' equity increased $2.2 billion or 5% from 2020, primarily due to growth in retained earnings, partially offset by a decrease in accumulated other comprehensive income. The reported return on tangible common equity (ROTCE) was 17.0%, compared with 11.9% in 2020, and adjusted ROTCE was 18.9%, compared with 11.9% in 2020. Book value per share increased 4% from the prior year to $80.18, reflecting the increase in shareholders' equity.



Return on common shareholders' equity (ROE) is calculated as net income, less preferred dividends and distributions on other equity instruments, as a percentage of average common shareholders' equity. Common shareholders' equity comprises common share capital, contributed surplus, accumulated other comprehensive income (loss) and retained earnings. Adjusted ROE is calculated using adjusted net income rather than net income.

Return on tangible common equity (ROTCE) is calculated as net income available to common shareholders, adjusted for the amortization of acquisition-related intangible assets, as a percentage of average tangible common equity. Tangible common equity is calculated as common shareholders' equity, less goodwill and acquisition-related intangible assets, net of related deferred tax liabilities. Adjusted ROTCE is calculated using adjusted net income rather than net income.

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Efficiency Ratio and Operating Leverage

BMO's reported gross efficiency ratio was 57.0%, compared with 56.3% in 2020. The adjusted gross efficiency ratio was 53.6%, compared with 55.8% in 2020. On a net revenue basis (1), the reported efficiency ratio was 60.1%, compared with 60.4% in 2020, and the adjusted efficiency ratio was 56.5%, compared with 59.8% in 2020, an improvement of 330 basis points.

Reported operating leverage was negative 1.5%. On a net revenue basis, reported operating leverage was positive 0.4%, and adjusted operating leverage was positive 6.1%.

(1) This ratio is calculated using revenue and non-interest expense. Refer to the Revenue section and theNon-Interest Expense section.

Operating leverage is the difference between revenue and non-interest expense growth rates.

Operating leverage, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), is the difference between net revenue and non-interest expense growth rates, with net revenue comprising revenue excluding CCPB.

Adjusted net operating leverage is the difference between adjusted revenue, net of adjusted CCPB, and adjusted non-interest expense growth rates. The bank evaluates performance using adjusted revenue, net of CCPB.

Efficiency ratio (or expense-to-revenue ratio) is a measure of productivity. It is calculated as non-interest expense divided by total revenue (on a taxable equivalent basis in the operating groups), expressed as a percentage.

Efficiency ratio, net of CCPB, is calculated as non-interest expense divided by total revenue, net of CCPB (on a taxable equivalent basis in the operating groups), expressed as a percentage.

Adjusted net efficiency ratio is calculated in the same manner as efficiency ratio, net of CCPB, utilizing adjusted revenue, net of adjusted CCPB, and adjusted non-interest expense.



Common Equity Tier 1 Ratio

Our Common Equity Tier 1 Ratio was 13.7% as at October 31, 2021, compared with 11.9% as at October 31, 2020. The CET1 Ratio increased from the end of fiscal 2020, primarily driven by strong internal capital generation.

Common Equity Tier 1 (CET1) Ratio is calculated as CET1 capital, which comprises common shareholders' equity, net of deductions for goodwill, intangible assets, pension assets, certain deferred tax assets and other items (which may include a portion of expected credit loss provisions), divided by risk-weighted assets.
The CET1 Ratio is disclosed in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline.



Supporting a Sustainable and Inclusive Future

At BMO, we have a long-standing commitment to support a sustainable future, a thriving economy and an inclusive society, and we are acting on this commitment with purpose. In support of our customers, communities and employees, we recently:

- Deployed more than US$2 billion in loans and investments as part of BMO Empower™, a five-year, US$5 billion commitment to advance an inclusive economic recovery and address key barriers faced by minority businesses, communities and families in the United States.
- Assisted customers experiencing financial hardship caused by the COVID-19 pandemic, including facilitating access to relief programs introduced by the Canadian and U.S. governments, such as the Canada Emergency Business Account (CEBA) program, the Highly Affected Sector Credit Availability Program (HASCAP) and the Trade Expansion Lending Program (TELP) in Canada, and the Paycheck Protection Program (PPP) in the United States.
- Announced a 10-year, $12 billion commitment to finance affordable housing in Canada.
- Released Wîcihitowin ᐐᒋᐦᐃᑐᐏᐣ , our first annual Indigenous Partnerships and Progress Report, highlighting the partnership with Indigenous communities and BMO's Indigenous Advisory Council to further education, employment and economic empowerment.
- Declared our Climate Ambition, which is to be our clients' lead partner in the transition to a net zero world; launched the BMO Climate Institute to provide insights and best practices for climate solutions; joined the Net-Zero Banking Alliance; and established a new, innovative Energy Transition Group.
- Ranked among the most sustainable companies on the Dow Jones Sustainability Indices (DJSI) – one of only five companies in Canada included in the DJSI World Index, earning the highest score in Corporate Governance, Customer Relationship Management, Financial Inclusion, Environmental Reporting and Social Reporting.
- In addition, in 2021 we were:
  - Named to Canada's Best 50 Corporate Citizens Ranking by *Corporate Knights*
  - Recognized as one of the World's Most Ethical Companies for the fourth consecutive year by the Ethisphere Institute
  - Recognized for the sixth consecutive year on the Bloomberg Gender-Equality Index.

Financial Highlights

(Canadian $ in millions, except as noted)	2021	2020	2019
Summary Income Statement (1)			
Net interest income	**14,310**	13,971	12,888
Non-interest revenue	**12,876**	11,215	12,595
Revenue	**27,186**	25,186	25,483
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**1,399**	1,708	2,709
Revenue, net of CCPB (2)	**25,787**	23,478	22,774
Provision for credit losses on impaired loans	**525**	1,522	751
Provision for (recovery of) credit losses on performing loans	**(505)**	1,431	121
Total provision for credit losses (PCL)	**20**	2,953	872
Non-interest expense	**15,509**	14,177	14,630
Provision for income taxes	**2,504**	1,251	1,514
Net income	**7,754**	5,097	5,758
Adjusted net income	**8,651**	5,201	6,249
Common Share Data ($, except as noted) (1)			
Basic earnings per share	**11.60**	7.56	8.68
Diluted earnings per share	**11.58**	7.55	8.66
Adjusted diluted earnings per share	**12.96**	7.71	9.43
Dividends declared per share	**4.24**	4.24	4.06
Book value per share	**80.18**	77.40	71.54
Closing share price	**134.37**	79.33	97.50
Number of common shares outstanding (in millions)			
End of period	**648.1**	645.9	639.2
Average basic	**647.2**	641.4	638.9
Average diluted	**648.7**	642.1	640.4
Market capitalization ($ billions)	**87.1**	51.2	62.3
Dividend yield (%)	**3.2**	5.3	4.2
Dividend payout ratio (%)	**36.5**	56.1	46.8
Adjusted dividend payout ratio (%)	**32.6**	54.9	43.0
Financial Measures and Ratios (%) (1)			
Return on equity	**14.9**	10.1	12.6
Adjusted return on equity	**16.7**	10.3	13.7
Return on tangible common equity	**17.0**	11.9	15.1
Adjusted return on tangible common equity	**18.9**	11.9	16.1
Efficiency ratio, net of CCPB	**60.1**	60.4	64.2
Adjusted efficiency ratio, net of CCPB	**56.5**	59.8	61.4
Operating leverage, net of CCPB	**0.4**	6.2	(2.9)
Adjusted operating leverage, net of CCPB	**6.1**	2.7	0.8
Net interest margin on average earning assets	**1.59**	1.64	1.70
Effective tax rate	**24.4**	19.7	20.8
Adjusted effective tax rate	**22.7**	19.8	21.1
Total PCL-to-average net loans and acceptances	**–**	0.63	0.20
PCL on impaired loans-to-average net loans and acceptances	**0.11**	0.33	0.17
Liquidity coverage ratio (LCR) (3)	**125**	131	138
Net stable funding ratio (NSFR) (3)	**118**	na	na
Balance Sheet and Other Information (as at $ millions, except as noted)			
Assets	**988,175**	949,261	852,195
Average earning assets	**897,302**	853,336	759,395
Gross loans and acceptances	**474,847**	464,216	452,427
Net loans and acceptances	**472,283**	460,913	450,577
Deposits	**685,631**	659,034	568,143
Common shareholders' equity	**51,965**	49,995	45,728
Total risk-weighted assets (4)	**325,433**	336,607	317,029
Assets under administration	**634,713**	653,319	632,193
Assets under management	**523,270**	482,554	471,160
Capital Ratios (%) (4)			
Common Equity Tier 1 Ratio	**13.7**	11.9	11.4
Tier 1 Capital Ratio	**15.4**	13.6	13.0
Total Capital Ratio	**17.6**	16.2	15.2
Leverage Ratio	**5.1**	4.8	4.3
Foreign Exchange Rates ($)			
As at Canadian/U.S. dollar	**1.2376**	1.3319	1.3165
Average Canadian/U.S. dollar	**1.2554**	1.3441	1.3290

(1) Adjusted results remove certain items from reported results and are used to calculate our adjusted measures as presented in the above table. Management assesses performance on a reported basis and an adjusted basis, and considers both to be useful. Revenue, net of CCPB, and adjusted results, measures and ratios in this table are non-GAAP. For further information, refer to the Non-GAAP and Other Financial Measures section and for a composition of non-GAAP amounts, measures and ratios, as well as supplementary financial measures, refer to the Glossary of Financial Terms.
(2) We present revenue, efficiency ratio and operating leverage on a basis that is net of CCPB, which reduces the variability in insurance revenue from changes in fair value that are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in CCPB.
(3) LCR and NSFR are disclosed in accordance with OSFI's Liquidity Adequacy Requirements (LAR) Guideline, as applicable.
(4) Capital ratios and risk-weighted assets are disclosed in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline, as applicable.
na – not applicable

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Non-GAAP and Other Financial Measures

Results and measures in this document are presented on a GAAP basis. Unless otherwise indicated, all amounts are in Canadian dollars and have been derived from our audited annual consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRS). References to GAAP mean IFRS. We use a number of financial measures to assess our performance, as well as the performance of our operating businesses, including measures and ratios that are presented on a non-GAAP basis, as described below. We believe that these non-GAAP amounts, measures and ratios, read together with our GAAP results, provide readers with a better understanding of how management assesses results.

Non-GAAP amounts, measures and ratios do not have standardized meanings under GAAP. They are unlikely to be comparable to similar measures presented by other companies and should not be viewed in isolation from, or as a substitute for, GAAP results.

For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial terms.

Our non-GAAP measures broadly fall into the following categories:

Adjusted measures and ratios

Management considers both reported and adjusted results and measures useful in assessing underlying ongoing business performance. Adjusted results and measures remove certain specified items from revenue, non-interest expense and income taxes, as detailed in the following table. Adjusted results and measures presented in this document are non-GAAP. Presenting results on both a reported basis and an adjusted basis permits readers to assess the impact of certain items on results for the periods presented, and to better assess results excluding those items that may not be reflective of ongoing business performance. As such, the presentation may facilitate readers' analysis of trends. Except as otherwise noted, management's discussion of changes in reported results in this document applies equally to changes in the corresponding adjusted results.

Measures net of insurance claims, commissions and changes in policy benefit liabilities (CCPB)

We also present reported and adjusted revenue on a basis that is net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), and our efficiency ratio and operating leverage are calculated on a similar basis, as reconciled in the Revenue section. Measures and ratios presented on a basis net of CCPB are non-GAAP. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets, caused by movements in interest rates and equity markets. The investments that support policy benefit liabilities are predominantly fixed income assets recorded at fair value, with changes in fair value recorded in insurance revenue in the Consolidated Statement of Income. These fair value changes are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in CCPB. The presentation and discussion of revenue, efficiency ratios and operating leverage on a net basis reduces this variability, which allows for a better assessment of operating results. For more information, refer to the Insurance Claims, Commissions and Changes in Policy Benefit Liabilities section.

Presenting results on a taxable equivalent basis (teb)

We analyze consolidated revenue on a reported basis. In addition, we analyze revenue on a taxable equivalent basis (teb) at the operating group level, consistent with the Canadian peer group. Revenue and the provision for income taxes in BMO Capital Markets and U.S. P&C are increased on tax-exempt securities to an equivalent pre-tax basis. These adjustments are offset in Corporate Services. Presenting results on a teb basis reflects how our operating groups manage their business and is useful to facilitate comparisons of income between taxable and tax-exempt sources. The effective tax rate is also analyzed on a teb basis for consistency of approach, with the offset to operating segment adjustments recorded in Corporate Services.

Tangible common equity and return on tangible common equity

Tangible common equity is calculated as common shareholders' equity less goodwill and acquisition-related intangible assets, net of related deferred tax liabilities. Return on tangible common equity is commonly used in the North American banking industry and is meaningful because it measures the performance of businesses consistently, whether they were acquired or developed organically.

Presenting results on a U.S. dollar basis

Results and measures that exclude the impact of Canadian/U.S. dollar exchange rate movements on BMO's U.S. segment are non-GAAP. Refer to the Foreign Exchange section for a discussion of the effects of changes in exchange rates on our results.

We present our U.S. P&C business results, as well as select U.S. segment information for the bank, BMO Wealth Management, BMO Capital Markets and Corporate Services, on a U.S. dollar basis. Presenting these results on a U.S. dollar basis is useful in assessing the underlying performance without the variability caused by changes in foreign exchange rates.

Non-GAAP and Other Financial Measures

(Canadian $ in millions, except as noted)	2021	2020	2019
Reported Results			
Revenue	**27,186**	25,186	25,483
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**(1,399)**	(1,708)	(2,709)
Revenue, net of CCPB	**25,787**	23,478	22,774
Provision for credit losses	**(20)**	(2,953)	(872)
Non-interest expense	**(15,509)**	(14,177)	(14,630)
Income before income taxes	**10,258**	6,348	7,272
Provision for income taxes	**(2,504)**	(1,251)	(1,514)
Net Income	**7,754**	5,097	5,758
Diluted EPS ($)	**11.58**	7.55	8.66
Adjusting Items Impacting Revenue (Pre-tax)			
Impact of divestitures (1)	**29**	–	–
Adjusting Items Impacting CCPB (Pre-tax)			
Reinsurance adjustment (2)	**–**	–	(25)
Adjusting Items Impacting Non-Interest Expense (Pre-tax)			
Acquisition integration costs (3)	**(9)**	(14)	(13)
Amortization of acquisition-related intangible assets (4)	**(88)**	(121)	(128)
Impact of divestitures (1)	**(886)**	–	–
Restructuring (costs) reversals (5)	**24**	–	(484)
Impact of adjusting items on non-interest expense (pre-tax)	**(959)**	(135)	(625)
Impact of adjusting items on reported net income (pre-tax)	**(930)**	(135)	(650)
Adjusting Items Impacting Revenue (After-tax)			
Impact of divestitures (1)	**22**	–	–
Adjusting Items Impacting CCPB (After-tax)			
Reinsurance adjustment (2)	**–**	–	(25)
Adjusting Items Impacting Non-Interest Expense (After-tax)			
Acquisition integration costs (3)	**(7)**	(11)	(10)
Amortization of acquisition-related intangible assets (4)	**(66)**	(93)	(99)
Impact of divestitures (1)	**(864)**	–	–
Restructuring (costs) reversals (5)	**18**	–	(357)
Impact of adjusting items on non-interest expense (after-tax)	**(919)**	(104)	(466)
Impact of adjusting items on reported net income (after-tax)	**(897)**	(104)	(491)
Impact on diluted EPS ($)	**(1.38)**	(0.16)	(0.77)
Adjusted Results			
Revenue	**27,157**	25,186	25,483
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**(1,399)**	(1,708)	(2,684)
Revenue, net of CCPB	**25,758**	23,478	22,799
Provision for credit losses	**(20)**	(2,953)	(872)
Non-interest expense	**(14,550)**	(14,042)	(14,005)
Income before income taxes	**11,188**	6,483	7,922
Provision for income taxes	**(2,537)**	(1,282)	(1,673)
Net Income	**8,651**	5,201	6,249
Diluted EPS ($)	**12.96**	7.71	9.43

(1) Fiscal 2021 reported net income included a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and $85 million ($107 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense.

(2) Fiscal 2019 reported net income included a reinsurance adjustment of $25 million (pre-tax and after-tax) in claims, commissions and changes in policy benefit liabilities for the net impact of major reinsurance claims incurred after the announced wind-down of the reinsurance business. This reinsurance adjustment is included in BMO Wealth Management.

(3) Acquisition integration costs related to KGS-Alpha and Clearpool are recorded in non-interest expense in BMO Capital Markets.

(4) Amortization of acquisition-related intangible assets is recorded in non-interest expense in the related operating group.

(5) Fiscal 2019 reported net income included a $357 million ($484 million pre-tax) restructuring charge related to severance and a small amount of real estate-related costs. Fiscal 2021 reported net income included a partial reversal of restructuring charges related to severance of $18 million ($24 million pre-tax). Restructuring charges and the reversal were recorded in non-interest expense in Corporate Services.

Certain comparative figures have been reclassified to conform with the current year's presentation.

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Summary of Reported and Adjusted Results by Operating Segment

(Canadian $ in millions, except as noted)	Canadian P&C	U.S. P&C	Total P&C	BMO Wealth Management	BMO Capital Markets	Corporate Services	Total Bank	U.S. Segment (1) (US$ in millions)
2021								
Reported net income (loss)	**3,237**	**2,189**	**5,426**	**1,474**	**2,140**	**(1,286)**	**7,754**	**2,593**
Acquisition integration costs (2)	**–**	**–**	**–**	**–**	**7**	**–**	**7**	**6**
Amortization of acquisition-related intangible assets (3)	**1**	**24**	**25**	**24**	**17**	**–**	**66**	**37**
Impact of divestitures (4)	**–**	**–**	**–**	**–**	**–**	**842**	**842**	**27**
Restructuring costs (reversals) (5)	**–**	**–**	**–**	**–**	**–**	**(18)**	**(18)**	**(13)**
Adjusted net income (loss)	**3,238**	**2,213**	**5,451**	**1,498**	**2,164**	**(462)**	**8,651**	**2,650**
2020								
Reported net income (loss)	2,027	1,277	3,304	1,096	1,087	(390)	5,097	1,163
Acquisition integration costs (2)	–	–	–	–	11	–	11	8
Amortization of acquisition-related intangible assets (3)	2	39	41	34	18	–	93	49
Adjusted net income (loss)	2,029	1,316	3,345	1,130	1,116	(390)	5,201	1,220
2019								
Reported net income (loss)	2,624	1,611	4,235	1,059	1,091	(627)	5,758	1,432
Acquisition integration costs (2)	–	–	–	–	10	–	10	7
Amortization of acquisition-related intangible assets (3)	2	43	45	37	17	–	99	53
Restructuring costs (reversals) (5)	–	–	–	–	–	357	357	–
Reinsurance adjustment (6)	–	–	–	25	–	–	25	86
Adjusted net income (loss)	2,626	1,654	4,280	1,121	1,118	(270)	6,249	1,578

(1) U.S. segment results presented in U.S. dollars are non-GAAP amounts.
(2) KGS-Alpha and Clearpool pre-tax acquisition integration costs of $9 million in fiscal 2021, $14 million in fiscal 2020 and $13 million in fiscal 2019 are recorded in non-interest expense in BMO Capital Markets.
(3) Amortization of acquisition-related intangible assets is recorded in non-interest expense in the related operating group. Canadian P&C recorded pre-tax amounts of $2 million in each of fiscal 2021, fiscal 2020 and fiscal 2019. U.S. P&C recorded pre-tax amounts of $33 million in fiscal 2021, $53 million in fiscal 2020 and $57 million in fiscal 2019. BMO Wealth Management recorded pre-tax amounts of $31 million in fiscal 2021, $43 million in fiscal 2020 and $47 million in fiscal 2019. BMO Capital Markets recorded pre-tax amounts of $22 million in fiscal 2021, $23 million in fiscal 2020 and $22 million in fiscal 2019.
(4) Fiscal 2021 reported net income included a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and $85 million ($107 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense.
(5) Fiscal 2019 reported net income included a $357 million ($484 million pre-tax) restructuring charge related to severance and a small amount of real estate-related costs. Fiscal 2021 reported net income included a partial reversal of restructuring charges related to severance of $18 million ($24 million pre-tax). Restructuring charges and reversal were recorded in non-interest expense in Corporate Services.
(6) Fiscal 2019 reported net income included a reinsurance adjustment of $25 million (pre-tax and after-tax) in claims, commissions and changes in policy benefit liabilities for the net impact of major reinsurance claims incurred after the announced wind-down of the reinsurance business. This reinsurance adjustment is included in BMO Wealth Management.

Net Revenue, Efficiency Ratio and Operating Leverage

(Canadian $ in millions, except as noted) For the year ended October 31	2021	2020	2019
Reported			
Revenue	**27,186**	25,186	25,483
CCPB	**1,399**	1,708	2,709
Revenue, net of CCPB	**25,787**	23,478	22,774
Non-interest expense	**15,509**	14,177	14,630
Efficiency ratio (%)	**57.0**	56.3	57.4
Efficiency ratio, net of CCPB (%)	**60.1**	60.4	64.2
Revenue growth (%)	**7.9**	(1.2)	11.3
Revenue growth, net of CCPB (%)	**9.8**	3.1	5.7
Non-interest expense growth (%)	**9.4**	(3.1)	8.6
Operating leverage (%)	**(1.5)**	1.9	2.7
Operating leverage, net of CCPB (%)	**0.4**	6.2	(2.9)
Adjusted (1)			
Revenue	**27,157**	25,186	25,483
Impact of adjusting items on revenue	**(29)**	–	–
Impact of adjusting items on CCPB	**–**	–	25
CCPB	**1,399**	1,708	2,684
Revenue, net of CCPB	**25,758**	23,478	22,799
Impact of adjusting items on non-interest expense	**(959)**	(135)	(625)
Non-interest expense	**14,550**	14,042	14,005
Efficiency ratio (%)	**53.6**	55.8	55.0
Efficiency ratio, net of CCPB (%)	**56.5**	59.8	61.4
Revenue growth, net of CCPB (%)	**9.7**	3.0	5.8
Non-interest expense growth (%)	**3.6**	0.3	5.0
Operating leverage, net of CCPB (%)	**6.1**	2.7	0.8

(1) Refer to footnotes (1) to (5) in the Non-GAAP and Other Financial Measures table for adjusting items.

Return on Equity and Return on Tangible Common Equity

(Canadian $ in millions, except as noted) For the year ended October 31	2021	2020	2019
Reported net income	**7,754**	5,097	5,758
Dividends on preferred shares and distributions on other equity instruments	**(244)**	(247)	(211)
Net income available to common shareholders (A)	**7,510**	4,850	5,547
After-tax amortization of acquisition-related intangible assets	**66**	93	99
Net income available to common shareholders after adjusting for amortization of acquisition-related intangible assets (B)	**7,576**	4,943	5,646
After-tax impact of other adjusting items (1) (2) (3) (4)	**831**	11	392
Adjusted net income available to common shareholders (C)	**8,407**	4,954	6,038
Average common shareholders' equity (D)	**50,451**	48,235	44,170
Return on equity (%) (= A/D)	**14.9**	10.1	12.6
Adjusted return on equity (%) (= C/D)	**16.7**	10.3	13.7
Average tangible common equity (E) (5)	**44,505**	41,484	37,456
Return on tangible common equity (%) (= B/E)	**17.0**	11.9	15.1
Adjusted return on tangible common equity (%) (= C/E)	**18.9**	11.9	16.1

(1) Fiscal 2021 reported net income included a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and $85 million ($107 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense.
(2) Fiscal 2019 reported net income included a $357 million ($484 million pre-tax) restructuring charge related to severance and a small amount of real estate-related costs. Fiscal 2021 reported net income included a partial reversal of restructuring charges related to severance of $18 million ($24 million pre-tax). Restructuring charges and the reversal were recorded in non-interest expense in Corporate Services.
(3) Acquisition integration costs related to KGS-Alpha and Clearpool are recorded in non-interest expense in BMO Capital Markets.
(4) Amortization of acquisition-related intangible assets is recorded in non-interest expense in the related operating group.
(5) Common shareholders' equity (D above) adjusted for goodwill of $5,836 million ($6,530 million in 2020 and $6,417 million in 2019) and acquisition-related intangible assets of $381 million ($495 million in 2020 and $573 million in 2019), net of related deferred tax liabilities of $271 million ($274 million in 2020 and $276 million in 2019).

Capital is allocated to the operating segments based on the amount of regulatory capital required to support business activities. Unallocated capital is reported in Corporate Services. Capital allocation methodologies are reviewed annually.

Return on Equity by Operating Segment

	2021							2020	2019
(Canadian $ in millions, except as noted)	Canadian P&C	U.S. P&C	Total P&C	BMO Wealth Management	BMO Capital Markets	Corporate Services	Total Bank	Total Bank	Total Bank
Reported									
Net income available to common shareholders	**3,195**	**2,150**	**5,345**	**1,466**	**2,101**	**(1,402)**	**7,510**	4,850	5,547
Total average common equity	**11,147**	**13,522**	**24,669**	**5,899**	**10,913**	**8,970**	**50,451**	48,235	44,170
Return on equity (%)	**28.7**	**15.9**	**21.7**	**24.9**	**19.2**	**na**	**14.9**	10.1	12.6
Adjusted									
Net income available to common shareholders	**3,196**	**2,174**	**5,370**	**1,490**	**2,125**	**(578)**	**8,407**	4,954	6,038
Total average common equity	**11,147**	**13,522**	**24,669**	**5,899**	**10,913**	**8,970**	**50,451**	48,235	44,170
Return on equity (%)	**28.7**	**16.1**	**21.8**	**25.3**	**19.5**	**na**	**16.7**	10.3	13.7

na – not applicable

Economic Developments and Outlook

Economic Developments in 2021 and Outlook for 2022 (1)

After contracting by 5.2% in 2020, Canada's economy is expected to grow by 4.5% in 2021, despite supply-chain disruptions and public health restrictions that were put in place through the year to suppress a resurgence in COVID-19 cases. The recovery has been supported by substantial fiscal and monetary policy stimulus, high levels of household savings, elevated prices for energy and other commodities, robust U.S. demand and strong housing market activity. Despite a rise in COVID-19 case counts and a decline in agricultural production due to the severe drought in Western Canada, real GDP grew strongly in the third quarter of 2021 after contracting in the previous quarter. While disruptions to transportation and supply chains arising from floods in British Columbia and concerns about new virus variants will restrain activity in the near term, the economy is expected to experience growth of 4.0% in 2022. Growth will be supported by substantial pent-up demand for travel and in-person activities, and by additional government spending. Exports should benefit from rising prices for commodities and a recovering global economy, with the U.S. and Eurozone economies expected to strengthen. Housing market activity will likely remain elevated, although some moderation in sales is expected due to the continued erosion of affordability. The unemployment rate is projected to fall from 6.7% in October 2021 to below 6.0% at the end of 2022, returning to pre-pandemic levels. To support the economic recovery, the Bank of Canada is expected to hold the overnight policy rate near zero for several months, before shifting to a tighter policy stance by the middle of 2022. The annual rate of consumer inflation rose to an 18-year high of 4.7% in October 2021, due to significant price increases for gasoline, food, motor vehicles and housing. The increase in inflation reflects a temporary rebound in prices during the reopening of the economy, as well as supply-chain disruptions and rising commodity prices. Inflation is expected to subside in 2022 as supply-chain disruptions abate and energy prices moderate, but will likely remain above pre-pandemic levels. Inflation could remain high for longer than expected if wages accelerate in response to labour shortages. The Canadian dollar strengthened in 2021 on rising commodity prices, and it is projected to appreciate moderately further in 2022 in response to tighter monetary policy. Industry-wide, residential mortgage balances are expected to experience continued robust growth in response to low mortgage rates, higher housing prices and steady gains in employment, although the rate of growth will likely moderate alongside housing activity in the coming quarters. While growth in consumer credit balances (excluding mortgages) has been limited by restrained consumer spending, it is anticipated to increase in step with spending as most of the remaining pandemic-related restrictions are lifted. Industry-wide, growth in non-financial corporate credit has moderated as a result of the elevated balances built up early in the pandemic, but is expected to increase moderately in the year ahead as business investment rises along with a return of confidence.

The U.S. economy is expected to grow by 5.5% in 2021 after contracting by 3.4% in 2020, and growth is expected to reach 3.5% in 2022. The resurgence in COVID-19 case counts in the summer and a reduction in motor vehicle production due to microchip shortages slowed real GDP growth in the third quarter of 2021. However, the economic expansion is well-supported by elevated household savings, higher levels of personal wealth and a robust housing market. Federal spending on infrastructure projects, along with proposed spending on childcare, education and climate measures, would (if the latter measures are enacted) provide ongoing support to the economy, although this will be partially offset by related tax increases and the winding down of income-support programs. Housing market activity is expected to remain healthy in 2022, as a result of low interest rates and rising employment. In addition, business spending is on the rise, with non-residential investment surpassing pre-pandemic levels. The unemployment rate is projected to fall from 4.6% in October 2021 to 3.5% in late 2022, returning to pre-pandemic levels. To further support the recovery in labour markets, the Federal Reserve is expected to hold interest rates steady before raising them in the fall of 2022. After falling through mid-2021, longer-term interest rates are projected to rise in response to strong economic growth and a shift toward tighter monetary policy. Rising commodity prices, supply-chain bottlenecks and a rebound in travel-related costs and spending propelled the annual consumer price index to a three-decade high of 6.2% in October 2021. We expect the inflation rate to remain elevated through the turn of the year, before falling below 3% in late 2022, as supply shortages subside and energy prices moderate. Industry-wide, residential mortgage growth will likely remain healthy due to ongoing housing market activity. Consumer credit growth has been constrained by fiscal support programs, elevated levels of household savings and limited consumption of in-person services, but it should benefit from the expected growth in personal spending. Industry-wide, non-financial corporate credit growth has been subdued, but is anticipated to pick up as business confidence strengthens.

The unpredictable course of the COVID-19 pandemic subjects the economic outlook to a high degree of uncertainty, which is likely to persist until vaccines are more widely accessible and used across the global population. The Delta variant led to an upturn in COVID-19 case counts in many countries, and the emergence of other variants could lead to increased hospitalizations and renewed shutdowns of business activity, potentially resulting in a sustained economic contraction. Other risks to the economy stem from recent concerns about the solvency of a large property developer in China, a potential flare-up in U.S./China trade tensions, possible turbulence in some emerging market economies as interest rates rise, and the possibility of higher inflation due to persistent supply shortages and rising energy costs. Escalating housing prices in Canada and the United States could also leave either economy vulnerable to a correction in the housing market.

This Economic Developments and Outlook section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements.

(1) All periods in this section refer to the calendar year rather than fiscal year.

2021 Financial Performance Review

This section provides a review of BMO's enterprise financial performance for 2021 that focuses on the Consolidated Statement of Income in BMO's consolidated financial statements. A review of the operating groups' strategies and performance follows the enterprise review.

We use a number of financial measures to assess our performance, as well as the performance of our operating segments, including amounts, measures and ratios that are presented on a non-GAAP basis. We believe that these non-GAAP amounts, measures and ratios, read together with our GAAP results, provide readers with a better understanding of how management assesses results.

Non-GAAP amounts, measures and ratios do not have standardized meanings under GAAP. They are unlikely to be comparable to similar measures presented by other companies and should not be viewed in isolation from, or as a substitute for, GAAP results.

Further discussion of the non-GAAP amounts, measures and ratios is provided in the Non-GAAP and Other Financial Measures section.

For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms.

Foreign Exchange

The Canadian dollar equivalents of BMO's U.S. segment results that are denominated in U.S. dollars decreased relative to 2020 due to changes in the Canadian/U.S. dollar exchange rate. The table below indicates the relevant average Canadian/U.S. dollar exchange rates and the impact of changes in those rates on BMO's U.S. segment results. References in this document to the impact of the U.S. dollar do not include U.S. dollar-denominated amounts recorded outside of BMO's U.S. segment.

Economically, our U.S. dollar income stream was not hedged against the risk of changes in foreign exchange rates during 2021, 2020 and 2019. We regularly determine whether to enter into hedging transactions in order to mitigate the impact of foreign exchange rate movements on our net income. Changes in exchange rates will affect future results measured in Canadian dollars, and the impact on those results is a function of the periods in which revenue, expenses, provisions for (recoveries of) credit losses and income taxes arise.

Refer to the Enterprise-Wide Capital Management section for a discussion of the impact that changes in foreign exchange rates can have on BMO's capital position.

Effects of Changes in Exchange Rates on BMO's U.S. Segment Reported and Adjusted Results

(Canadian $ in millions, except as noted)	**2021 vs. 2020**	2020 vs. 2019
Canadian/U.S. dollar exchange rate (average)		
2021	**1.2554**	
2020	**1.3441**	1.3441
2019		1.3290
Effects on U.S. segment reported results		
Increased (Decreased) net interest income	**(374)**	83
Increased (Decreased) non-interest revenue	**(196)**	29
Increased (Decreased) revenue	**(570)**	112
Decreased (Increased) provision for credit losses	**(95)**	83
Decreased (Increased) expenses	**(358)**	43
Decreased (Increased) income taxes	**(21)**	(5)
Increased (Decreased) reported net income	**(96)**	(9)
Effects on U.S. segment adjusted results		
Increased (Decreased) net interest income	**(374)**	83
Increased (Decreased) non-interest revenue	**(196)**	29
Increased (Decreased) revenue	**(570)**	112
Decreased (Increased) provision for credit losses	**(95)**	83
Decreased (Increased) expenses	**(351)**	51
Decreased (Increased) income taxes	**(23)**	(7)
Increased (Decreased) adjusted net income	**(101)**	(15)

Adjusted results in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

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Net Income

Reported net income was $7,754 million, an increase of $2,657 million or 52% from the prior year, and adjusted net income was $8,651 million, an increase of $3,450 million or 66%, reflecting a recovery from the significant adverse impacts of the COVID-19 pandemic on the global economy, our customers and our 2020 financial results. Adjusted results in the current year excluded a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore, and $85 million ($107 million pre-tax) of divestiture-related costs for both transactions, partially offset by an $18 million ($24 million pre-tax) partial reversal of restructuring charges from 2019 related to severance. In addition, adjusted net income in the current and prior years excluded the amortization of acquisition-related intangible assets and acquisition-related integration costs. For further information, refer to the Non-GAAP and Other Financial Measures section.

The increase in net income reflects the impact of lower provisions for credit losses, which were elevated in the prior year due to the impact of theCOVID-19 pandemic, and revenue growth, partially offset by an increase in expenses and the impact of the weaker U.S. dollar. Net income increased in all operating groups, partially offset by a higher net loss in Corporate Services.

Canadian P&C reported net income increased $1,210 million or 60% from the prior year, and adjusted net income increased $1,209 million or 60%, driven by lower provisions for credit losses and strong revenue growth, partially offset by an increase in expenses. U.S. P&C reported net income increased $912 million or 71%, and adjusted net income increased $897 million or 68%, primarily driven by lower provisions for credit losses, strong revenue growth and a reduction in expenses. BMO Wealth Management reported net income increased $378 million or 34%, and adjusted net income increased $368 million or 32%, driven by higher revenue, partially offset by an increase in expenses. BMO Capital Markets reported net income increased $1,053 million or 97%, and adjusted net income increased $1,048 million or 94%, with recoveries of provisions for credit losses and higher revenue, partially offset by an increase in expenses. Corporate Services reported net loss was $1,286 million and adjusted net loss was $462 million, compared with a reported and adjusted net loss of $390 million in the prior year. The higher reported and adjusted net loss reflected an increase in expenses, partially offset by higher revenue, driven by higher securities gains and treasury-related activities, and the impact of a less favourable tax rate in the prior year.

Further discussion is provided in the 2021 Operating Groups Performance Review section.

For further information on non-GAAP amounts, measures and ratios in this Net Income section, refer to the Non-GAAP and Other Financial Measures section.

Revenue

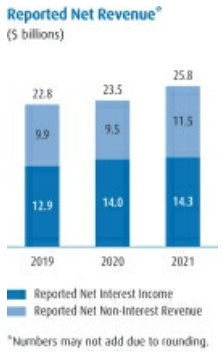
Reported revenue was $27,186 million, an increase of $2,000 million from the prior year, and adjusted revenue was $27,157 million, an increase of $1,971 million, both increasing 8% from the prior year. On a basis that nets insurance claims, commissions and changes in policy benefit liabilities (CCPB) against insurance revenue (net revenue), reported net revenue was $25,787 million, an increase of $2,309 million, and adjusted net revenue was $25,758 million, an increase of $2,280 million, both increasing 10% from the prior year. Adjusted revenue and adjusted net revenue in the current year excluded the $29 million ($22 million after-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore. The impact of the weaker U.S. dollar reduced revenue by 2%.

Revenue increased in BMO Capital Markets due to higher Investment and Corporate Banking revenue and higher Global Markets revenue; in Canadian P&C due to higher net interest income and non-interest revenue; and in BMO Wealth Management primarily due to growth in client assets, including stronger global markets and strong loan and deposit growth, partially offset by lower margins. Revenue decreased in U.S. P&C due to the weaker U.S. dollar, and increased on a source-currency basis due to higher net interest income and non-interest revenue. Corporate Services revenue increased from the prior year, driven by higher securities gains and treasury-related activities.

BMO analyzes revenue at the consolidated level based on GAAP revenue as reported in the consolidated financial statements, and on an adjusted basis. Operating group revenue is presented on a taxable equivalent basis (teb), with revenue and the provision for income taxes increased on tax-exempt securities to an equivalent pre-tax basis. These teb adjustments for 2021 totalled $315 million, and were $335 million in 2020.

Further discussion is provided in the 2021 Operating Groups Performance Review section.

For further information on non-GAAP amounts, measures and ratios, and results presented on a net revenue basis in this Revenue section, refer to the Non-GAAP and Other Financial Measures section.



Net interest income comprises earnings on assets, such as loans and securities, including interest and certain dividend income, less interest expense paid on liabilities, such as deposits.

Net interest margin is the ratio of net interest income to average earning assets, expressed as a percentage or in basis points.

Net non-interest revenue is non-interest revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB).

Average earning assets represents the daily average balance of deposits at central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans over a one-year period.

Taxable equivalent basis (teb) Revenues of operating groups are presented in the MD&A on a taxable equivalent basis (teb). Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent pre-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. This adjustment is offset in Corporate Services.

Revenue

(Canadian $ in millions, except as noted) For the year ended October 31	2021	2020	2019	Change from 2020 (%)
Net interest income	**14,310**	13,971	12,888	**2**
Non-interest revenue	**12,876**	11,215	12,595	**15**
Total revenue	**27,186**	25,186	25,483	**8**
CCPB (1)	**1,399**	1,708	2,709	**(18)**
Revenue, net of CCPB (1)	**25,787**	23,478	22,774	**10**
Adjusted revenue (2) (3)	**27,157**	25,186	25,483	**8**
Adjusted CCPB (1) (2) (3)	**1,399**	1,708	2,684	**(18)**
Adjusted revenue, net of CCPB (1) (2) (3)	**25,758**	23,478	22,799	**10**

(1) Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets caused by movements in interest rates and equity markets. The investments that support policy benefit liabilities are predominantly fixed income assets recorded at fair value, with changes in fair value recorded in insurance revenue in the Consolidated Statement of Income. These fair value changes are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in CCPB. The discussion of revenue on a net of CCPB basis reduces variability in results, which allows for a better discussion of operating results. For additional discussion refer to the Insurance Claims, Commissions and Changes in Policy Benefits section.
(2) Fiscal 2021 reported revenue included a $29 million ($22 million after-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue.
(3) Fiscal 2019 reported revenue included a reinsurance adjustment of $25 million (pre-tax and after-tax) in CCPB for the net impact of major reinsurance claims incurred after the announced wind-down of the reinsurance business. This reinsurance adjustment is recorded in BMO Wealth Management.

Revenue, net of CCPB, and adjusted results in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

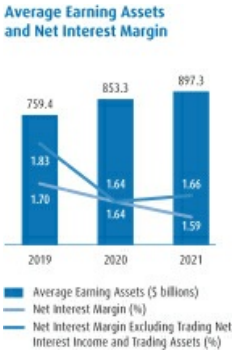
Net Interest Income

Net interest income was $14,310 million, an increase of $339 million or 2% from the prior year. Non-trading net interest income was $12,457 million, an increase of $417 million or 3%, largely due to higher net interest income in Canadian P&C and BMO Wealth Management, primarily reflecting higher balances, and in Corporate Services, partially offset by lower net interest income in BMO Capital Markets. Higher source-currency net interest income in U.S. P&C was more than offset by the impact of the weaker U.S. dollar. Trading-related interest income was $1,853 million, a decrease of $78 million or 4%.

Average earning assets were $897.3 billion, an increase of $44.0 billion or 5% from the prior year, primarily due to higher cash and securities balances and loan growth, partially offset by the impact of the weaker U.S. dollar.

BMO's overall net interest margin of 159 basis points decreased 5 basis points from the prior year, primarily driven by higher liquidity levels and lower trading-related interest income, partially offset by higher net interest margins in our P&C businesses. On a basis that excludes trading-related interest income and earning assets, net interest margin of 166 basis points increased 2 basis points, primarily driven by lower balances of low-yielding assets in BMO Capital Markets and higher net interest margins in our P&C businesses, partially offset by higher liquidity levels.

Table 3 in the Supplemental Information provides further details on net interest income and net interest margin.



Change in Net Interest Income, Average Earning Assets and Net Interest Margin

(Canadian $ in millions, except as noted) For the year ended October 31	Net interest income (teb) (1)		Change	Average earning assets (2)		Change	Net interest margin (in basis points)		
	2021	2020	%	2021	2020	%	2021	2020	Change
Canadian P&C	**6,561**	6,105	**7**	**248,215**	234,953	**6**	**264**	260	**4**
U.S. P&C	**4,268**	4,345	**(2)**	**122,166**	130,190	**(6)**	**349**	334	**15**
Personal and Commercial Banking (P&C)	**10,829**	10,450	**4**	**370,381**	365,143	**1**	**292**	286	**6**
All other operating groups and Corporate Services (3)	**3,481**	3,521	**(1)**	**526,921**	488,193	**8**	**na**	na	**na**
Total reported	**14,310**	13,971	**2**	**897,302**	853,336	**5**	**159**	164	**(5)**
Trading net interest income and earning assets	**1,853**	1,931	**(4)**	**144,865**	121,205	**20**	**na**	na	**na**
Total excluding trading net interest income and earning assets	**12,457**	12,040	**3**	**752,437**	732,131	**3**	**166**	164	**2**
U.S. P&C (US$ in millions)	**3,400**	3,231	**5**	**97,321**	96,810	**1**	**349**	334	**15**

(1) Operating group revenue is presented on a taxable equivalent basis (teb) in net interest income and is non-GAAP. For further information, refer to the Non-GAAP and Other Financial Measures and How BMO Reports Operating Group Results sections.
(2) Average earning assets represents the daily average balance of deposits with central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans, over a one-year period.
(3) For further information on net interest income for these other operating groups and Corporate Services, refer to the Review of Operating Groups' Performance section.

na – not applicable
Certain comparative figures have been reclassified to conform with the current year's presentation.

Non-Interest Revenue

Non-interest revenue, which comprises all revenue other than net interest income, was $12,876 million on a reported basis, an increase of $1,661 million or 15% from the prior year. Adjusted non-interest revenue was $12,847 million, an increase of $1,632 million or 15%, and excluded the $29 million net gain on the sale of our Private Banking business in Hong Kong and Singapore. Reported non-interest revenue, net of CCPB, was $11,477 million, an increase of $1,970 million or 21% from the prior year, and adjusted non-interest revenue, net of CCPB, was $11,448 million, an increase of $1,941 million or 20%.

Non-interest revenue increased across all categories, including higher securities gains, other than trading, underwriting and advisory fee revenue, trading revenue, investment management and custodial fee revenue, mutual fund revenue and lending fee revenue, partially offset by the impact of the weaker U.S. dollar. Trading revenue is discussed in the Trading Revenue section that follows.

Gross insurance revenue decreased from the prior year, primarily due to changes in the fair value of investments, partially offset by higher annuity sales. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets caused by movements in interest rates and equity markets. The investments that support policy benefit liabilities are predominantly fixed income and equity assets recorded at fair value, with changes in fair value recorded in insurance revenue in the Consolidated Statement of Income. The impact of these fair value changes was largely offset by changes in the fair value of policy benefit liabilities, which are reflected in the Insurance Claims, Commissions and Changes in Policy Benefits section.

We generally focus on analyzing revenue net of CCPB, given the extent to which insurance revenue can vary, and given that this variability is largely offset in CCPB.

Table 3 in the Supplemental Information provides further details on revenue and revenue growth.

Non-Interest Revenue

(Canadian $ in millions) For the year ended October 31	**2021**	2020	2019	**Change from 2020 (%)**
Securities commissions and fees	**1,107**	1,036	1,023	**7**
Deposit and payment service charges	**1,243**	1,221	1,204	**2**
Trading revenue	**296**	15	298	**+100**
Lending fees	**1,391**	1,295	1,192	**7**
Card fees	**442**	358	437	**23**
Investment management and custodial fees	**1,982**	1,807	1,747	**10**
Mutual fund revenue	**1,595**	1,417	1,419	**13**
Underwriting and advisory fees	**1,421**	1,070	975	**33**
Securities gains, other than trading	**591**	124	249	**+100**
Foreign exchange, other than trading	**167**	127	166	**31**
Insurance revenue	**1,941**	2,178	3,183	**(11)**
Investments in associates and joint ventures	**248**	161	151	**54**
Other	**452**	406	551	**11**
Total reported	**12,876**	11,215	12,595	**15**
CCPB	**(1,399)**	(1,708)	(2,709)	**(18)**
Reported non-interest revenue, net of CCPB	**11,477**	9,507	9,886	**21**
Impact of divestitures (1)	**(29)**	–	–	**na**
Adjusted non-interest revenue	**12,847**	11,215	12,595	**15**
Reinsurance adjustment (2)	**–**	–	25	**–**
Adjusted CCPB	**(1,399)**	(1,708)	(2,684)	**(18)**
Adjusted non-interest revenue, net of CCPB	**11,448**	9,507	9,911	**20**
Insurance revenue, net of CCPB	**542**	470	474	**15**
Insurance revenue, net of adjusted CCPB	**542**	470	499	**15**

(1) Fiscal 2021 included a $29 million ($22 million after-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue.

(2) Fiscal 2019 reported revenue included a reinsurance adjustment of $25 million (pre-tax and after-tax) in claims, commissions and changes in policy benefit liabilities for the net impact of major reinsurance claims incurred after the announced wind-down of the reinsurance business. This reinsurance adjustment is recorded in BMO Wealth Management.

Reported and adjusted revenue measures, net of CCPB, in this section are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

Trading-Related Revenue

Trading-related revenue is dependent on, among other things, the volume of activities undertaken for clients who enter into transactions with BMO to mitigate their risks or to invest, and market conditions. We earn a spread or profit on the net sum of our client positions by profitably managing, within prescribed limits, the overall risk of our net positions. On a limited basis, we also earn revenue from our principal trading positions.

Interest and non-interest trading-related revenue on a teb basis increased $182 million or 8% to $2,434 million in 2021. Equities trading-related revenue increased $578 million, due to favourable market conditions. The prior year included negative impacts related to equity linked notes-related businesses in the volatile second quarter of 2020. Interest rate trading-related revenue decreased $182 million or 15% and foreign exchange trading-related revenue decreased $58 million or 12%, as the prior year benefitted from higher levels of client activity driven by the reaction of market participants to the COVID-19 pandemic. Commodities trading-related revenue decreased $124 million or 46%, reflecting a decline in client hedging activity in the energy sector. Other trading-related revenue decreased $32 million, primarily due to lower fair value gains associated with hedging exposures on the structural balance sheet in the current year.

The Market Risk section provides more information on trading-related revenue.

Trading-related revenue includes net interest income and non-interest revenue earned from on-balance sheet and off-balance sheet positions undertaken for trading purposes. The management of these positions typically includes marking them to market on a daily basis. Trading-related revenue also includes income (expense) and gains (losses) from both on-balance sheet instruments and interest rate, foreign exchange (including spot positions), equity, commodity and credit contracts. BMO analyzes on a teb basis at the operating group level. Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent before-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. This adjustment is offset in Corporate Services.

Interest and Non-Interest Trading-Related Revenue [1]

(Canadian $ in millions) (taxable equivalent basis) For the year ended October 31	**2021**	2020	2019	**Change from 2020 (%)**
Interest rates	**1,017**	1,199	700	**(15)**
Foreign exchange	**416**	474	401	**(12)**
Equities	**852**	274	526	**+100**
Commodities	**147**	271	145	**(46)**
Other	**2**	34	6	**(94)**
Total (teb)	**2,434**	2,252	1,778	**8**
Teb offset	**285**	306	257	**(7)**
Reported total	**2,149**	1,946	1,521	**10**
Reported as:				
Net interest income	**2,138**	2,237	1,480	**(4)**
Non-interest revenue – trading revenue	**296**	15	298	**+100**
Total (teb)	**2,434**	2,252	1,778	**8**
Teb offset	**285**	306	257	**(7)**
Reported total, net of teb offset	**2,149**	1,946	1,521	**10**

(1) Trading-related revenue is presented on a taxable equivalent basis and is a non-GAAP measure, and is discussed in the Non-GAAP and Other Financial Measures section.

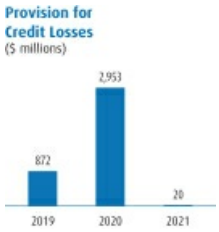
Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Insurance claims, commissions and changes in policy benefit liabilities (CCPB) were $1,399 million in 2021, compared with $1,708 million in the prior year. CCPB decreased, primarily due to changes in the fair value of policy benefit liabilities, partially offset by the impact of higher annuity sales. The changes were largely offset in revenue.

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Total Provision for Credit Losses

The total provision for credit losses (PCL) was $20 million, compared with $2,953 million in the prior year, primarily due to an improving economic outlook and more favourable credit conditions. Total PCL as a percentage of average net loans and acceptances was nil basis points, compared with 63 basis points in the prior year. PCL on impaired loans was $525 million, a decrease of $997 million from the prior year, largely due to lower provisions in our P&C businesses and BMO Capital Markets. PCL on impaired loans as a percentage of average net loans and acceptances was 11 basis points, compared with 33 basis points in the prior year. There was a $505 million recovery of the provision for credit losses on performing loans in the current year, compared with a $1,431 million provision in the prior year. The recovery in the current year largely reflected an improving economic outlook and positive credit migration, partially offset by growth in loan balances.



PCL on impaired loans decreased $294 million in Canadian P&C, reflecting lower commercial and consumer provisions, and $396 million in U.S. P&C, primarily due to lower commercial provisions. In BMO Capital Markets, PCL on impaired loans decreased $299 million from the prior year. All operating groups recorded recoveries of provisions for credit losses on performing loans in the current year, compared with the provisions recorded in the prior year.

Note 4 of the consolidated financial statements provides additional information on PCL, including on a geographic basis. Table 15 in the Supplemental Information provides further segmented PCL information.

For additional information, please refer to the Allowance for Credit Losses section.

Provision for Credit Losses (PCL) is a charge to income that represents an amount deemed adequate by management to fully provide for impairment in a portfolio of loans and acceptances and other credit instruments, given the composition of the portfolio, the probability of default, the economic environment and the allowance for credit losses already established. PCL can comprise both a provision for credit losses on impaired loans and a provision for credit losses on performing loans. For further information, refer to the Credit and Counterparty Risk – Provision for Credit Losses and Allowance for Credit Losses sections and Note 4 of the consolidated financial statements.

Average Net Loans and Acceptances is the daily or monthly average balance of loans and customers' liability under acceptances, net of the allowance for credit losses, over a one-year period.

Provision for Credit Losses by Operating Group

(Canadian $ in millions)	Canadian P&C	U.S. P&C	Total P&C	BMO Wealth Management	BMO Capital Markets	Corporate Services	Total Bank
2021							
Provision for (recovery of) credit losses on impaired loans	**493**	**22**	**515**	**4**	**11**	**(5)**	**525**
Provision for (recovery of) credit losses on performing loans	**(116)**	**(166)**	**(282)**	**(16)**	**(205)**	**(2)**	**(505)**
Total provision for (recovery of) credit losses	**377**	**(144)**	**233**	**(12)**	**(194)**	**(7)**	**20**
2020							
Provision for (recovery of) credit losses on impaired loans	787	418	1,205	4	310	3	1,522
Provision for (recovery of) credit losses on performing loans	623	441	1,064	18	349	–	1,431
Total provision for (recovery of) credit losses	1,410	859	2,269	22	659	3	2,953
2019							
Provision for (recovery of) credit losses on impaired loans	544	160	704	2	52	(7)	751
Provision for (recovery of) credit losses on performing loans	63	37	100	(2)	28	(5)	121
Total provision for (recovery of) credit losses	607	197	804	–	80	(12)	872

Certain comparative figures have been reclassified to conform with the current year's presentation.

Provision for Credit Losses Performance Ratios

	2021	2020	2019
Total PCL-to-average net loans and acceptances (annualized) (%)	**–**	0.63	0.20
PCL on impaired loans to average net loans and acceptances (annualized) (%)	**0.11**	0.33	0.17

Certain comparative figures have been reclassified to conform with the current year's presentation.

Non-Interest Expense

Reported non-interest expense was $15,509 million, an increase of $1,332 million or 9% from the prior year, primarily due to the impact of divestitures, including a $779 million write-down of goodwill related to the sale of our EMEA Asset Management business and $107 million of divestiture-related costs in the current year.

Adjusted non-interest expense was $14,550 million, an increase of $508 million or 4% from the prior year. Adjusted non-interest expense excluded the impact of divestitures in the current year and a $24 million partial reversal of the restructuring charge, as well as the amortization of acquisition-related intangible assets and acquisition-related costs in both the current and prior years. The amortization of acquisition-related intangible assets was $88 million and $121 million in 2021 and 2020, respectively. Acquisition integration costs were $9 million and $14 million in 2021 and 2020, respectively.

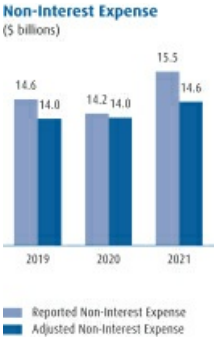
Reported and adjusted non-interest expense increased, due to higher performance-based compensation, computer and equipment costs and professional fees, partially offset by the benefits of a continued disciplined approach to expense management and the impact of the weaker U.S. dollar, which reduced expenses by 3%.

The dollar and percentage changes in expense by category are outlined in the Non-Interest Expense and Adjusted Non-Interest Expense tables below. Table 4 in the Supplemental Information provides more detail on expenses.

Performance-based compensation increased $520 million or 20% on a reported basis, and $505 million or 19% on an adjusted basis, reflecting improved business performance. Other employee compensation, which includes salaries, benefits and severance, decreased $142 million or 3% on a reported basis, and $165 million or 3% on an adjusted basis, primarily due to the impact of the weaker U.S. dollar.

Premises and equipment costs increased $194 million or 6% on a reported basis, and $176 million or 5% on an adjusted basis, primarily due to higher technology and real estate costs. Amortization of intangible assets on a reported basis increased $14 million or 2%, and increased $37 million or 7% on an adjusted basis, reflecting an increase in software amortization. Other expenses increased $746 million or 31% on a reported basis, reflecting the impact of divestitures, and decreased $45 million or 2% on an adjusted basis.

For further information on non-GAAP amounts, measures and ratios in this Non-Interest Expense section, refer to the Non-GAAP and Other Financial Measures section.



Non-Interest Expense

(Canadian $ in millions, on a pre-tax basis) For the year ended October 31	2021	2020	2019	Change from 2020 (%)
Performance-based compensation	**3,152**	2,632	2,610	**20**
Acquisition integration costs	**(4)**	(3)	–	**33**
Impact of divestitures	**(14)**	–	–	**na**
Restructuring costs	**–**	–	(3)	**na**
Adjusted performance-based compensation	**3,134**	2,629	2,607	**19**
Other employee compensation	**5,170**	5,312	5,813	**(3)**
Acquisition integration costs	**(5)**	(6)	(13)	**(17)**
Impact of divestitures	**(48)**	–	–	**na**
Restructuring costs	**24**	–	(439)	**na**
Adjusted other employee compensation	**5,141**	5,306	5,361	**(3)**
Premises and equipment	**3,396**	3,202	2,988	**6**
Impact of divestitures	**(18)**	–	–	**na**
Restructuring costs	**–**	–	(41)	**na**
Adjusted premises and equipment	**3,378**	3,202	2,947	**5**
Amortization of intangible assets	**634**	620	554	**2**
Amortization of acquisition-related intangible assets	**(88)**	(121)	(128)	**(27)**
Impact of divestitures	**(10)**	–	–	**na**
Adjusted amortization of intangible assets	**536**	499	426	**7**
Other	**3,157**	2,411	2,665	**31**
Acquisition integration costs	**–**	(5)	–	**+100**
Impact of divestitures	**(796)**	–	–	**na**
Restructuring costs	**–**	–	(1)	**na**
Adjusted other	**2,361**	2,406	2,664	**(2)**
Total reported non-interest expense	**15,509**	14,177	14,630	**9**
Total adjusted non-interest expense	**14,550**	14,042	14,005	**4**

Adjusted results in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

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Provision for Income Taxes and Other Taxes

(Canadian $ in millions, except as noted) For the year ended October 31	2021	2020	2019
Payroll levies	**355**	362	354
Property taxes	**36**	42	37
Provincial capital taxes	**36**	33	35
Business taxes	**10**	9	9
Harmonized sales tax, GST, VAT and other sales taxes	**382**	397	384
Sundry taxes	**1**	1	1
Total government levies other than income taxes (other taxes) (1)	**820**	844	820
Provision for income taxes	**2,504**	1,251	1,514
Provision for income taxes and other taxes	**3,324**	2,095	2,334
Provision for income taxes and other taxes as a % of income before provision for income taxes and other taxes	**30.0**	29.1	28.8
Effective tax rate (%)	**24.4**	19.7	20.8
Adjusted effective tax rate (%)	**22.7**	19.8	21.1

(1) Other taxes are included in various non-interest expense categories.
Provision for income taxes and other taxes and the adjusted effective tax rate in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

The provision for income taxes and other taxes was $3,324 million in the current year. Of this amount, $2,060 million was incurred in Canada, with $1,450 million included in the provision for income taxes, while the remaining $610 million was recorded in total government levies other than income taxes (other taxes). The increase from $2,095 million in the prior year primarily reflected a higher provision for income taxes.

The provision for income taxes presented in the Consolidated Statement of Income is based upon transactions recorded in income, regardless of when such transactions are subject to taxation by tax authorities, with the exception of the repatriation of retained earnings from subsidiaries, as outlined in Note 22 of the consolidated financial statements.

Management assesses BMO's consolidated results and the associated provision for income taxes on a GAAP basis. We assess the performance of our operating groups and associated income taxes on a taxable equivalent basis, and we report accordingly.

The provision for income taxes was $2,504 million, compared with $1,251 million in the prior year. The effective tax rate was 24.4%, compared with 19.7% in the prior year. The adjusted provision for income taxes was $2,537 million, compared with $1,282 million in the prior year. The adjusted effective tax rate (1) was 22.7%, compared with 19.8% in the prior year. The effective tax rate and adjusted effective tax rate were lower in the prior year primarily due to earnings mix, including the impact of lower pre-tax income in the prior year. The effective tax rate in the current year is higher than the adjusted effective tax rate due to the write-down of goodwill related to the sale of our EMEA Asset Management business in the current year.

BMO partially hedges, for accounting purposes, the foreign exchange risk arising from investments in foreign operations by funding the investments in the corresponding foreign currency. A gain or loss on hedging activities and an unrealized gain or loss on translation of foreign operations are charged or credited to other comprehensive income. For income tax purposes, a gain or loss on hedging activities results in an income tax charge or credit in the current period that is charged or credited to other comprehensive income, while the associated unrealized gain or loss on investments in foreign operations does not incur income taxes until the investments are liquidated. The income tax charge/benefit arising from a hedging gain/loss is a function of the fluctuations in exchange rates from period to period. Hedging of investments in foreign operations has given rise to an income tax expense in other comprehensive income of $180 million in the current year, compared with a recovery of $35 million in the prior year. Refer to Note 22 of the consolidated financial statements for further details.

Legislative changes and changes in tax policy, including their interpretation by tax authorities and the courts, may impact our earnings. Refer to the discussion in the Critical Accounting Estimates section for additional details. In the table above we disclose provision for income taxes and other taxes as a percentage of income before the provision for income taxes and other taxes, which is a non-GAAP financial ratio, to reflect the full impact of all government levies and taxes as a percentage of our income.

For further information on non-GAAP amounts, measures and ratios in this Provision for Income Taxes and Other Taxes section, refer to the Non-GAAP and Other Financial Measures section.

(1) The adjusted effective tax rate is computed using adjusted net income and adjusted provision for income taxes rather than reported net income in the determination of income subject to income tax.

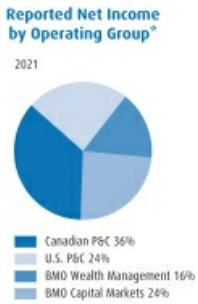
2021 Operating Groups Performance Review

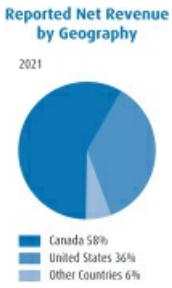
Summary

This section includes an analysis of the financial results of BMO's operating groups and descriptions of their operating segments, businesses, strategies, challenges, achievements and outlooks.

	BMO Financial Group			
Operating Groups	**Personal and Commercial (P&C) Banking**		**BMO Wealth Management**	**BMO Capital Markets**
Operating Segments	**Canadian P&C**	**U.S. P&C**		
Lines of Business	• Personal Banking • Commercial Banking	• Personal Banking • Commercial Banking	• BMO Private Wealth • BMO InvestorLine • BMO Wealth Management U.S. • BMO Global Asset Management • BMO Insurance	• Investment and Corporate Banking • Global Markets
	Corporate Services, including Technology and Operations			

BMO's business mix is well diversified by operating segment and by geography.





* Percentages determined excluding results in Corporate Services.
Revenue, net of CCPB, is on a non-GAAP basis and is discussed in the Non-GAAP and Other Financial Measures section.

How BMO Reports Operating Group Results

BMO reports financial results for its three operating groups, one of which comprises two operating segments, all of which are supported by Corporate Units and Technology and Operations within Corporate Services. Operating group results include treasury-related allocations in revenue, non-interest expense allocations from Corporate Units and Technology and Operations (T&O) and allocated capital.

BMO employs funds transfer pricing and liquidity transfer pricing between Treasury and the operating groups to assign the appropriate cost and credit to funds for the appropriate pricing of loans and deposits, and to help assess the profitability performance of each line of business. These practices also capture the cost of holding supplemental liquid assets to meet contingent liquidity requirements and facilitate the management of interest rate risk and liquidity risk within our risk appetite framework and regulatory requirements. We review our transfer pricing methodologies at least annually, to align with our interest rate, liquidity and funding risk management practices.

The costs of Corporate Units and Technology and Operations services are largely allocated to the four operating segments, with any remaining amounts retained in Corporate Services. Costs directly incurred to support a specific operating group are generally allocated to that operating group. Other costs that are not directly attributable to a specific operating group are allocated across the operating groups, reasonably reflective of the level of support provided to each operating group. Cost allocation methodologies are reviewed annually.

Capital is allocated to the operating segments based on the amount of regulatory capital required to support business activities. Unallocated capital is reported in Corporate Services. Capital allocation methodologies are reviewed annually.

Periodically, certain lines of business and units within our organizational structure are realigned to support our strategic priorities. In addition, allocations of revenue, provisions for credit losses, expenses and capital are updated periodically to better align with current experience.

We analyze revenue at the consolidated level based on GAAP revenue as reported in the audited annual consolidated financial statements, rather than on a taxable equivalent basis (teb), which is consistent with our Canadian banking peer group. Like many banks, BMO analyzes revenue on a teb basis at the operating group level. Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent pre-tax basis in order to facilitate comparisons of income between taxable and tax-exempt sources. The offset to the group teb adjustments is reflected in Corporate Services revenue and provision for income taxes.

Personal and Commercial Banking [1]

(Canadian $ in millions, except as noted)	Canadian P&C			U.S. P&C			Total P&C		
As at or for the year ended October 31	**2021**	2020	2019	**2021**	2020	2019	**2021**	2020	2019
Net interest income (teb) [2]	**6,561**	6,105	5,885	**4,268**	4,345	4,216	**10,829**	10,450	10,101
Non-interest revenue	**2,225**	1,930	2,099	**1,243**	1,186	1,162	**3,468**	3,116	3,261
Total revenue (teb)	**8,786**	8,035	7,984	**5,511**	5,531	5,378	**14,297**	13,566	13,362
Provision for credit losses on impaired loans	**493**	787	544	**22**	418	160	**515**	1,205	704
Provision for (recovery of) credit losses on performing loans	**(116)**	623	63	**(166)**	441	37	**(282)**	1,064	100
Total provision for (recovery of) credit losses	**377**	1,410	607	**(144)**	859	197	**233**	2,269	804
Non-interest expense	**4,037**	3,892	3,836	**2,797**	3,075	3,136	**6,834**	6,967	6,972
Income before income taxes	**4,372**	2,733	3,541	**2,858**	1,597	2,045	**7,230**	4,330	5,586
Provision for income taxes (teb)	**1,135**	706	917	**669**	320	434	**1,804**	1,026	1,351
Reported net income	**3,237**	2,027	2,624	**2,189**	1,277	1,611	**5,426**	3,304	4,235
Amortization of acquisition-related intangible assets [3]	**1**	2	2	**24**	39	43	**25**	41	45
Adjusted net income	**3,238**	2,029	2,626	**2,213**	1,316	1,654	**5,451**	3,345	4,280

(1) Adjusted results and teb amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Taxable equivalent basis amounts of $24 million in fiscal 2021, $28 million in fiscal 2020 and $34 million in fiscal 2019 are recorded in net interest income.
(3) Amortization of acquisition-related intangible assets pre-tax amounts of $35 million in 2021, $55 million in 2020 and $59 million in 2019 are recorded in non-interest expense.

The Personal and Commercial Banking (P&C) operating group comprises our two retail and commercial banking operating segments, Canadian Personal and Commercial Banking (Canadian P&C) and U.S. Personal and Commercial Banking (U.S. P&C). The combined P&C banking business net income was $5,426 million, an increase of $2,122 million or 64% from the prior year. Adjusted net income, which excludes the amortization of acquisition-related intangible assets, was $5,451 million, an increase of $2,106 million or 63% from the prior year. Increases in reported and adjusted net income were primarily driven by lower provisions for credit losses, revenue growth and a reduction in expenses, partially offset by the impact of the weaker U.S. dollar. These operating segments are reviewed separately in the sections that follow.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Canadian Personal and Commercial Banking

Canadian Personal and Commercial Banking provides financial products and services to eight million customers. Personal Banking helps customers make real financial progress through a network of almost 900 branches, contact centres, digital banking platforms and more than 3,300 automated teller machines. Commercial Banking serves clients across Canada, and our commercial bankers are trusted advisors and partners to their clients, offering sector and industry expertise, local presence and a comprehensive range of commercial products and services.

Lines of Business

Personal Banking provides customers with a wide range of products and services, including chequing and savings accounts, credit cards, mortgages, personal loans, small business lending and everyday financial and investment advice, with an overall focus on providing customers with an exceptional experience in every interaction and helping them make real financial progress.

Commercial Banking provides clients with a wide range of commercial products and services, including multiple financing options and treasury and payment solutions, as well as risk management products. Commercial bankers partner with clients to anticipate their financial needs, and share expertise and knowledge to help them manage and grow their businesses.

Strategy and Key Priorities

2021 Priorities and Achievements

Key Priority: Continue to improve customer loyalty, deepen primary relationships and support customers in the new operating environment

Achievements

- Continued to maintain strong customer loyalty in Personal Banking and leading customer loyalty in Commercial Banking, as measured by Net Promoter Score
- Supported customers experiencing financial hardship since the onset of the COVID-19 pandemic through multiple programs
  - Assisted more than 82,000 small businesses with access to approximately $4.5 billion in loans through the Canada Emergency Business Account (CEBA) program
  - Assisted nearly 1,500 clients with access to approximately $500 million in non-revolving loans through the Highly Affected Sectors Credit Availability Program (HASCAP), in collaboration with the Business Development Bank of Canada
  - Partnered with Export Development Canada to launch the Trade Expansion Lending Program (TELP), which assists export-oriented small and medium-sized businesses with faster access to working capital so that they can expand outside of Canada
- Made BMO's employee Wellness Services program available to Canadian business owners and entrepreneurs, offering services and resources that support mental, physical, social and financial health, at no additional cost

Key Priority: In Personal Banking, drive customer acquisition, build share of wallet, enhance digital capabilities and deliver a leading customer experience

Achievements

- Gained market share in key focus areas, including personal loans, retail deposits and credit cards
- Introduced a new tailored Small Business Banking bundle as part of our Canadian Defence Community Banking Program, aimed at supporting entrepreneurs from the Canadian Defence Community from start-up to succession planning
- Attracted new customers to BMO with the launch of BMO eclipse Visa Infinite™ and Visa Infinite Privilege™ credit cards, designed to meet the everyday lifestyle needs of Canadians, offering greater earning potential and more flexible rewards
- Introduced BMO Family Bundle™, a unique offering in the Canadian market, allowing customers and their family members to save on fees on their Canadian-dollar or U.S.-dollar chequing accounts
- Strengthened our digital sales and service capabilities, with more than a third of core banking products now purchased and delivered digitally, and more than 90% of service transactions completed through self-serve channels, enabling employees to focus on providing leading advisory services
- Introduced an Automated Digital Enrolment solution to help customers enrol quickly and seamlessly for commonly used mobile banking features, a first for a major Canadian financial institution. This new solution was enhanced with the launch of Selfie ID, which enables a simple digital onboarding experience
- Launched BMO CashTrack™ Insights, an artificial intelligence-driven capability that to date has offered more than 180,000 insights to customers through our mobile banking app, helping them avoid cash shortfalls or overdraft fees and make real financial progress

Key Priority: In Commercial Banking, target opportunities for growth and diversification across key sectors and businesses, invest in digital and payment capabilities and continue to leverage cross-bank collaboration

Achievements

- Named Best Commercial Bank in Canada for the seventh consecutive year by *World Finance* magazine at its 2021 Banking Awards, in recognition of our strong regional and industry focus, as well as our commitment to building customer relationships and providing innovative solutions
- Co-led the first labelled Green Loan in Canada to support the construction of a new 100% recycled containerboard facility in Ontario
- Continued to enhance our industry-leading Business Banking Xpress™ (BBX) platform, which has facilitated $1.8 billion in lending authorizations, while building out multi-journey functionality to provide solutions to business owners quickly, in a single intuitive experience
- Launched a new Business Property Finance group to build scale and market presence rapidly in this sector
- Launched the first commercial real estate synthetic securitization offered by a Canadian bank
- Continued to advance payments modernization by deploying Lynx™, in collaboration with Payments Canada, enabling faster, simpler data-rich transactions
- Fully integrated our North American wire transfer platform, with 95% of payments processed without human intervention, resulting in higher speed, lower risk of error and a better experience for customers and employees

Key Priority: Drive efficiencies by simplifying and streamlining operations and investing in digital capabilities, while activating and driving an inclusive, high-performance culture

Achievements

- Recognized for digital innovation with the 2021 Celent Model Bank Award for financial wellness; and recognized as a category winner by BAI Canada at its 2020 Global Innovation Awards for BMO CashTrack™
- Ranked #1 by Insider Intelligence in its inaugural mobile banking ratings for digital money management, security and alerts, and in recognition of the positive effects of our digital-first approach on our customers' banking experience
- Significantly increased the capacity of our front-line branch employees by transforming the cash ecosystem and eliminating, simplifying or centralizing key administrative activities
- Continued to grow our advice-based roles, strengthening our ability to engage with customers on the financial issues that are important to them

2022 Focus

- Build on our strong franchise to drive growth and customer loyalty by continuing to invest in differentiating capabilities and delivering enhanced client experiences
  - In Personal Banking, drive top-tier customer acquisition, build leading share of wallet, and enhance the digital experience to help customers make real financial progress
  - In Commercial Banking, strengthen core market presence, accelerate growth in key sectors and continue to build share of wallet with strengthened digital capabilities
- Drive efficiencies by simplifying and streamlining operations, investing in digital capabilities and through cross-bank collaboration
- Foster an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

Canadian P&C [1]

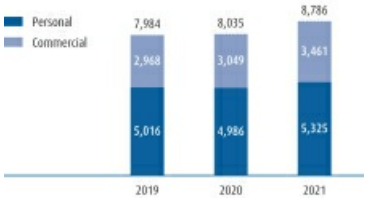
(Canadian $ in millions, except as noted)

As at or for the year ended October 31	2021	2020	2019
Net interest income	**6,561**	6,105	5,885
Non-interest revenue	**2,225**	1,930	2,099
Total revenue	**8,786**	8,035	7,984
Provision for credit losses on impaired loans	**493**	787	544
Provision for (recovery of) credit losses on performing loans	**(116)**	623	63
Total provision for credit losses	**377**	1,410	607
Non-interest expense	**4,037**	3,892	3,836
Income before income taxes	**4,372**	2,733	3,541
Provision for income taxes	**1,135**	706	917
Reported net income	**3,237**	2,027	2,624
Amortization of acquisition-related intangible assets [2]	**1**	2	2
Adjusted net income	**3,238**	2,029	2,626
Adjusted non-interest expense	**4,035**	3,890	3,834
Key Performance Metrics and Drivers			
Personal revenue	**5,325**	4,986	5,016
Commercial revenue	**3,461**	3,049	2,968
Net income growth (%)	**59.7**	(22.7)	2.8
Revenue growth (%)	**9.4**	0.6	5.2
Non-interest expense growth (%)	**3.7**	1.4	4.1
Adjusted non-interest expense growth (%)	**3.7**	1.5	4.1
Return on equity (%) [3]	**28.7**	18.1	27.3
Adjusted return on equity (%) [3]	**28.7**	18.1	27.3
Operating leverage (%)	**5.7**	(0.8)	1.1
Adjusted operating leverage (%)	**5.7**	(0.9)	1.1
Efficiency ratio (%)	**45.9**	48.4	48.1
Net interest margin on average earning assets (%)	**2.64**	2.60	2.65
Average earning assets	**248,215**	234,953	222,260
Average gross loans and acceptances	**261,869**	250,223	236,889
Average net loans and acceptances	**260,359**	248,972	236,000
Average deposits	**225,555**	204,942	175,125
Full-time equivalent employees	**14,697**	13,701	14,638

(1) Adjusted results and ratios in this table arenon-GAAP amounts or ratios and are discussed in theNon-GAAP and Other Financial Measures section.
(2) Amortization of acquisition-related intangible assets pre-tax amounts of $2 million in each of fiscal 2021, fiscal 2020 and fiscal 2019 are recorded in non-interest expense.
(3) Return on equity is based on allocated capital. For further information, refer to the Non-GAAP and Other Financial Measures section.

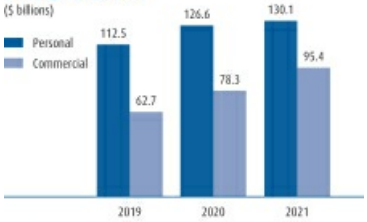
Revenue by Line of Business

($ millions)



Average Deposits*

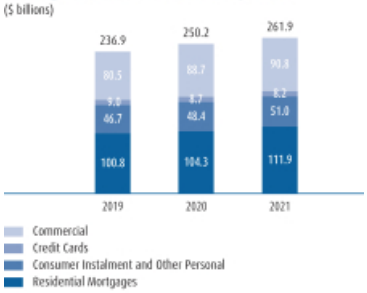
($ billions)



*Numbers may not add due to rounding.

Average Gross Loans and Acceptances*

($ billions)



*Numbers may not add due to rounding.

Financial Review

Canadian P&C reported net income was $3,237 million, an increase of $1,210 million or 60% from the prior year, driven by lower provisions for credit losses compared with elevated levels in the prior year and strong revenue growth, partially offset by an increase in expenses.

Total revenue was $8,786 million, an increase of $751 million or 9% from the prior year. Net interest income increased $456 million or 7%, due to higher balances and higher loan margins, partially offset by lower deposit margins. Non-interest revenue increased $295 million or 15%, with higher revenue across most categories, including higher gains on investments in our commercial business and higher card-related revenue. Personal revenue increased $339 million or 7% from the prior year and commercial revenue increased $412 million or 14%, both due to higher net interest income and higher non-interest revenue.

Net interest margin of 2.64% increased 4 basis points, primarily driven by higher loan margins and deposits growing faster than loans, partially offset by lower deposit margins that reflect the impact of the lower interest rate environment.

Total provision for credit losses was $377 million, a decrease of $1,033 million from the prior year. The provision for credit losses on impaired loans was $493 million, a decrease of $294 million due to lower commercial and consumer provisions. There was a $116 million recovery of the provision for credit losses on performing loans in the current year, compared with a $623 million provision in the prior year.

Reported non-interest expense was $4,037 million, an increase of $145 million or 4% from the prior year, reflecting investments in the business, including employee-related costs, as well as technology and marketing costs.

Average gross loans and acceptances increased $11.6 billion or 5% from the prior year to $261.9 billion. Personal loan balances increased 7% and commercial loan balances increased 2%, while credit card balances decreased 6%. Average deposits increased $20.6 billion or 10% to $225.6 billion, reflecting higher levels of liquidity retained by customers, as well as strong customer acquisition. Personal deposits increased 3%, with strong growth in chequing and savings account deposits, partially offset by a decline in term deposits. Commercial deposits increased 22%.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Business Environment and Outlook

Canadian P&C recorded strong results in fiscal 2021, demonstrating resilience during the pandemic and an ability to adapt quickly as the economy recovers. Our focus on supporting our customers in times of need, delivering exceptional customer service, leveraging digital capabilities by investing in new technologies, and diversifying our customer base are all key to successfully delivering on our strategy.

Canadian banking customers continued to feel the effects of the COVID-19 pandemic, with ongoing lockdowns in the first half of the year and the extension of government support programs intended to ease financial hardship. We continued to support our customers as the Canadian economy began to recover in fiscal 2021, driven by sharp increases in vaccination rates and the relaxation of public health restrictions. Deposits have continued to grow despite rising levels of customer spending, and unsecured consumer and business borrowing volumes began to grow through the year, reflected in improved loan growth across our diverse portfolio of credit products. The housing market has experienced elevated activity, resulting in strong mortgage growth, further supported by investments in our sales force. The economic recovery is expected to continue in fiscal 2022, notwithstanding the ongoing uncertainty surrounding the course of the COVID-19 pandemic and the emergence of variants, with rising levels of consumer spending and business investment supporting further growth in our personal and commercial businesses. Housing market activity is expected to moderate but remain robust, while supply-chain disruptions, labour shortages and higher inflation rates continue to generate headwinds for the industry. Interest rates are expected to remain low in the near term, which could put modest pressure on margins, before rising in the medium term and supporting margin improvement.

The Canadian financial services landscape remains highly competitive, with traditional and non-traditional competitors offering a wide range of banking products and services across physical and digital channels. Canadian P&C is well-positioned to compete in this rapidly-evolving landscape. With strong market share for our personal and commercial products and services, we continue to focus on building best-in-class customer loyalty by enhancing the customer experience with innovative products, services and digital solutions, while also improving efficiency.

The Canadian economic environment in fiscal 2021 and the outlook for fiscal 2022 are discussed in more detail in the Economic Developments and Outlook section.

Caution

This Canadian Personal and Commercial Banking section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

U.S. Personal and Commercial Banking

U.S. Personal and Commercial Banking serves more than two million customers by providing a banking experience with a human touch, while delivering a broad range of financial products and services. U.S. Personal Banking serves customers seamlessly across an extensive network of more than 520 branches, dedicated contact centres, digital banking platforms, and nationwide access to more than 40,000 automated teller machines. U.S. Commercial Banking serves clients across the United States, and our commercial bankers are trusted advisors and partners to their clients, offering sector and industry expertise, local presence and a comprehensive range of commercial products and services.

Lines of Business

Personal Banking offers a variety of products and services, including deposits, home lending, consumer credit, small business lending, credit cards and other banking services, with an overall focus on providing customers with an exceptional experience in every interaction and helping them make real financial progress.

Commercial Banking provides clients with a wide range of commercial products and services, including multiple financing options and treasury and payment solutions, as well as risk management products. Commercial bankers partner with clients to anticipate their financial needs, and share expertise and knowledge to help them manage and grow their businesses.

Strategy and Key Priorities

2021 Priorities and Achievements

Key Priority: Continue to improve customer loyalty, deepen primary relationships and support customers in the new operating environment

Achievements

- Continued to strengthen customer loyalty in Personal Banking and maintained best-in-class customer loyalty in Commercial Banking, as measured by Net Promoter Score
- Supported customers experiencing financial hardship since the onset of the COVID-19 pandemic, and provided a total of US$6.5 billion in funding for more than 36,000 businesses through the SBA Paycheck Protection Program
- Reinforced our second-place ranking in market share for deposits in the core Chicago and Milwaukee markets, with a top-three position across our Midwest footprint
- Recognized on *Forbes* magazine's World's Best Banks 2021 list, based on a survey of consumers on key attributes, including trust, fees, digital services and financial advice
- Continued our partnership with 1871, a Chicago-based fintech private business incubator, in the WMN•FINtech program for a second year, focusing on mentoring women-led start-ups and reflecting our commitment to support an entrepreneurial innovation ecosystem
- Rated Outstanding by the Office of the Comptroller of the Currency on *Community Reinvestment Act* performance, recognizing our commitment to help support low- and moderate-income communities
- Deployed more than US$2 billion in loans and investments as part of BMO EMpower™, a five-year US$5 billion commitment to address key barriers faced by minority businesses and communities in the United States

Key Priority: In Personal Banking, continue to drive new customer acquisition and deposit growth, build a flagship franchise in Small Business Banking and increase digital engagement

Achievements

- Delivered strong core deposit growth, with 25% of transactions conducted through digital channels, supported by a robust product offering and pricing optimization
- Continued to enhance our Business Banking Xpress™ (BBX) platform with more than 14,000 deposit and credit accounts opened across branch and digital channels since its launch
- Launched myFinancial Compass™, a guided conversation tool that has seamlessly supported more than 275,000 advice-based conversations with high levels of customer satisfaction
- BMO Harris Smart Money™ account awarded Bank On™ certification by the Cities for Financial Empowerment Fund, recognizing it as a safe and affordable banking service for financially underserved customers
- Continued to increase digital engagement with customers, with the adoption rate rising by more than 300 basis points year-over-year and more than 75% of service transactions conducted through self-serve channels
- Introduced Savings Builder™, a rewards-based program for consumers and small businesses to help them build strong and consistent savings habits, with more than 90,000 new accounts opened to date
- Supported the removal of systemic barriers for small businesses, and empowered communities by introducing Black and Latinx and Women in Business programs

Key Priority: In Commercial Banking, strengthen core market presence and continue to build share of wallet, strengthen digital capabilities and continue to leverage cross-bank collaboration

Achievements

- Expanded our national presence with the opening of new offices in Florida and Colorado, and continued to grow in Texas, Georgia and other new markets
- Enhanced our offerings in high-value verticals such as healthcare by introducing asset-based lending and launching a multi-specialty Healthcare Council
- Continued to strengthen cross-border capabilities in order to improve the customer experience through technology platform changes related to wire transfers, receivables and billing processes
- Migrated our Transportation Finance business to Amazon Web Services (AWS), executing on our digital first strategy and our commitment to unlocking the power of machine learning to digitize and humanize the employee and customer experience

Key Priority: Drive efficiencies by simplifying and streamlining operations and investing in digital capabilities, while activating and driving an inclusive, high-performance culture

Achievements

- Expanded our relationship with financial technology leader FIS in a major multi-year modernization program that accelerates mobile digital solutions, supporting continued growth across our U.S. market
- Partnered with Lively, Inc. to introduce a new Health Savings Account experience for our customers, offering multiple investment options and providing financial tools that address rising healthcare costs
- Optimized our sales and service model to leverage cross-channel capacity across branches and contact centres
- Named one of the Best Places to Work for Disability Inclusion for the sixth consecutive year, achieving a maximum score of 100 on the Disability Equality Index
- Recognized by *Forbes* magazine as one of the Best Employers for Diversity for the third consecutive year, based on an independent survey of more than 50,000 U.S.-based employees

2022 Focus

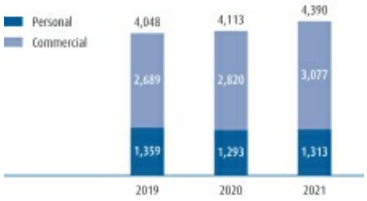
- Build on our strong franchise to drive growth and customer loyalty by continuing to invest in differentiating capabilities and delivering enhanced client experiences
  - In Personal Banking, continue to drive new customer acquisition, increase digital engagement, and help customers make real financial progress
  - In Commercial Banking, strengthen core market presence, drive growth in expansion markets and continue to build share of wallet with strengthened digital capabilities
- Drive efficiencies by simplifying and streamlining operations, investing in digital capabilities and through cross-bank collaboration
- Foster an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

U.S. P&C [1]

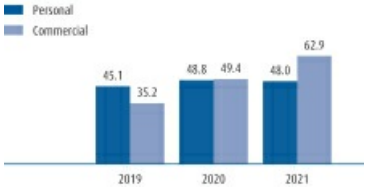
(Canadian $ in millions, except as noted) As at or for the year ended October 31	2021	2020	2019
Net interest income (teb) (2)	**4,268**	4,345	4,216
Non-interest revenue	**1,243**	1,186	1,162
Total revenue (teb)	**5,511**	5,531	5,378
Provision for credit losses on impaired loans	**22**	418	160
Provision for (recovery of) credit losses on performing loans	**(166)**	441	37
Total provision for (recovery of) credit losses	**(144)**	859	197
Non-interest expense	**2,797**	3,075	3,136
Income before income taxes	**2,858**	1,597	2,045
Provision for income taxes (teb)	**669**	320	434
Reported net income	**2,189**	1,277	1,611
Amortization of acquisition-related intangible assets (3)	**24**	39	43
Adjusted net income	**2,213**	1,316	1,654
Adjusted non-interest expense	**2,764**	3,022	3,079
Average earning assets	**122,166**	130,190	119,640
Average gross loans and acceptances	**115,025**	123,002	112,904
Average net loans and acceptances	**116,039**	123,953	113,620
Average deposits	**139,197**	132,041	106,733
(US$ in millions, except as noted)			
Net interest income (teb) (4)	**3,400**	3,231	3,173
Non-interest revenue	**990**	882	875
Total revenue (teb)	**4,390**	4,113	4,048
Provision for credit losses on impaired loans	**15**	310	121
Provision for (recovery of) credit losses on performing loans	**(132)**	328	28
Total provision for (recovery of) credit losses	**(117)**	638	149
Non-interest expense	**2,229**	2,287	2,360
Income before income taxes	**2,278**	1,188	1,539
Provision for income taxes (teb)	**534**	237	327
Reported net income	**1,744**	951	1,212
Amortization of acquisition-related intangible assets (5)	**19**	30	32
Adjusted net income	**1,763**	981	1,244
Adjusted non-interest expense	**2,203**	2,248	2,317
Key Performance Metrics and Drivers (US$ basis)			
Personal revenue	**1,313**	1,293	1,359
Commercial revenue	**3,077**	2,820	2,689
Net income growth (%)	**83.5**	(21.6)	11.7
Adjusted net income growth (%)	**80.0**	(21.2)	11.1
Revenue growth (%)	**6.7**	1.6	5.6
Non-interest expense growth (%)	**(2.5)**	(3.1)	2.6
Adjusted non-interest expense growth (%)	**(2.0)**	(3.0)	2.8
Return on equity (%) (6)	**15.9**	8.3	11.0
Adjusted return on equity (%) (6)	**16.1**	8.5	11.3
Operating leverage (teb) (%)	**9.2**	4.7	3.0
Adjusted operating leverage (teb) (%)	**8.7**	4.6	2.8
Efficiency ratio (teb) (%)	**50.8**	55.6	58.3
Adjusted efficiency ratio (teb) (%)	**50.2**	54.6	57.3
Net interest margin on average earning assets (teb) (%)	**3.49**	3.34	3.53
Average earning assets	**97,321**	96,810	90,035
Average gross loans and acceptances	**92,439**	92,170	85,505
Average net loans and acceptances	**91,631**	91,462	84,966
Average deposits	**110,910**	98,203	80,316
Full-time equivalent employees	**6,449**	6,388	6,831

(1) Adjusted results and ratios, teb amounts and U.S. dollar amounts and ratios in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Taxable equivalent basis amounts of $24 million in fiscal 2021, $28 million in fiscal 2020 and $34 million in fiscal 2019 are recorded in net interest income.
(3) Amortization of acquisition-related intangible assets pre-tax amounts of $33 million in 2021, $53 million in 2020 and $57 million in 2019 are recorded in non-interest expense.
(4) Taxable equivalent basis amounts of US$25 million in fiscal 2021, US$20 million in fiscal 2020 and US$25 million in fiscal 2019 are recorded in net interest income.
(5) Amortization of acquisition-related intangible assets pre-tax amounts of US$26 million in 2021, US$39 million in 2020 and US$43 million in 2019 are recorded in non-interest expense.
(6) Return on equity is based on allocated capital. For further information, refer to theNon-GAAP and Other Financial Measures section.

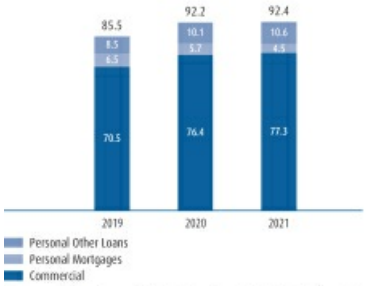
Revenue by Line of Business
(US$ millions)



Average Deposits
(US$ billions)



Average Gross Loans and Acceptances*
(US$ billions)



*Personal Other Loans includes Business Banking, Indirect Auto, Credit Cards, Home Equity, Non-Strategic and other personal loans.

Financial Review

U.S. P&C reported net income was $2,189 million, an increase of $912 million or 71% from the prior year. The impact of the weaker U.S. dollar reduced net income growth by 12%, revenue growth by 7% and expense growth by 6%. U.S. P&C performance and metrics are presented and discussed on a U.S. dollar basis, which management views as useful in assessing the underlying performance due to the variability caused by changes in the U.S. dollar. All amounts in the remainder of this section are on a U.S. dollar basis.

Reported net income was $1,744 million, an increase of $793 million or 84% from the prior year, primarily driven by lower provisions for credit losses compared with elevated levels in the prior year, strong revenue growth and reduced expenses.

Total revenue was $4,390 million, an increase of $277 million or 7% from the prior year. Net interest income increased $169 million or 5% due to higher loan margins, growth in deposits and accelerated Paycheck Protection Program (PPP) revenue resulting from loan forgiveness, partially offset by lower deposit product margins. The PPP was a U.S. government relief program implemented in fiscal 2020 to reduce the financial hardship caused by the COVID-19 pandemic. Non-interest revenue increased $108 million or 12%, with higher revenue across most categories, primarily reflecting higher commercial lending-related fee revenue, advisory fee revenue and deposit fee revenue. Commercial revenue increased $257 million or 9% due to higher net interest income and non-interest income. Personal revenue increased $20 million or 2% due to higher net interest income.

Net interest margin of 3.49% increased 15 basis points from the prior year, primarily due to higher loan margins, deposits growing faster than loans, and accelerated PPP revenue resulting from loan forgiveness, partially offset by lower deposit margins that reflected the impact of the lower interest rate environment.

Total recovery of credit losses was $117 million, compared with a provision of $638 million in the prior year. The provision for credit losses on impaired loans decreased $295 million, largely due to lower commercial provisions in the current year. There was a $132 million recovery of the provision for credit losses on performing loans in the current year, compared with a $328 million provision in the prior year.

Reported non-interest expense was $2,229 million, a decrease of $58 million or 3%, primarily due to lower operational costs in line with a continued focus on expense management, partially offset by higher employee-related costs, largely reflecting performance-based compensation.

Average gross loans and acceptances were relatively unchanged at $92.4 billion, with commercial loan growth of 1%, offset by lower personal loan balances of 4%. The impact of the reduction in PPP loans reduced average loans and acceptances by $0.6 billion or 1%. Average deposits increased $12.7 billion or 13% to $110.9 billion, reflecting higher levels of liquidity retained by customers. Commercial deposits increased 27%, while personal deposits decreased 1%, as continued growth in chequing and savings account deposits was more than offset by a decline in term deposits.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Business Environment and Outlook

The footprint of our U.S. P&C core branch network spans eight states (Illinois, Wisconsin, Missouri, Indiana, Minnesota, Kansas, Arizona and Florida). In addition, commercial banking offers targeted nationwide coverage of key specialty sectors and has offices in select regional markets, while the personal banking digital platform delivers our financial products and services nationally.

Although still impacted by the COVID-19 pandemic, the U.S. economy began to recover in fiscal 2021, gaining strength as public health restrictions were gradually lifted. Consumers and businesses continued to add to their savings, aided by government support programs and rising employment rates. Borrowing remained muted, as high levels of savings led to continued strength in deposit growth and slower loan growth.

The economy is expected to grow at a robust pace in the year ahead, although ongoing uncertainty surrounding the course of the COVID-19 pandemic, labour shortages and supply-chain disruptions are still a concern. Consumers are benefiting from elevated levels of savings and growing employment, and some additional fiscal policy stimulus is also expected. Housing market activity is expected to remain healthy in fiscal 2022, supported by rising employment rates. Corporate credit growth is expected to accelerate, as rising business confidence leads to new investments.

U.S. P&C remains committed to its customers, employees and local communities, and is well-positioned to grow despite a highly competitive environment. In commercial banking, our bankers have been working with our clients throughout the pandemic, providing them with a full range of deposit, lending and advisory solutions that are timely, relevant and supportive of their business. In personal banking, investments in technology continue to deliver improvements in speed, scale and efficiency, and are fuelling growth in digital and mobile adoption.

The U.S. economic environment in fiscal 2021 and the outlook for fiscal 2022 are discussed in more detail in the Economic Developments and Outlook section.

Caution

This U.S. Personal and Commercial Banking section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

BMO Wealth Management

BMO Wealth Management serves a full range of clients, from individuals and families to business owners and institutions, offering a wide spectrum of wealth, asset management and insurance products and services aimed at helping clients plan, grow, protect and transition their wealth. Our asset management business is focused on making a positive impact and delivering innovative client solutions.

Lines of Business

BMO Private Wealth provides full-service investing, banking and wealth advisory services to high net worth and ultra-high net worth clients, leveraging individualized financial planning and advice-based solutions such as investment management, business succession planning, trust and estate services, and philanthropy.

BMO InvestorLine leads Wealth Management's digital investing services, offering three ways for Canadian clients to invest: BMO InvestorLine's self-directed online trading platform for investors who want to be in control of their investments; BMO InvestorLine's adviceDirect™ for investors who want the freedom to make their own investment decisions with personalized advice and support; and SmartFolio™ for investors who want low-fee, professionally managed portfolios aligned with their investment objectives.

BMO Wealth Management U.S. offers financial solutions to mass affluent, high net worth and ultra-high net worth families and businesses.

BMO Global Asset Management provides investment management services to institutional, retail and high net worth investors, offering a wide range of innovative, client-focused solutions and strategies to help clients meet their investment objectives.

BMO Insurance is a diversified insurance and wealth solutions provider and a leader in pension de-risking solutions. It manufactures individual life, critical illness and annuity products, as well as segregated funds. Group creditor and travel insurance is also available to bank customers in Canada through Bank of Montreal.

Strategy and Key Priorities

2021 Priorities and Achievements

Key Priority: Deliver a differentiated client experience, providing outstanding support and working together to plan, grow, protect and transition their wealth with confidence

Achievements

- Achieved overall record-high client loyalty scores, affirming the responsiveness and expertise of our teams, the value of our holistic approach and the results of our proactive outreach in support of clients
- BMO Private Banking was named Best Private Bank in Canada by World Finance magazine for the 11th consecutive year, in recognition of our client-centric approach to navigating the complexity of managing our clients' wealth during times of uncertainty
- Continued to evolve our digital capabilities, introducing a new facial recognition option in the account opening process for BMO Nesbitt Burns clients and simplifying the digital onboarding experience for BMO InvestorLine clients, tripling our self-serve application completion rate since 2018
- BMO Wealth Management U.S. deepened its presence in the Bay Area (California), Atlanta and Dallas, continuing to expand its national reach
- Integrated our North American ultra-high net worth offerings and infrastructure with the bespoke capabilities of the BMO Family Office, a focus on alternative investments and curated client experiences
- Expanded our digital advisory capabilities with the launch of adviceDirect™ Preview and Premium, and offered access to more Canadian online investors by lowering minimum balances, allowing more commission-free trades and changing our fee structure for advisory services
- Enhanced our self-directed and adviceDirect™ trading platforms, including extended capabilities in research, education and portfolio management support, as well as simplified trading procedures
- Launched commission-free trading for self-directed clients on more than 80 exchange traded funds (ETFs)

Key Priority: Extend advantage as a solutions provider, delivering innovative asset management and insurance offerings that anticipate clients' evolving needs and exceed their expectations

Achievements

- Maintained our leadership position in Canadian ETFs, continuing to rank #1 in net new asset growth, launched a suite of Innovation Index ETFs and added to our Environmental, Social and Governance (ESG) ETF line-up
- Recognized for the sustained performance of 25 BMO funds and ETFs at the annual FundGrade A+® Awards, including 18 ETFs and seven mutual funds
- Refreshed our Global Asset Management Trading platform with improved process automation to enhance overall client experience and satisfaction
- Enhanced BMO Insurance products and services with a suite of ESG investment options for Universal Life Insurance and Segregated Funds policyholders and an accelerated underwriting process that offers important life insurance protection without requiring tests or examinations
- Reinforced our leadership position in pension de-risking, securing two of our largest transactions to date and doubling total annual premiums from the prior year

Key Priority: Build on a strong foundation and continue to evolve, simplify and digitize our businesses to drive value and efficiencies

Achievements

- Finalized the sale of our Private Banking business in Hong Kong and Singapore and the sale of EMEA Asset Management as we reposition and grow our operations across our core North American footprint
- Streamlined money management by digitizing the set-up and use of electronic fund transfers and introducing real-time cash transfers from Personal Banking accounts to BMO Nesbitt Burns accounts
- BMO Wealth Management U.S. completed the outsourcing of middle- and back-office broker dealer functions through a partnership with LPL Financial, enhancing our premium brokerage and advisory services with a more robust digital platform and innovative solutions to meet the evolving needs of our clients
- BMO InvestorLine launched a new self-serve option for opening margin and registered retirement income fund accounts

Key Priority: Activate and drive an inclusive, high-performance culture, with a commitment to building diverse and inclusive teams to bring the best of BMO to all clients

Achievements

- Launched a collaborative Wealth Sponsorship Program with insights from the chairs of the Black Professionals Network and the Latino Alliance, as part of the Wealth Racial Equity Action Plan
- Ranked first in the Stewardship and Market Education categories at the Responsible Investment Association's 2021 Leadership Awards for our efforts to extend Canadian diversity and inclusion beyond gender, as well as the development and launch of the MyESG™ analytics tool
- BMO Family Office received the 2021 Diversity in Wealth Management Award from the *Family Wealth Report*, recognizing our commitment to diversity in the workplace
- Solidified BMO's position as a premium wealth advisor for business owners by continuing the collaboration between Advisory and Commercial Banking teams to help clients navigate the uncertainty around proposed tax changes in the United States, which led to a year-over-year increase of more than 70% in revenue from clients referred by Commercial Banking

2022 Focus

- Deliver a top-tier digital wealth management offering, building on our differentiated digital advisory capabilities to provide an enhanced client experience
- Scale our leadership position in private wealth advisory services across North America to plan, grow, protect and transition our clients' wealth with confidence
- Extend our advantage as a solutions provider, expanding asset management and insurance offerings in key growth areas
- Enhance efficiencies by continuing to evolve, simplify and streamline our businesses to drive value
- Foster an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

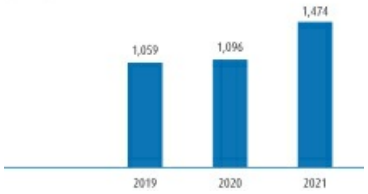
BMO Wealth Management [1]

(Canadian $ in millions, except as noted)

As at or for the year ended October 31	2021	2020	2019
Net interest income	**982**	900	935
Non-interest revenue	**6,071**	5,808	6,727
Total revenue	**7,053**	6,708	7,662
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**1,399**	1,708	2,709
Revenue, net of CCPB	**5,654**	5,000	4,953
Provision for credit losses on impaired loans	**4**	4	2
Provision for (recovery of) credit losses on performing loans	**(16)**	18	(2)
Total provision for (recovery of) credit losses	**(12)**	22	–
Non-interest expense	**3,716**	3,519	3,523
Income before income taxes	**1,950**	1,459	1,430
Provision for income taxes	**476**	363	371
Reported net income	**1,474**	1,096	1,059
Amortization of acquisition-related intangible assets (2)	**24**	34	37
Reinsurance adjustment (3)	**–**	–	25
Adjusted net income	**1,498**	1,130	1,121
Adjusted non-interest expense	**3,685**	3,476	3,476
Key Performance Metrics and Drivers			
Traditional wealth businesses net income	**1,228**	893	861
Traditional wealth businesses adjusted net income	**1,252**	927	898
Insurance net income	**246**	203	198
Insurance adjusted net income	**246**	203	223
Net income growth (%)	**34.4**	3.5	(1.1)
Adjusted net income growth (%)	**32.5**	0.8	0.8
Revenue growth (%)	**5.1**	(12.4)	21.6
Revenue growth, net of CCPB (%)	**13.1**	1.0	0.1
Adjusted CCPB	**1,399**	1,708	2,684
Revenue growth, net of adjusted CCPB (%)	**13.1**	0.5	0.6
Non-interest expense growth (%)	**5.6**	(0.1)	0.2
Adjusted non-interest expense growth (%)	**6.1**	–	0.3
Return on equity (%) (4)	**24.9**	17.1	16.7
Adjusted return on equity (%) (4)	**25.3**	17.7	17.7
Operating leverage, net of CCPB (%)	**7.5**	1.1	(0.1)
Adjusted operating leverage, net of CCPB (%)	**7.0**	0.5	0.3
Efficiency ratio, net of CCPB (%)	**65.7**	70.4	71.1
Adjusted efficiency ratio, net of CCPB (%)	**65.2**	69.5	69.8
Average common equity	**5,899**	6,364	6,321
Average assets	**48,232**	45,573	40,951
Average gross loans and acceptances	**28,920**	26,585	23,519
Average net loans and acceptances	**28,880**	26,547	23,487
Average deposits	**51,030**	43,660	36,419
Assets under administration (AUA) (5)	**427,446**	411,959	393,576
Assets under management (AUM)	**523,270**	482,554	471,160
Full-time equivalent employees	**6,329**	6,193	6,374
U.S. Business Select Financial Data (US$ in millions)			
Total revenue	**625**	583	613
Non-interest expense	**489**	504	512
Reported net income	**104**	61	77
Adjusted non-interest expense	**482**	495	501
Adjusted net income	**109**	68	85
Average net loans and acceptances	**4,878**	4,540	4,156
Average deposits	**7,321**	6,471	5,794

(1) Revenue measures, net of CCPB, adjusted results and ratios, including operating leverage and efficiency ratio, and U.S. dollar amounts in this table are on a non-GAAP basis and discussed in the Non-GAAP and Other Financial Measures section.
(2) Amortization of acquisition-related intangible assets pre-tax amounts of $31 million in 2021, $43 million in 2020 and $47 million in 2019 are recorded in non-interest expense.
(3) Fiscal 2019 reported net income included a reinsurance adjustment of $25 million (pre-tax and after-tax) for the net impact of major reinsurance claims incurred after the wind-down of the reinsurance business. This reinsurance adjustment is included in CCPB.
(4) Return on equity is based on allocated capital. For further information, refer to the Non-GAAP and Other Financial Measures section.
(5) Certain assets under management that are also administered by BMO are included in assets under administration.

Reported Net Income
($ millions)

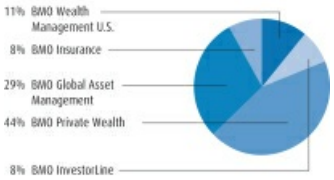


AUA and AUM*
($ billions)



*Numbers may not add due to rounding.

2021 Net Revenue by Line of Business
(%)



Financial Review

BMO Wealth Management reported net income was $1,474 million, an increase of $378 million or 34% from the prior year, primarily driven by revenue growth, partially offset by an increase in expenses.

Traditional Wealth reported net income was $1,228 million, an increase of $335 million or 38% from the prior year. Insurance net income was $246 million, an increase of $43 million or 21% from the prior year.

We also present reported and adjusted revenue on a basis that is net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), and we calculate our efficiency ratio and operating leverage on a similar basis. Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets, caused by movements in interest rates and equity markets, that is largely offset in CCPB. Presenting our revenue, efficiency ratio and operating leverage on a net basis allows for a better assessment of operating results.

Revenue was $7,053 million, an increase of $345 million or 5% from the prior year. Revenue, net of CCPB, was $5,654 million, an increase of $654 million or 13%. Revenue in Traditional Wealth was $5,178 million, an increase of $585 million or 13% from the prior year, due to higher non-interest revenue of $503 million resulting from growth in client assets, including the favourable effects of stronger global markets, an increase in online brokerage revenue and the impact of a legal provision in the prior year, partially offset by the impact of the weaker U.S. dollar. Net interest income increased $82 million, primarily due to strong deposit and loan growth and the impact of a legal provision in the prior year, partially offset by lower margins and the impact of the weaker U.S. dollar. Reported insurance revenue was $1,875 million, a decrease of $240 million or 11% from the prior year. Insurance revenue, net of CCPB, was $476 million, an increase of $69 million or 17%, primarily due to the impact of more favourable market movements in the current year, and business growth, partially offset by lower benefits from changes in investments to improve asset liability management and the unfavourable impact of actuarial assumption changes in the current year.

The total recovery of provisions for credit losses was $12 million, compared with a provision of $22 million in the prior year. The provision for credit losses on impaired loans was unchanged from the prior year. There was a $16 million recovery of the provision for credit losses on performing loans in the current year, compared with an $18 million provision in the prior year.

Reported non-interest expense was $3,716 million, an increase of $197 million or 6% from the prior year, primarily due to higher revenue-based costs, technology-related investments and a legal provision in the current year, partially offset by the impact of the weaker U.S. dollar.

Assets under management increased $40.7 billion or 8%, and assets under administration increased $15.5 billion or 4% from the prior year, primarily due to higher client assets, including stronger global markets, partially offset by attrition resulting from low-yielding assets and foreign exchange rate movements. Average gross loans and average deposits increased 9% and 17%, respectively.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Business Environment and Outlook

The wealth management business remains attractive and highly competitive. We are well-positioned to benefit from emerging industry trends, including the accelerated adoption of digital channels, by leveraging our planning and advisory offerings, our integrated business model, strong client loyalty and investments in our digital capabilities and sales force. Traditional competitors continue to expand their advisory sales forces and product offerings, including exchange traded funds and alternative investment solutions, to meet customers' evolving needs. Non-traditional competitors have continued to gain momentum and are differentiating their offerings by delivering an enhanced digital experience, while also entering niche markets. In fiscal 2021, BMO Wealth Management benefitted from growing momentum in both the equity markets and the economy, as continued high levels of client trading activity drove robust volume growth. Results were also impacted by the continued low interest rate environment, which has put pressure on margins, as well as clients' preference for investments that carry lower management fees. We continue to provide our clients with expert advice, as we assist them in navigating through volatile and uncertain market conditions. We have introduced new and differentiated products and enhanced our digital advisory capabilities, all of which led to strong growth in net new assets, deposits, loans and our online brokerage client base.

The outlook for equity markets could shift quickly if the economy is further impacted by supply-chain disruptions, labour shortages, rising inflation rates and geopolitical factors, including ongoing uncertainty relating to public health restrictions. Interest rates are expected to remain historically low in the near term before rising slowly, which would positively affect margins and insurance revenue. Online brokerage transaction levels moderated in the second half of fiscal 2021, but are expected to remain above pre-pandemic levels. BMO InvestorLine continues to attract new clients through digital platform enhancements, as well as the launch of adviceDirect™ Preview and Premium, and is expanding access to adviceDirect™ for more Canadians with a lower minimum investment balance required for entry.

The divestiture of our Private Banking business in Hong Kong and Singapore and the sale of our EMEA Asset Management business, which closed on November 8, 2021, will reduce revenue and expenses, improve efficiency and return on equity, and are expected to have a modest impact on our income in fiscal 2022.

The Canadian and U.S. economic environment in fiscal 2021 and the outlook for fiscal 2022 are discussed in more detail in the Economic Developments and Outlook section.

Caution

This BMO Wealth Management section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

BMO Capital Markets

BMO Capital Markets is a North American-based financial services provider offering a complete range of products and services to corporate, institutional and government clients. BMO Capital Markets has approximately 2,600 professionals in 32 locations around the world, including 18 offices in North America.

Lines of Business

Investment and Corporate Banking offers debt and equity capital-raising services to clients, as well as loan origination and syndication, balance sheet management solutions and treasury management services.
The division also provides clients with strategic advice on mergers and acquisitions (M&A), restructurings and recapitalizations, trade finance and risk mitigation services to support international business activities, and a wide range of banking and other operating services tailored to North American and international financial institutions.

Global Markets offers research and access to financial markets for institutional, corporate and retail clients through an integrated suite of sales and trading solutions that include debt, foreign exchange, interest rate, credit, equity, securitization and commodities. New product development and origination services are also offered, as well as risk management advice and services to hedge against fluctuations in a variety of key inputs, including interest rates and commodities prices. In addition, Global Markets provides funding and liquidity management to clients.

Strategy and Key Priorities

2021 Priorities and Achievements

Key Priority: Expand on our strengths and capabilities to deliver value-added solutions and meet client needs

Achievements

- Continued a leadership role in M&A with strong global expertise across sectors and deep client relationships, advising on landmark transactions such as the US$2.5 billion acquisition of Core-Mark by Performance Food Group
- Supported clients with top-tier market insights and facilitated groundbreaking initial public offerings, including Magnet Forensics and Alphawave IP; ranked #1* in Canadian Equity Capital Markets, leading high-profile financings such as Algonquin Power
- Built out a U.S. Commercial Mortgage-Backed Securities team, leveraging both our securitized products platform and our North American Real Estate banking coverage, and originated and securitized more than US$1.2 billion in commercial real estate loans
- Maintained a long-standing global leadership position in the Metals & Mining sector, earning recognition as the Best Metals & Mining Investment Bank by *Global Finance* magazine for the 12th consecutive year
- Advanced our commitment of people and capital to serve as our clients' lead partner in the transition to a net zero world by:
  - Establishing an Energy Transition Group
  - Providing expertise and support across industries
  - Delivering industry-leading, innovative sustainable financing solutions, including the first labelled Green Loan and the first sustainability-linked bond in Canada, and ranked #1* in Canadian sustainable bond underwriting
- Recognized as a leader with top rankings* in U.S. sovereign, supranational and agency (SSA) issuances, Canadian options and Canadian structured rates, and maintained BMO's position at the forefront of U.S. secured overnight financing rate (SOFR) debt underwriting, ranking #1* since the offering was launched in 2018
- Recognized at the International Business Awards 2021 for the marketing campaigns for our digital series *Road to Recovery* and our podcast series *Sustainability Leaders*

* Rankings as in Bloomberg Professional Services' league tables.

Key Priority: Build on a solid foundation to work smarter, simplify and digitize to enhance efficiencies

Achievements

- Expanded electronic foreign exchange (eFX) capabilities, introducing new foreign-exchange functionality in our Commercial Banking platform and launching an eFX retail platform
- With the 2020 acquisition of Clearpool Group, Inc., doubled our algorithmic trading market share in Canada, simplified workflow, provided clients with a highly differentiated and customized trading experience, and expanded electronic trading capabilities to Europe
- Partnered with Riskfuel Analytics Inc. to deliver innovative artificial intelligence-based solutions that support clients as they prepare to make faster, smarter investment decisions
- Deployed technology enhancements, workflow tools and process automation to increase employee productivity. Over three years, our employees achieved real-time efficiencies that led to time savings totalling approximately three-quarters of our *Million Hour Challenge* objective
- Pivoted conferences to fully digital platforms, with corporate attendance at 18 conferences up more than 100%

Key Priority: Activate an inclusive, high-performance culture focused on clients, strong partnerships and alignment, and a commitment to diversity, equity and inclusion

Achievements

- Leveraged improvements in technology and real estate to transform our workplaces and enhance the client and employee experience across our global footprint
- Launched innovative programs and sponsorships to drive greater equity and inclusion across our workforce, industry and communities
- Launched the inaugural BMO Women in Business bond offering, the first of its kind in the Canadian market, with proceeds allocated to women-owned business lending, including financing for micro, small and medium-sized enterprises

2022 Focus

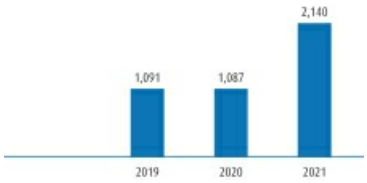
- Accelerate growth in areas where we are well-positioned and have the expertise and capabilities to deliver value-added solutions and provide an enhanced client experience
- Deploy digital-first capabilities with an increased focus on data, analytics and artificial intelligence to drive simplification and scale
- Become an industry leader in sustainable finance, providing advice and innovative solutions to help our clients reach their environmental, social and governance objectives
- Foster and drive an inclusive, winning culture, focused on alignment, empowerment and recognition, with a commitment to a diverse and inclusive workplace

BMO Capital Markets [1]

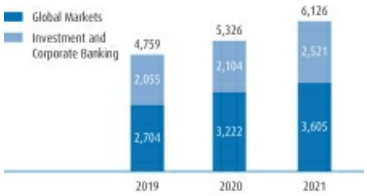
(Canadian $ in millions, except as noted) As at or for the year ended October 31	2021	2020	2019
Net interest income (teb) (2)	**3,115**	3,320	2,390
Non-interest revenue	**3,011**	2,006	2,369
Total revenue (teb)	**6,126**	5,326	4,759
Provision for credit losses on impaired loans	**11**	310	52
Provision for (recovery of) credit losses on performing loans	**(205)**	349	28
Total provision for (recovery of) credit losses	**(194)**	659	80
Non-interest expense	**3,436**	3,236	3,279
Income before income taxes	**2,884**	1,431	1,400
Provision for income taxes (teb)	**744**	344	309
Reported net income	**2,140**	1,087	1,091
Acquisition integration costs (3)	**7**	11	10
Amortization of acquisition-related intangible assets (4)	**17**	18	17
Adjusted net income	**2,164**	1,116	1,118
Adjusted non-interest expense	**3,405**	3,199	3,244
Key Performance Metrics and Drivers			
Global Markets revenue	**3,605**	3,222	2,704
Investment and Corporate Banking revenue	**2,521**	2,104	2,055
Net income growth (%)	**96.9**	(0.4)	(5.9)
Adjusted net income growth (%)	**94.1**	(0.2)	(4.7)
Revenue growth (%)	**15.0**	11.9	8.5
Non-interest expense growth (%)	**6.2**	(1.3)	13.9
Adjusted non-interest expense growth (%)	**6.4**	(1.4)	13.4
Return on equity (%) (5)	**19.2**	9.2	9.9
Adjusted return on equity (%) (5)	**19.5**	9.5	10.1
Operating leverage (teb) (%)	**8.8**	13.2	(5.4)
Adjusted operating leverage (teb) (%)	**8.6**	13.3	(4.9)
Efficiency ratio (teb) (%)	**56.1**	60.8	68.9
Adjusted efficiency ratio (teb) (%)	**55.6**	60.1	68.2
Average common equity	**10,913**	11,353	10,430
Average assets	**372,475**	369,518	342,626
Average gross loans and acceptances	**59,385**	68,698	60,819
Average net loans and acceptances	**58,909**	68,303	60,731
Full-time equivalent employees	**2,597**	2,678	2,772
U.S. Business Select Financial Data (US$ in millions)			
Total revenue (teb)	**2,373**	1,865	1,609
Non-interest expense	**1,288**	1,152	1,197
Reported net income	**857**	279	292
Adjusted net income	**876**	299	312
Adjusted non-interest expense	**1,263**	1,125	1,171
Average assets	**127,619**	116,307	107,185
Average net loans and acceptances	**25,249**	26,161	21,662

(1) Adjusted results and ratios, teb amounts and U.S. dollar amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Taxable equivalent basis amounts of $291 million in fiscal 2021, $307 million in fiscal 2020 and $262 million in fiscal 2019 are recorded in net interest income.
(3) KGS-Alpha and Clearpool pre-tax acquisition integration costs of $9 million in 2021, $14 million in 2020 and $13 million in 2019 are recorded in non-interest expense.
(4) Amortization of acquisition-related intangible assets pre-tax amounts of $22 million in 2021, $23 million in 2020 and $22 million in 2019 are recorded in non-interest expense.
(5) Return on equity is based on allocated capital. For further information, refer to theNon-GAAP and Other Financial Measures section.

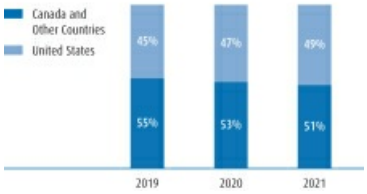
Reported Net Income
($ millions)



Revenue by Line of Business
($ millions)



Revenue by Geography
(%)



Financial Review

BMO Capital Markets reported net income was $2,140 million, an increase of $1,053 million or 97% from the prior year. Recoveries of provisions for credit losses and revenue growth were partially offset by an increase in expenses.

Revenue was $6,126 million, an increase of $800 million or 15% from the prior year. Global Markets revenue increased $383 million or 12%, primarily due to higher equities trading revenue, as well as higher levels of new equity and debt issuances, partially offset by lower interest rate and commodities trading revenue and the impact of the weaker U.S. dollar. The prior year included negative impacts from equity linked notes-related businesses. Investment and Corporate Banking revenue increased $417 million or 20%, primarily due to higher net securities gains and underwriting and advisory revenue, partially offset by lower corporate banking-related revenue and the impact of the weaker U.S. dollar. The prior year was impacted by markdowns on the held-for-sale loan portfolio.

Total recovery of credit losses was $194 million, compared with a provision for credit losses of $659 million in the prior year. The provision for credit losses on impaired loans was $11 million, a decrease of $299 million from the prior year. There was a recovery of the provision for credit losses on performing loans of $205 million in the current year, compared with a provision of $349 million in the prior year.

Reported non-interest expense was $3,436 million, an increase of $200 million or 6% from the prior year. The increase was largely due to higher performance-based compensation, partially offset by the impact of the weaker U.S. dollar and lower travel and business development costs.

Average gross loans and acceptances decreased $9.3 billion or 14% from the prior year to $59.4 billion, primarily due to lower loan utilizations, the impact of the weaker U.S. dollar and the announced wind-down of our non-Canadian energy portfolio.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Business Environment and Outlook

In fiscal 2021, BMO Capital Markets continued to execute on a strategy that leverages its balanced, diversified and client-focused business model, while maintaining disciplined risk management. The business benefitted from ongoing high levels of client activity, robust equity prices and favourable conditions for investment banking services, all of which contributed to strong results, despite lingering uncertainty surrounding the COVID-19 pandemic and the emergence of new variants, the normalization of market volatility, the low interest rate environment and muted loan demand.

BMO Capital Markets is emerging from the pandemic as a stronger, more efficient and better-integrated organization. Looking ahead to fiscal 2022, the pace of economic recovery remains uncertain, despite high rates of vaccination in certain regions. Supply-chain disruptions, labour shortages and higher inflation rates continue to generate headwinds for our business. However, mergers and acquisitions activity is expected to remain robust, as it benefits from active private equity funds and supportive debt and equity markets. BMO Capital Markets' strategy remains unchanged: a sharp focus on clients, aiming to be their valued financial partner – leveraging talent, innovative solutions and capital to help them achieve their goals while deploying digital-first solutions that drive simplification and scale. With a leading position in Canada and strong momentum in the United States, our investments in product offerings and capabilities that help us serve clients, particularly where BMO has core strengths and opportunities, are building a solid foundation for profitable growth and sustainable returns. In addition, BMO Capital Markets' disciplined and integrated approach to risk management, along with continued investments in technology infrastructure, is expected to position the business well to adapt to evolving regulatory and compliance requirements in the coming years. BMO Capital Markets has also made sustainability and sustainable finance a core part of its strategy, providing innovative financing solutions and advice to support clients in the accelerating shift to a more sustainable economy.

The Canadian and U.S. economic environment in fiscal 2021 and the outlook for fiscal 2022 are discussed in more detail in the Economic Developments and Outlook section.

Caution
This BMO Capital Markets section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Corporate Services, including Technology and Operations

Corporate Services consists of Corporate Units and Technology and Operations (T&O). Corporate Units provide enterprise-wide expertise, governance and support in a variety of areas, including strategic planning, risk management, treasury, finance, legal and regulatory compliance, human resources, communications, marketing, real estate and procurement. T&O develops, monitors, manages and maintains governance of information technology, including data and analytics, and provides cyber security and operations services.

Corporate Services focuses on enterprise-wide priorities related to maintaining a sound risk and control environment and regulatory compliance, including the management, assessment and monitoring of BMO's investment portfolios, funding, liquidity and capital activities, and credit, foreign exchange and interest rate risks. In support of the operating segments, Corporate Services develops and implements enterprise-wide processes, systems and controls to maintain operating efficiency and enable our businesses to adapt and meet their customer experience objectives.

The costs of Corporate Units and T&O services are largely allocated to the four operating segments (Canadian P&C, U.S. P&C, BMO Wealth Management and BMO Capital Markets), with any remaining amounts retained in Corporate Services results. As such, Corporate Services results largely reflect the impact of residual treasury-related activities, the elimination of taxable equivalent adjustments, and residual unallocated expenses.

Achievements

- Advanced BMO's digital first operating model by delivering digitally driven customer experiences through various initiatives
- Continued to advance the capabilities of our Financial Crimes Unit (FCU) to respond to a heightened and evolving threat landscape by further integrating our cyber, fraud, physical security and crisis management functions into a single cohesive security team. Technology, people and process areas of focus included enhancing detection and response capabilities, improving identity and access management, and ensuring resilience against virtual and physical attacks
- Supported an accelerated adoption of cloud-based solutions, strengthened cloud service delivery partnerships and built out a foundational platform to equip BMO with a new generation of security and monitoring capabilities and the flexibility to adapt in an ever-changing security landscape
- Further enhanced our artificial intelligence and data and analytics capabilities across the bank, and supported business initiatives that have earned global recognition and awards. Research and exploration focused on emerging technology innovation is continuing, as new opportunities are identified
- Sustained delivery of critical technology services and operations across the enterprise, continuously improving foundational capabilities to build resilience and scalability and elevate the overall technology-enabled experience for customers and employees
- Continued to focus on elevating the employee experience through enterprise digital technology tools, and on facilitating a prudent return to the workplace

Corporate Services, including Technology and Operations (1)

(Canadian $ in millions, except as noted) As at or for the year ended October 31	2021	2020	2019
Net interest income before group teb offset	**(301)**	(364)	(242)
Group teb offset	**(315)**	(335)	(296)
Net interest income (teb)	**(616)**	(699)	(538)
Non-interest revenue	**326**	285	238
Total revenue (teb)	**(290)**	(414)	(300)
Provision for (recovery of) credit losses on impaired loans	**(5)**	3	(7)
Provision for (recovery of) credit losses on performing loans	**(2)**	–	(5)
Total provision for (recovery of) credit losses	**(7)**	3	(12)
Non-interest expense	**1,523**	455	856
Income (loss) before income taxes	**(1,806)**	(872)	(1,144)
Recovery of income taxes (teb)	**(520)**	(482)	(517)
Reported net loss	**(1,286)**	(390)	(627)
Impact of divestitures (2)	**842**	–	–
Restructuring costs (reversals) (3)	**(18)**	–	357
Adjusted net loss (4)	**(462)**	(390)	(270)
Adjusted total revenue (teb) (4)	**(319)**	(414)	(300)
Adjusted non-interest expense (4)	**661**	455	372
Full-time equivalent employees	**13,791**	14,400	14,898
U.S. Business Select Financial Data (US$ in millions)			
Total revenue	**(26)**	(116)	(37)
Total provision for (recovery of) credit losses	**(6)**	3	(4)
Non-interest expense	**182**	97	192
Recovery of income taxes	**(90)**	(88)	(76)
Reported net loss	**(112)**	(128)	(149)
Adjusted total revenue	**(26)**	(116)	(37)
Adjusted non-interest expense	**164**	97	76
Adjusted net loss	**(98)**	(128)	(63)

(1) Adjusted results and ratios, teb amounts and U.S. dollar amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Fiscal 2021 reported net income included a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and $85 million ($107 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense.
(3) Fiscal 2019 reported net income included a $357 million ($484 million pre-tax) restructuring charge related to severance and a small amount of real estate-related costs. Fiscal 2021 reported net income included a partial reversal of restructuring charges related to severance of $18 million ($24 million pre-tax). Restructuring charges and the partial reversal were recorded in non-interest expense.
(4) Adjusted results exclude the impact of the items described in footnotes (2) and (3).

Financial Review

Corporate Services reported net loss was $1,286 million and adjusted net loss was $462 million, compared with a reported and adjusted net loss of $390 million in the prior year. Adjusted results in the current year excluded the impact of divestitures of $842 million ($857 million pre-tax), including a $779 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore, and $85 million ($107 million pre-tax) of divestiture-related costs for both transactions, as well as an $18 million ($24 million pre-tax) partial reversal of restructuring charges recorded in 2019 related to severance. The higher reported and adjusted net loss reflected an increase in expenses, partially offset by higher revenue that was driven by higher securities gains and treasury-related activities, and the impact of a less favourable tax rate in the prior year.

For further information on non-GAAP amounts, measures and ratios in this 2021 Operating Groups Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

Review of Fourth Quarter 2021 Performance

Q4 2021 vs. Q4 2020

Net Income

Reported net income was $2,159 million, an increase of $575 million or 36% from the prior year, and adjusted net income was $2,226 million, an increase of $616 million or 38%. Adjusted results in the current quarter excluded expenses of $52 million ($62 million pre-tax) from the impact of divestitures related to the sale of our EMEA Asset Management business and the sale of our Private Banking business in Hong Kong and Singapore. Adjusted results also excluded the amortization of acquisition-related intangible assets and acquisition integration costs in both the current and prior years. Reported EPS was $3.23, an increase of $0.86 from the prior year, and adjusted EPS was $3.33, an increase of $0.92.

Results were driven by strong revenue growth and the impact of lower provisions for credit losses, partially offset by an increase in expenses. All operating groups recorded higher net income, while Corporate Services recorded a higher net loss.

Revenue

Reported revenue was $6,573 million, an increase of $587 million or 10% from the prior year. On a basis that nets insurance claims, commissions and changes in policy benefit liabilities (CCPB) against insurance revenue (net revenue), revenue was $6,476 million, an increase of $490 million or 8% from the prior year.

Revenue increased in Canadian P&C due to higher net interest income and higher non-interest revenue, in BMO Wealth Management, largely from growth in client assets, including stronger global markets, partially offset by lower insurance revenue, in BMO Capital Markets due to higher Investment and Corporate Banking revenue, partially offset by lower Global Markets revenue, and in U.S. P&C due to higher net interest income and higher non-interest revenue. Corporate Services revenue decreased from the prior year. The impact of the weaker U.S. dollar decreased total revenue by 2%.

Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Insurance claims, commissions and changes in policy benefit liabilities (CCPB) were $97 million, compared with $nil in the prior year. The increase was largely due to changes in the fair value of policy benefit liabilities. CCPB decreased $887 million from the prior quarter due to changes in the fair value of policy benefit liabilities. The changes were largely offset in revenue.

Provision for Credit Losses

Total recovery of the provision for credit losses was $126 million, compared with a provision for credit losses of $432 million in the prior year. The total recovery of the provision for credit losses as a percentage of average net loans and acceptances ratio was 11 basis points, compared with a provision for credit losses ratio of 37 basis points in the prior year. The provision for credit losses on impaired loans was $84 million, a decrease of $255 million from $339 million in the prior year. The provision for credit losses on impaired loans as a percentage of average net loans and acceptances ratio was 7 basis points, compared with 29 basis points in the prior year. There was a $210 million recovery of the provision for credit losses on performing loans in the current quarter, compared with a $93 million provision in the prior year. The $210 million recovery in the current quarter largely reflected an improving economic outlook and positive credit migration, partially offset by growth in loan balances, while the $93 million provision in the prior year reflected a more severe adverse scenario, partially offset by an improving economic outlook and reduced balances.

Non-Interest Expense

Reported non-interest expense was $3,803 million, an increase of $255 million or 7% from the prior year, including $62 million of expenses from the impact of divestitures in the current year. Adjusted non-interest expense was $3,720 million, an increase of $205 million or 6%. The increase in expenses was primarily due to higher employee-related costs, including performance-based costs, travel and business development costs, computer and equipment costs, and professional fees, partially offset by the impact of the weaker U.S. dollar that decreased expenses by 2%.

Provision for Income Taxes

The provision for income taxes was $640 million, an increase of $218 million from the prior year, and the effective tax rate was 22.9%, compared with 21.1% in the prior year. The adjusted provision for income taxes was $656 million, an increase of $227 million from the prior year, and the adjusted effective tax rate was 22.7%, compared with 21.1% in the prior year. The effective tax rate and adjusted effective tax rate were lower in the prior year primarily due to earnings mix, including the impact of lower pre-tax income in the prior year.

Q4 2021 vs. Q3 2021

Reported net income decreased $116 million or 5% from the prior quarter, and adjusted net income decreased $66 million or 3%. Adjusted results in the prior quarter excluded divestiture costs of $18 million ($24 million pre-tax) and a partial reversal of previously recorded restructuring charges related to severance of $18 million ($24 million pre-tax), as well as the amortization of acquisition-related intangible assets and acquisition integration costs. Results were primarily driven by lower revenue and an increase in expenses, partially offset by the impact of a larger recovery of the provision for credit losses. Net income increased in Canadian P&C and was partially offset by decreases in U.S. P&C, BMO Wealth Management and BMO Capital Markets. Corporate Services recorded a higher net loss.

Revenue was $6,573 million, a decrease of $989 million or 13% from the prior quarter. Revenue, net of CCPB, was $6,476 million, a decrease of $102 million or 2%. Reported non-interest expense increased $119 million or 3% from the prior quarter. Adjusted non-interest expense increased $58 million or 2%. Total recovery of the provision for credit losses was $126 million, compared with a recovery of $70 million in the prior quarter.

For further information on non-GAAP amounts, measures and ratios in this Review of Fourth Quarter 2021 Performance section, refer to the Non-GAAP and Other Financial Measures section.

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Summary Quarterly Earnings Trends

Summarized Statement of Income and Quarterly Financial Measures [1]

(Canadian $ in millions, except as noted)	Q4-2021	Q3-2021	Q2-2021	Q1-2021	Q4-2020	Q3-2020	Q2-2020	Q1-2020
Net interest income (teb)	**3,756**	**3,521**	**3,455**	**3,578**	3,530	3,535	3,518	3,388
Non-interest revenue	**2,817**	**4,041**	**2,621**	**3,397**	2,456	3,654	1,746	3,359
Revenue (teb)	**6,573**	**7,562**	**6,076**	**6,975**	5,986	7,189	5,264	6,747
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**97**	**984**	**(283)**	**601**	–	1,189	(197)	716
Revenue, net of CCPB (teb)	**6,476**	**6,578**	**6,359**	**6,374**	5,986	6,000	5,461	6,031
Provision for credit losses on impaired loans	**84**	**71**	**155**	**215**	339	446	413	324
Provision for (recovery of) credit losses on performing loans	**(210)**	**(141)**	**(95)**	**(59)**	93	608	705	25
Total provision for (recovery of) credit losses	**(126)**	**(70)**	**60**	**156**	432	1,054	1,118	349
Non-interest expense	**3,803**	**3,684**	**4,409**	**3,613**	3,548	3,444	3,516	3,669
Income before provision for income taxes	**2,799**	**2,964**	**1,890**	**2,605**	2,006	1,502	827	2,013
Provision for income taxes (teb)	**640**	**689**	**587**	**588**	422	270	138	421
Reported net income (see below)	**2,159**	**2,275**	**1,303**	**2,017**	1,584	1,232	689	1,592
Acquisition integration costs (2)	**1**	**2**	**2**	**2**	3	4	2	2
Amortization of acquisition-related intangible assets (3)	**14**	**15**	**18**	**19**	23	23	24	23
Impact of divestitures (4)	**52**	**18**	**772**	**–**	–	–	–	–
Restructuring costs (reversals) (5)	**–**	**(18)**	**–**	**–**	–	–	–	–
Adjusted net income (see below)	**2,226**	**2,292**	**2,095**	**2,038**	1,610	1,259	715	1,617
Operating group reported net income								
Canadian P&C reported net income	**921**	**815**	**764**	**737**	647	319	362	699
Amortization of acquisition-related intangible assets (3)	**–**	**–**	**1**	**–**	1	–	1	–
Canadian P&C adjusted net income	**921**	**815**	**765**	**737**	648	319	363	699
U.S. P&C reported net income	**512**	**553**	**542**	**582**	324	263	339	351
Amortization of acquisition-related intangible assets (3)	**6**	**6**	**5**	**7**	9	10	10	10
U.S. P&C adjusted net income	**518**	**559**	**547**	**589**	333	273	349	361
BMO Wealth Management reported net income	**369**	**401**	**346**	**358**	320	341	144	291
Amortization of acquisition-related intangible assets (3)	**4**	**5**	**7**	**8**	8	8	9	9
BMO Wealth Management adjusted net income	**373**	**406**	**353**	**366**	328	349	153	300
BMO Capital Markets reported net income	**536**	**558**	**563**	**483**	379	426	(74)	356
Acquisition integration costs (2)	**1**	**2**	**2**	**2**	3	4	2	2
Amortization of acquisition-related intangible assets (3)	**4**	**4**	**5**	**4**	5	5	4	4
BMO Capital Markets adjusted net income	**541**	**564**	**570**	**489**	387	435	(68)	362
Corporate Services reported net loss	**(179)**	**(52)**	**(912)**	**(143)**	(86)	(117)	(82)	(105)
Impact of divestitures (4)	**52**	**18**	**772**	**–**	–	–	–	–
Restructuring costs (reversals) (5)	**–**	**(18)**	**–**	**–**	–	–	–	–
Corporate Services adjusted net loss	**(127)**	**(52)**	**(140)**	**(143)**	(86)	(117)	(82)	(105)
Basic earnings per share ($) (6) (7)	**3.24**	**3.42**	**1.91**	**3.03**	2.37	1.81	1.00	2.38
Diluted earnings per share ($) (6) (7)	**3.23**	**3.41**	**1.91**	**3.03**	2.37	1.81	1.00	2.37
Adjusted diluted earnings per share ($)	**3.33**	**3.44**	**3.13**	**3.06**	2.41	1.85	1.04	2.41
Net interest margin on average earning assets (%)	**1.62**	**1.57**	**1.59**	**1.59**	1.60	1.59	1.69	1.67
PCL-to-average net loans and acceptances (annualized) (%)	**(0.11)**	**(0.06)**	**0.05**	**0.14**	0.37	0.89	0.94	0.31
PCL on impaired loans-to-average net loans and acceptances (annualized) (%)	**0.07**	**0.06**	**0.13**	**0.19**	0.29	0.38	0.35	0.29
Effective tax rate (%)	**22.9**	**23.2**	**31.1**	**22.6**	21.1	18.0	16.6	20.9
Adjusted effective tax rate (%)	**22.7**	**23.2**	**22.1**	**22.6**	21.1	18.2	16.7	21.0
Canadian/U.S. dollar average exchange rate ($)	**1.2546**	**1.2316**	**1.2512**	**1.2841**	1.3217	1.3584	1.3811	1.3161

(1) Revenue measures, net of CCPB, adjusted results and ratios teb amounts, and U.S. dollar amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.
(2) Acquisition integration costs related to the acquired BMO Transportation Finance business are charged to Corporate Services, since the acquisition impacts both Canadian and U.S. P&C businesses. Acquisition integration costs related to KGS-Alpha and Clearpool are reported in BMO Capital Markets. Acquisition integration costs are recorded in non-interest expense.
(3) Amortization of acquisition-related intangible assets is charged to non-interest expense in the related operating group.
(4) Q2-2021 reported net income included the impact of divestitures, comprising a $747 million pre-tax and after-tax write-down of goodwill related to the sale of our EMEA Asset Management business recorded in non-interest expense, a $22 million ($29 million pre-tax) net gain on the sale of our Private Banking business in Hong Kong and Singapore recorded in non-interest revenue, and $47 million ($53 million pre-tax) of divestiture-related costs for both transactions recorded in non-interest expense. The impact of divestitures for these transactions was $18 million ($24 million pre-tax) in Q3-2021 and $52 million ($62 million pre-tax) in Q4-2021 recorded in non-interest expense in Corporate Services.
(5) Q3-2021 reported net income included a partial reversal of restructuring charges related to severance of $18 million ($24 million pre-tax). Restructuring charges and reversal were recorded in non-interest expense in Corporate Services.
(6) Earnings per share (EPS) is calculated using net income after deducting total dividends on preferred shares and distributions on other equity instruments. For more information on EPS, refer to Note 23 of the consolidated financial statements.
(7) Net income and earnings from our business operations are attributable to shareholders by way of EPS and diluted EPS. Adjusted EPS and adjusted diluted EPS are non-GAAP measures. For further information, refer to the Non-GAAP and Other Financial Measures section.

Financial performance in recent quarters has generally been trending upward, due to improving economic conditions and good operating momentum across our businesses, including lower provisions for credit losses, strong revenue growth and improved efficiency. While results in 2020 were negatively impacted by the significant adverse effects of the COVID-19 pandemic on the global economy, a reduction in interest rates and lower levels of consumer and business activity and borrowing, economic conditions subsequently rebounded and continue to improve. However, the unpredictable course of the COVID-19 pandemic, including the emergence of variants and a possible resurgence of cases globally, contributes to ongoing economic uncertainty.

Reported results in the second quarter of 2021 included a write-down of goodwill related to the sale of our EMEA Asset Management business and a net gain on the sale of our Private Banking business in Hong Kong and Singapore. The last three quarters of 2021 reflected the impact of divestitures related to these transactions. The third quarter of 2021 also included a partial reversal of a restructuring charge recorded in 2019. All periods included the amortization of acquisition-related intangible assets and acquisition integration costs.

Total revenue growth reflects the benefits of our diversified businesses. Revenue growth in the P&C businesses was initially negatively impacted by the COVID-19 pandemic, the low interest rate environment and lower non-interest revenue due to lower levels of client activity, which have been rising in the most recent quarters as public health restrictions have been relaxed. Canadian P&C benefitted from strong growth in residential mortgages and home equity lines of credit, reflecting higher levels of housing market activity. Revenue in U.S. P&C on a source-currency basis rebounded in 2021, driven by higher loan spreads and Paycheck Protection Program revenue, and has remained relatively stable over the last four quarters due to more muted industry loan growth. In BMO Wealth Management, Traditional Wealth revenue performance has been supported by stronger global markets. Insurance revenue, net of CCPB, is subject to variability, primarily resulting from changes in interest rates and equity markets. BMO Capital Markets recorded year-over-year revenue growth in seven of the past eight quarters, primarily reflecting higher trading and underwriting revenue due to robust client activity, while the second quarter of 2020 was negatively impacted by volatile market conditions resulting from the COVID-19 pandemic. Revenue in the fourth quarter of 2021 reflected good performance in all operating groups. Revenue growth has also been impacted by changes in the strength of the U.S. dollar.

In 2020, we recorded higher provisions for credit losses in all businesses, primarily due to the impact of the COVID-19 pandemic, including higher provisions for credit losses on performing loans in the wake of the economic downturn brought on by the pandemic. In 2021, we recorded lower provisions for credit losses on impaired loans, as well as recoveries of provisions for credit losses on performing loans, which reflected the improving economic outlook and more favourable credit conditions.

Non-interest expense reflected our focus on expense management and efficiency improvement. In recent quarters, non-interest expense growth has been driven by higher performance-based compensation reflecting improved revenue performance, and higher technology and marketing costs, partially offset by lower net COVID-19 related costs, as well as lower travel costs due to the continued impact of the pandemic. Expenses were also impacted by changes in the strength of the U.S. dollar.

The effective tax rate has varied with legislative changes; changes in tax policy, including their interpretation by tax authorities and the courts; earnings mix, including the relative proportion of earnings attributable to the different jurisdictions in which we operate, the level of pre-tax income, and the level of tax-exempt income from securities. The effective tax rate in 2021 was impacted by the write-down of goodwill related to the sale of our EMEA Asset Management business.

For further information on non-GAAP amounts, measures and ratios in this Summary Quarterly Earnings Trends section, refer to the Non-GAAP and Other Financial Measures section.

2020 Financial Performance Review

The preceding discussions in the MD&A focused on BMO's performance in fiscal 2021. This section summarizes BMO's performance in fiscal 2020, relative to fiscal 2019. Certain prior-year data has been reclassified to conform with the presentation in 2021, including changes resulting from transfers between operating groups. Further information on these reclassifications is provided in the How BMO Reports Operating Group Results section.

(Canadian $ in millions)	Canadian P&C	U.S. P&C	Total P&C	BMO Wealth Management	BMO Capital Markets	Corporate Services	Total Bank
2020							
Net interest income (teb) (1)	6,105	4,345	10,450	900	3,320	(699)	13,971
Non-interest revenue	1,930	1,186	3,116	5,808	2,006	285	11,215
Revenue	8,035	5,531	13,566	6,708	5,326	(414)	25,186
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	–	–	–	1,708	–	–	1,708
Revenue, net of CCPB	8,035	5,531	13,566	5,000	5,326	(414)	23,478
Provision for credit losses	1,410	859	2,269	22	659	3	2,953
Non-interest expense	3,892	3,075	6,967	3,519	3,236	455	14,177
Income (loss) before income taxes (teb) (1)	2,733	1,597	4,330	1,459	1,431	(872)	6,348
Provision for (recovery of) income taxes	706	320	1,026	363	344	(482)	1,251
Net income (loss)	2,027	1,277	3,304	1,096	1,087	(390)	5,097
Acquisition integration costs	–	–	–	–	11	–	11
Amortization of acquisition-related intangible assets	2	39	41	34	18	–	93
Restructuring costs	–	–	–	–	–	–	–
Reinsurance adjustment	–	–	–	–	–	–	–
Adjusted net income (loss)	2,029	1,316	3,345	1,130	1,116	(390)	5,201
2019							
Net interest income (teb) (1)	5,885	4,216	10,101	935	2,390	(538)	12,888
Non-interest revenue	2,099	1,162	3,261	6,727	2,369	238	12,595
Revenue	7,984	5,378	13,362	7,662	4,759	(300)	25,483
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	–	–	–	2,709	–	–	2,709
Revenue, net of CCPB	7,984	5,378	13,362	4,953	4,759	(300)	22,774
Provision for (recovery of) credit losses	607	197	804	–	80	(12)	872
Non-interest expense	3,836	3,136	6,972	3,523	3,279	856	14,630
Income (loss) before income taxes (teb) (1)	3,541	2,045	5,586	1,430	1,400	(1,144)	7,272
Provision for (recovery of) income taxes	917	434	1,351	371	309	(517)	1,514
Net income (loss)	2,624	1,611	4,235	1,059	1,091	(627)	5,758
Acquisition integration costs	–	–	–	–	10	–	10
Amortization of acquisition-related intangible assets	2	43	45	37	17	–	99
Restructuring costs	–	–	–	–	–	357	357
Reinsurance adjustment	–	–	–	25	–	–	25
Adjusted net income (loss)	2,626	1,654	4,280	1,121	1,118	(270)	6,249

(1) BMO analyzes revenue on a teb basis at the operating group level, with the offset to the group teb adjustments recorded in Corporate Services non-interest revenue and provision for income taxes. Revenue measures, net of CCPB, adjusted results and ratios, teb amounts and U.S. dollar amounts in this table are on a non-GAAP basis and are discussed in the Non-GAAP and Other Financial Measures section.

Net Income

Reported net income in 2020 was $5,097 million, a decrease of $661 million or 11% from $5,758 million in 2019. Adjusted net income was $5,201 million, a decrease of $1,048 million or 17% from $6,249 million in 2019. Adjusted net income in both 2020 and 2019 excluded the amortization of acquisition-related intangible assets and acquisition-related costs. Adjusted net income in 2019 also excluded a restructuring charge, primarily severance-related, and the net impact of major reinsurance claims resulting from Japanese typhoons incurred after the announced wind-down of the reinsurance business. The decline in adjusted net income reflected the impact of higher provisions for credit losses, which increased $2,081 million pre-tax or $1,531 million after tax, partially offset by higher revenue, while adjusted expenses were relatively unchanged. Decreases in net income were recorded in the P&C businesses, while net income in BMO Capital Markets and BMO Wealth Management was largely unchanged from 2019. In Corporate Services, the reported net loss decreased from 2019, while the adjusted net loss increased.

Return on Equity

Reported return on equity (ROE) in 2020 was 10.1% and adjusted ROE was 10.3%, compared with 12.6% and 13.7%, respectively, in 2019. Reported and adjusted ROE decreased in 2020, primarily due to lower net income and higher common equity. There was a decrease of $697 million or 13% in reported net income available to common shareholders, and a decrease of $1,084 million or 18% in adjusted net income available to common shareholders from 2019. Average common shareholders' equity increased $4.1 billion or 9% from 2019, primarily due to growth in retained earnings and accumulated other comprehensive income.

Revenue

Reported revenue in 2020 was $25,186 million, a decrease of $297 million from $25,483 million in 2019. On a basis that nets insurance claims, commissions and changes in policy benefit liabilities (CCPB) against insurance revenue (net revenue), revenue was $23,478 million, an increase of $704 million or 3%. Revenue, net of adjusted CCPB, increased $679 million or 3% from the prior year, and excluded the $25 million net impact of major reinsurance claims in 2019. The increase in revenue was largely driven by strong performance in BMO Capital Markets, primarily due to increased trading revenue, and revenue growth in the P&C businesses and BMO Wealth Management, partially offset by a decrease in Corporate Services revenue.

Canadian P&C
Revenue increased $51 million or 1% from 2019, due to higher average balances across most products, partially offset by lower margins reflecting the low interest rate environment, and lower non-interest revenue, largely due to lower credit card fee revenue and deposit fee revenue.

U.S. P&C
Revenue increased $153 million or 3% from 2019 on a Canadian dollar basis. On a U.S. dollar basis, revenue increased $65 million or 2%, primarily due to growth in average deposit and loan balances, as well as higher loan margins and higher non-interest revenue, partially offset by lower deposit product margins, reflecting the impact of lower interest rates.

BMO Wealth Management
Revenue, net of reported and adjusted CCPB, increased $47 million or 1% on a reported basis and $22 million on an adjusted basis from 2019. Revenue in Traditional Wealth increased $38 million, primarily due to higher elevated online brokerage revenue and growth in client assets, net of fee pressure, partially offset by a legal provision in 2020 and lower net interest income, as the benefits of strong loan and deposit growth were more than offset by lower margins. Insurance revenue, net of reported and adjusted CCPB, increased $9 million on a reported basis and decreased $16 million on an adjusted basis, primarily due to higher creditor insurance claims.

BMO Capital Markets
Revenue increased $567 million or 12% from 2019. Global Markets revenue increased, primarily due to higher revenue from interest rate trading, commodities trading and foreign exchange trading, partially offset by a decrease in equities trading revenue. Investment and Corporate Banking revenue increased, primarily due to higher corporate banking-related revenue and equity underwriting revenue, partially offset by lower net securities gains and advisory revenue, as well as markdowns on the held-for-sale loan portfolio.

Corporate Services
Revenue decreased $114 million from 2019, primarily due to lower treasury-related revenue, reflecting the impact of elevated levels of customer deposits.

Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Reported and adjusted insurance claims, commissions and changes in policy benefit liabilities (CCPB) were $1,708 million in 2020, compared with reported CCPB of $2,709 million and adjusted CCPB of $2,684 million in the prior year. Adjusted CCPB excluded the $25 million net impact of major reinsurance claims in the prior year. CCPB decreased, primarily due to lower increases in the fair value of policy benefit liabilities in 2020 as a result of a smaller decrease in long-term interest rates compared with 2019, lower annuity sales, lower underlying business growth and weaker equity markets. The decrease related to the fair value of policy benefit liabilities was largely offset in revenue.

Provision for Credit Losses

The total provision for credit losses was $2,953 million in 2020, an increase of $2,081 million from $872 million in 2019. The provision for credit losses on impaired loans was $1,522 million in 2020, an increase of $771 million from $751 million in 2019, reflecting higher provisions in all of our businesses, primarily due to the economic impact of the COVID-19 pandemic. There was a $1,431 million provision for credit losses on performing loans in 2020, an increase of $1,310 million from $121 million in 2019. The increase in the provision for credit losses on performing loans in 2020 largely reflected the impact of the COVID-19 pandemic on the macroeconomic outlook and the impact of a more difficult and uncertain environment on credit conditions, as well as a more severe adverse scenario and an increase in the adverse scenario weighting.

Non-Interest Expense

Non-interest expense was $14,177 million in 2020, a decrease of $453 million from 2019, primarily due to the impact of the $484 million ($357 million after-tax) restructuring charge in 2019. Adjusted non-interest expense in 2020 was $14,042 million, relatively unchanged from 2019, with the benefits of a disciplined approach to expense management, including the net impact of the COVID-19 pandemic on expenses, and lower employee-related expenses largely offsetting higher premises and equipment costs. Adjusted non-interest expense excluded the restructuring charge in 2019, as well as the amortization of acquisition-related intangible assets and acquisition integration costs in both 2020 and 2019. The amortization of acquisition-related intangible assets was $121 million and $128 million in 2020 and 2019, respectively, and acquisition integration costs were $14 million and $13 million in 2020 and 2019, respectively.

Provision for Income Taxes

The provision for income taxes was $1,251 million in 2020, compared with $1,514 million in 2019. The effective tax rate in 2020 was 19.7%, compared with 20.8% in 2019. The adjusted provision for income taxes was $1,282 million in 2020, compared with $1,673 million in 2019. The adjusted effective tax rate in 2020 was 19.8%, compared with 21.1% in 2019. The lower effective tax rate and adjusted effective tax rate in 2020 were due to earnings mix, including lower pre-tax income.

For further information on non-GAAP amounts, measures and ratios in this 2020 Financial Performance Review section, refer to the Non-GAAP and Other Financial Measures section.

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Financial Condition Review

Summary Balance Sheet

(Canadian $ in millions) As at October 31	2021	2020	2019
Assets			
Cash and interest bearing deposits with banks	**101,564**	66,443	56,790
Securities	**232,849**	234,260	189,438
Securities borrowed or purchased under resale agreements	**107,382**	111,878	104,004
Net loans	**458,262**	447,420	426,984
Derivative instruments	**36,713**	36,815	22,144
Other assets	**51,405**	52,445	52,835
Total assets	**988,175**	949,261	852,195
Liabilities and Equity			
Deposits	**685,631**	659,034	568,143
Derivative instruments	**30,815**	30,375	23,598
Securities lent or sold under repurchase agreements	**97,556**	88,658	86,656
Other liabilities	**109,757**	106,185	115,727
Subordinated debt	**6,893**	8,416	6,995
Equity	**57,523**	56,593	51,076
Total liabilities and equity	**988,175**	949,261	852,195

Certain comparative figures have been reclassified to conform with the current year's presentation.

Overview

Total assets of $988.2 billion increased $38.9 billion from October 31, 2020. The weaker U.S. dollar decreased assets by $30.6 billion, excluding the impact on derivative assets. Total liabilities of $930.7 billion increased $38.0 billion from the prior year. The weaker U.S. dollar decreased liabilities by $28.4 billion, excluding the impact on derivative liabilities. Total equity of $57.5 billion increased $0.9 billion from October 31, 2020.

Cash and Interest Bearing Deposits with Banks

Cash and interest bearing deposits with banks increased $35.1 billion, primarily due to higher balances held with central banks, driven by customer deposit growth in excess of loan growth, and a change in the mix of liquid assets, with lower securities borrowed or purchased under resale agreements and lower securities balances, partially offset by the impact of the weaker U.S. dollar.

Securities

(Canadian $ in millions) As at October 31	2021	2020	2019
Trading	**104,411**	97,834	85,903
Fair value through profit or loss (1)	**14,210**	13,568	13,704
Fair value through other comprehensive income – Debt and equity (2)	**63,123**	73,407	64,515
Amortized cost (3)	**49,970**	48,466	24,472
Investments in associates and joint ventures	**1,135**	985	844
Total securities	**232,849**	234,260	189,438

(1) Comprises $3,038 million mandatorily measured at FVTPL ($2,420 million as at October 31, 2020 and $2,899 million as at October 31, 2019) and $11,172 million designated at fair value ($11,148 million as at October 31, 2020 and $10,805 million as at October 31, 2019).
(2) Includes allowances for credit losses on debt securities recorded at fair value through other comprehensive income of $2 million as at October 31, 2021 ($4 million as at October 31, 2020 and $2 million as at October 31, 2019).
(3) Net of allowances for credit losses of $2 million ($1 million as at both October 31, 2020 and October 31, 2019).

Securities decreased $1.4 billion, as higher levels of client activity in BMO Capital Markets were more than offset by the impact of the weaker U.S. dollar and treasury activities in Corporate Services.

Securities Borrowed or Purchased Under Resale Agreements

Securities borrowed or purchased under resale agreements decreased $4.5 billion, primarily driven by a change in the mix of liquid assets, which included an increase in cash and interest bearing deposits with banks, and the impact of the weaker U.S. dollar, partially offset by higher balances in BMO Capital Markets as a result of client activity.

Net Loans

(Canadian $ in millions) As at October 31	2021	2020	2019
Residential mortgages	**135,750**	127,024	123,740
Non-residential mortgages	**17,195**	16,741	15,731
Consumer instalment and other personal	**77,164**	70,148	67,736
Credit cards	**8,103**	7,889	8,859
Businesses and government	**222,614**	228,921	212,768
Gross loans	**460,826**	450,723	428,834
Allowance for credit losses	**(2,564)**	(3,303)	(1,850)
Total net loans	**458,262**	447,420	426,984

Certain comparative figures have been reclassified to conform with the current year's presentation.

Net loans increased $10.8 billion. Residential mortgages increased $8.7 billion, with growth in Canadian P&C driven by an active housing market, partially offset by lower balances in U.S. P&C, including the impact of the weaker U.S. dollar. Consumer instalment and other personal loans increased $7.0 billion, with growth in the P&C businesses and BMO Wealth Management partially offset by the impact of the weaker U.S. dollar. Business and government loans decreased $6.3 billion, as growth in the P&C businesses was more than offset by the impact of the weaker U.S. dollar and lower balances in BMO Capital Markets, including the impact of declining balances in the non-Canadian energy portfolio. Non-residential mortgages increased $0.5 billion, due to growth in BMO Capital Markets and U.S. P&C, partially offset by the impact of the weaker U.S. dollar. Credit cards increased $0.2 billion, reflecting higher balances in Canadian P&C.

Table 7 in the Supplemental Information provides a comparative summary of loans by geographic location and product. Table 9 provides a comparative summary of net loans in Canada by province and industry. Loan quality is discussed in the Credit Quality Information section, and further details on loans are provided in Notes 4, 6 and 24 of the consolidated financial statements.

Derivative Financial Assets

Derivative financial assets decreased $0.1 billion, due to a decrease in the fair value of interest rate and equity contracts, largely offset by an increase in the fair value of commodities and foreign exchange contracts. Further details on derivative financial assets are provided in Note 8 of the consolidated financial statements.

Other Assets

Other assets primarily includes customers' liability under acceptances, goodwill and intangible assets, precious metals, premises and equipment, current and deferred tax assets, accounts receivable and prepaid expenses. Other assets decreased $1.0 billion, due to a reduction in precious metals balances resulting from client activity in BMO Capital Markets, the impact of the weaker U.S. dollar and the write-down of goodwill related to the sale of our EMEA Asset Management business, partially offset by an increase in pension assets, as well as growth in insurance-related assets and customers' liability under acceptances. Certain comparative figures have been reclassified to conform with the current year's presentation. Further details on other assets are provided in Notes 11 and 12 of the consolidated financial statements.

Deposits

(Canadian $ in millions) As at October 31	**2021**	2020	2019
Banks	**26,611**	38,825	23,816
Businesses and government	**442,248**	400,679	343,157
Individuals	**216,772**	219,530	201,170
Total deposits	**685,631**	659,034	568,143

Deposits increased $26.6 billion. Business and government deposits increased $41.6 billion, reflecting growth in customer deposits across all operating groups and higher levels of funding requirements for client-driven activity in our trading businesses, partially offset by the impact of the weaker U.S. dollar. Deposits by banks decreased $12.2 billion, primarily due to Bank of Canada term repo funding maturities. Deposits by individuals decreased $2.8 billion, due to the impact of the weaker U.S. dollar and lower balances in U.S. P&C, partially offset by growth in BMO Wealth Management and Canadian P&C. Further details on the composition of deposits are provided in Note 13 of the consolidated financial statements and in the Liquidity and Funding Risk section.

Derivative Financial Liabilities

Derivative financial liabilities increased $0.4 billion, due to an increase in the fair value of equity and foreign exchange contracts, partially offset by a decrease in the fair value of interest rate and commodities contracts.

Securities Lent or Sold Under Repurchase Agreements

Securities lent or sold under repurchase agreements increased $8.9 billion, driven by higher levels of client activity in BMO Capital Markets, partially offset by the impact of the weaker U.S. dollar and Bank of Canada term repo funding maturities.

Other Liabilities

Other liabilities primarily include securities sold but not yet purchased, securitization and structured entities liabilities, acceptances, insurance-related liabilities and accounts payable. Other liabilities increased $3.6 billion, primarily reflecting an increase in securities sold but not yet purchased due to higher levels of client activity in BMO Capital Markets, and increases in cash collateral received, acceptances and insurance-related liabilities, partially offset by the impact of the weaker U.S. dollar and lower securitization liabilities.

Further details on the composition of other liabilities are provided in Note 14 of the consolidated financial statements.

Subordinated Debt

Subordinated debt decreased $1.5 billion from the prior year, reflecting redemptions, net of a new issuance. Further details on the composition of subordinated debt are provided in Note 15 of the consolidated financial statements.

Equity

(Canadian $ in millions) As at October 31	**2021**	2020	2019
Share capital			
Preferred shares and other equity instruments	**5,558**	6,598	5,348
Common shares	**13,599**	13,430	12,971
Contributed surplus	**313**	302	303
Retained earnings	**35,497**	30,745	28,725
Accumulated other comprehensive income	**2,556**	5,518	3,729
Total equity	**57,523**	56,593	51,076

Total equity increased $0.9 billion, with a $4.8 billion increase in retained earnings and a $0.2 billion increase in common shares, largely offset by a $3.0 billion decrease in accumulated other comprehensive income and a $1.0 billion decrease in preferred shares and other equity instruments. Retained earnings increased as a result of net income earned in the year, partially offset by dividends and distributions on other equity instruments. Accumulated other comprehensive income decreased, primarily due to the impact of higher interest rates on cash flow hedges and the impact of the weaker U.S. dollar on the translation of net foreign operations, partially offset by an improvement in the position of our pension and other employee future benefit plans due to an increase in the value of pension plan assets and the impact of higher interest rates on the pension liability. Preferred shares and other equity instruments decreased due to redemptions in the year.

The Consolidated Statement of Changes in Equity in the consolidated financial statements provides a summary of items that increase or reduce total equity, while Note 16 of the consolidated financial statements provides details on the components of, and changes in, share capital. Details on our enterprise-wide capital management practices and strategies can be found below.

Enterprise-Wide Capital Management

Capital Management

Objective

BMO is committed to a disciplined approach to capital management that balances the interests and requirements of shareholders, regulators, depositors, fixed income investors and rating agencies. Our objective is to maintain a strong capital position in a cost-effective structure that:

- Is appropriate given BMO's target regulatory capital ratios and internal assessment of required economic capital
- Underpins BMO's operating groups' business strategies
- Supports depositor, investor and regulator confidence, while building long-term shareholder value
- Is consistent with BMO's target credit ratings.

Framework



The principles and key elements of our capital management framework are outlined in our Capital Management Corporate Policy and in the annual capital plan, which includes the results of the comprehensive Internal Capital Adequacy Assessment Process (ICAAP).

ICAAP is an integrated process that involves the application of stress testing and other tools to evaluate capital adequacy on both a regulatory and an economic capital basis. The results of this process are used in the establishment of capital targets and the implementation of capital strategies that take into consideration the strategic direction and risk appetite of the enterprise. The capital plan is developed considering the results of ICAAP and in conjunction with the annual business plan, promoting alignment between business and risk strategies, regulatory and economic capital requirements and the availability of capital. Enterprise-wide stress testing and scenario analysis are conducted in order to assess the impact of various stress conditions on our risk profile and capital requirements. The capital management framework seeks to ensure that the bank is adequately capitalized given the risks it takes in the normal course of business, as well as under stress, and supports the determination of limits, targets and performance measures that are used to manage balance sheet positions, risk levels and capital requirements at both the consolidated entity and operating group levels. We evaluate assessments of actual and forecast capital adequacy against our capital plan throughout the year, and we update the plan to reflect changes in business activities, risk profile, the operating environment or regulatory expectations.

We allocate capital to operating groups in order to evaluate business performance, and we consider capital implications in our strategic, tactical and transactional decision-making. By allocating capital to operating groups, setting and monitoring capital limits and metrics, and measuring the groups' performance against these limits and metrics, we seek to optimize risk-adjusted return to shareholders, while maintaining a well-capitalized position. This approach aims to protect our stakeholders from the risks inherent in our various businesses, while still allowing the flexibility to deploy resources in support of the strategic growth activities of the operating groups.

Refer to the Enterprise-Wide Risk Management section for further discussion of the risks underlying our business activities.

Governance

The Board of Directors, either directly or in conjunction with its Risk Review Committee, provides ultimate oversight and approval of capital management, including the bank's Capital Management Corporate Policy framework, capital plan and capital adequacy assessments. The Board of Directors regularly reviews the bank's capital position and key capital management activities, and the Risk Review Committee reviews the capital adequacy assessment results determined by ICAAP. The Capital Management Committee provides senior management oversight, including the review of significant capital management policies, issues and activities and, along with the Risk Management Committee, the capital required to support the execution of our enterprise-wide strategy. Finance and Risk Management are responsible for the design and implementation of the corporate policies and frameworks related to capital and risk management, as well as the ICAAP. The Corporate Audit Division, as the third line of defence, verifies adherence to controls and identifies opportunities to strengthen the bank's processes. Refer to the Enterprise-Wide Risk Management Framework section for further discussion.

Regulatory Capital Requirements

Regulatory capital requirements for BMO are determined in accordance with guidelines issued by the Office of the Superintendent of Financial Institutions (OSFI), which are based on the Basel III framework developed by the Basel Committee on Banking Supervision (BCBS). The minimum risk-based capital ratios set out in OSFI's Capital Adequacy Requirements (CAR) Guideline are a 4.5% Common Equity Tier 1 (CET1) Ratio, 6% Tier 1 Capital Ratio and 8% Total Capital Ratio. In addition to the minimum capital requirements, OSFI also requires domestic systemically important banks (D-SIBs), including BMO, to hold Pillar 1 and Pillar 2 buffers, which are meant to be used as a normal first response in periods of stress. Pillar 1 buffers include a Capital Conservation Buffer of 2.5%, a D-SIB Common Equity Tier 1 surcharge of 1.0%, and a Countercyclical Buffer (which can range from 0% to 2.5%, depending on a bank's exposure to jurisdictions that have activated the buffer). The Domestic Stability Buffer (DSB), a Pillar 2 buffer that can range from 0% to 2.5%, is currently set at 2.5% as of October 31, 2021. The minimum Leverage Ratio set out in OSFI's Leverage Requirements (LR) Guideline is 3.0%. OSFI's capital requirements are summarized in the following table.

(% of risk-weighted assets or leverage exposures)	Minimum capital requirements	Pillar 1 Capital Buffers (1)	Domestic Stability Buffer (2)	OSFI capital requirements including capital buffers	BMO Capital and Leverage Ratios as at October 31, 2021
Common Equity Tier 1 Ratio	4.5%	3.5%	2.5%	10.5%	13.7%
Tier 1 Capital Ratio	6.0%	3.5%	2.5%	12.0%	15.4%
Total Capital Ratio	8.0%	3.5%	2.5%	14.0%	17.6%
Leverage Ratio	3.0%	na	na	3.0%	5.1%

(1) The minimum 4.5% CET1 Ratio requirement is augmented by 3.5% in Pillar 1 Capital Buffers, which can absorb losses during periods of stress. Pillar 1 Capital Buffers include a 2.5% Capital Conservation Buffer, a 1.0% Common Equity Tier 1 Surcharge for D-SIBs and a Countercyclical Buffer, as prescribed by OSFI (immaterial for the fourth quarter of 2021). If a bank's capital ratios fall within the range of this combined buffer, restrictions on discretionary distributions of earnings (such as dividends, share repurchases and discretionary compensation) would ensue, with the degree of such restrictions varying according to the position of the bank's ratios within the buffer range.

(2) OSFI requires all D-SIBs to maintain a DSB against Pillar 2 risks associated with systemic vulnerabilities. The DSB can range from 0% to 2.5% of total RWA and was set at 2.5% as at October 31, 2021. Breaches of the DSB will not result in a bank being subject to automatic constraints on capital distributions.

na – not applicable

Regulatory Capital and Total Loss Absorbing Capacity Ratios

The **Common Equity Tier 1 Ratio** reflects CET1 Capital divided by Risk-Weighted Assets (RWA).

The **Tier 1 Capital Ratio** reflects Tier 1 Capital divided by RWA.

The **Total Capital Ratio** reflects Total Capital divided by RWA.

The **Leverage Ratio** reflects Tier 1 Capital divided by leverage exposures (LE), which consist of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

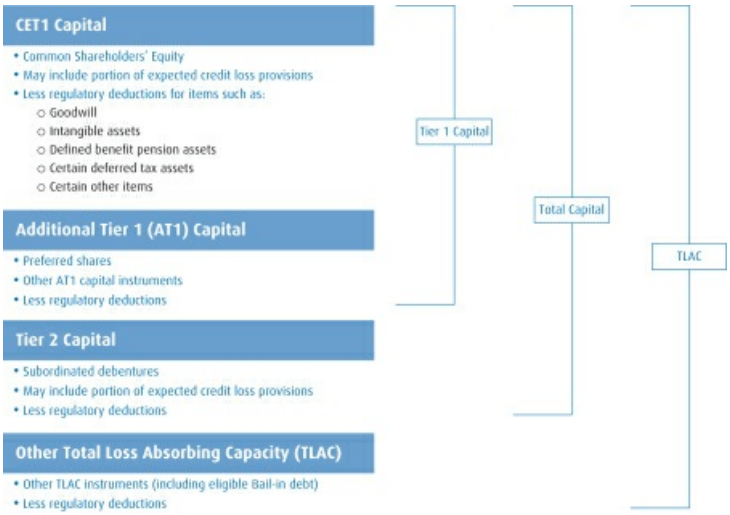
The **Total Loss Absorbing Capacity (TLAC) Ratio** reflects TLAC divided by RWA.

The **TLAC Leverage Ratio** reflects TLAC divided by LE.

Refer to the Glossary of Financial Terms for definitions of ratios and their components.

Regulatory Capital and Total Loss Absorbing Capacity Elements

BMO maintains a capital structure that is diversified across instruments and tiers to provide an appropriate mix of loss absorbency. The major components of regulatory capital and total loss absorbing capacity are summarized as follows:



OSFI's CAR Guideline implemented the non-viability contingent capital (NVCC) provisions set out by the BCBS, which require the conversion of certain capital instruments into a variable number of common shares in the event that OSFI announces that a bank is, or is about to become, non-viable, or if the federal or a provincial government in Canada publicly announces that the bank has accepted, or has agreed to accept, a capital injection or equivalent support to avoid non-viability.

Under OSFI's CAR Guideline, non-common share capital instruments that do not meet Basel III requirements, including NVCC requirements, will be fully phased out by 2022. The impact on the bank will be nominal.

Under Canada's Bank Recapitalization (Bail-In) Regime, eligible senior debt issued on or after September 23, 2018 is subject to statutory conversion requirements. Canada Deposit Insurance Corporation has the power to trigger the conversion of bail-in debt into common shares. This statutory conversion supplements NVCC securities, which must be converted, in full, prior to the conversion of bail-in debt. The minimum TLAC requirements set by OSFI are a risk-based TLAC Ratio of 24.0% of RWA, including a 2.5% DSB, and a TLAC Leverage Ratio of 6.75%, effective November 1, 2021. As at October 31, 2021, our TLAC Ratio was 27.8% and our TLAC Leverage Ratio was 9.3%, disclosed in accordance with OSFI's TLAC Guideline.

Risk-Weighted Assets

RWA measure a bank's exposures, weighted for their relative risk and calculated in accordance with OSFI's regulatory capital rules. RWA are calculated for credit, market and operational risks based on OSFI's prescribed rules.

We primarily use the Advanced Internal Ratings Based (AIRB) Approach to determine credit RWA in our portfolio. The AIRB Approach utilizes sophisticated techniques to measure RWA at the exposure level based on sound risk management principles, including estimates of the probability of default, the loss given default and exposure at default risk parameters, term to maturity and asset class type, as prescribed by the OSFI rules. These risk parameters are determined using historical portfolio data supplemented by benchmarking, as appropriate, and are updated periodically. Validation procedures related to these parameters are in place in order to quantify and differentiate risks appropriately. Credit RWA related to certain Canadian and U.S. portfolios are determined under the Standardized Approach, using prescribed risk weights based on external ratings, counterparty type or product type.

Our market risk RWA are primarily determined using the more advanced Internal Models Approach, but the Standardized Approach is used for some exposures.

Beginning in fiscal 2020, OSFI required BMO, along with the other banks that have been approved to use the Advanced Measurement Approach, to change to the Basel II Standardized Approach for determining enterprise operational risk regulatory capital requirements in the interim period prior to implementation of the new Basel III Standardized Measurement Approach, part of the Basel III reforms.

We are subject to a capital floor as prescribed in OSFI's CAR Guideline. In calculating regulatory capital ratios, there is a requirement to increase RWA when an amount calculated under the Standardized Approach (covering RWA and allowances) is higher than the result of a similar calculation under the more risk-sensitive modelled approach. The capital floor was not operative for the bank in fiscal 2021 and fiscal 2020.

Regulatory Capital Developments

Domestic Implementation of the Basel III Reforms

On March 11, 2021, OSFI restarted the implementation of the Basel III reforms by launching an industry consultation on proposed regulatory changes reflecting the latest and final round of Basel III reforms in its capital, leverage and related disclosure guidelines for banks. Proposals in the consultation include a three-year phase-in of the capital floor factor, starting at 65% in 2023 and increasing 2.5% per year to 72.5% in 2026, and a leverage ratio buffer for D-SIBs, set at 50% of the D-SIB Common Equity Tier 1 Surcharge, currently 1.0%, for a minimum Leverage Ratio requirement of 3.5% and a minimum TLAC Leverage Ratio requirement of 7.25% when the leverage ratio buffer comes into effect.

On June 18, 2021, OSFI launched an industry consultation on proposed regulatory changes to the treatment of credit valuation adjustments (CVA) and market risk hedges of other valuation adjustments, as part of the ongoing Basel III reforms.

On November 29, 2021, OSFI announced a deferral in the timing for the domestic implementation of the final Basel III reforms and changes to Pillar 3 disclosure requirements by one quarter from the first quarter to the second quarter of fiscal 2023.

COVID-19 Related Modifications

As part of a coordinated effort by federal agencies to address the market disruptions posed by the COVID-19 pandemic, OSFI announced a suite of modifications to capital requirements, effective the second quarter of 2020, to afford institutions further flexibility in addressing the disruptions, while promoting financial resilience and economic stability. During fiscal 2021, OSFI has either unwound, or provided guidance on the unwinding, of these temporary modifications.

Regulatory Expectations on Dividend Increases and Share Repurchases

Effective November 4, 2021, OSFI announced that institutions may resume regular dividend increases and common share repurchases that have been restricted since March 13, 2020.

Leverage Ratio

On August 12, 2021, OSFI confirmed that the temporary exclusion of sovereign-issued securities from the leverage ratio exposure measure for deposit-taking institutions (DTIs) will end on December 31, 2021. Central bank reserves will continue to be excluded.

Domestic Stability Buffer
On June 17, 2021, OSFI set the level of the Domestic Stability Buffer (DSB) at 2.5%, an increase from 1.0%, effective October 31, 2021. The increase reflects OSFI's view that key vulnerabilities, such as household and corporate debt levels, remain elevated and in some cases have increased since March 2020, while the economic and market disruptions stemming from the COVID-19 pandemic have abated and banks' capital levels have remained resilient.

Stressed Value-at-Risk (VaR) Multipliers under Market Risk
Effective May 1, 2021, the SVaR multiplier for market risk capital requirements, which was temporarily reduced to a minimum value of one, returned to the pre-pandemic minimum value of three.

Government of Canada's Highly Affected Sectors Credit Availability Program
On January 27, 2021, OSFI advised that loans to businesses through the Government of Canada's Highly Affected Sectors Credit Availability Program (HASCAP) can be treated as exposures to the Government of Canada. DTIs must include the entire amount of the loan in the leverage ratio calculation.

Regulatory Capital Review

BMO is well capitalized, with capital ratios that exceed OSFI's published requirements for large Canadian banks, including a 2.5% DSB. Our CET1 Ratio was 13.7% as at October 31, 2021, compared with 11.9% as at October 31, 2020. The CET1 Ratio increased from the end of fiscal 2020, primarily driven by strong internal capital generation.

Our Tier 1 Capital and Total Capital Ratios were 15.4% and 17.6%, respectively, as at October 31, 2021, compared with 13.6% and 16.2%, respectively, as at October 31, 2020. The Tier 1 Capital and Total Capital Ratios were higher, primarily due to the factors impacting the CET1 Ratio, partially offset by the redemptions of Additional Tier 1 and Tier 2 capital instruments, respectively.

The impact of foreign exchange rate movements on capital ratios was largely offset. Our investments in foreign operations are primarily denominated in U.S. dollars, and the foreign exchange impact of U.S.-dollar-denominated RWA and capital deductions may result in variability in the bank's capital ratios. We may manage the impact of foreign exchange rate movements on our capital ratios, and did so during fiscal 2021. Any such activities could also impact BMO's book value and return on equity.

Our Leverage Ratio was 5.1% as at October 31, 2021, an increase from 4.8% as at October 31, 2020, as higher Tier 1 Capital was partially offset by higher leverage exposures. Leverage exposures increased from the prior year, driven by business growth, partially offset by the impact from foreign exchange rate movements.

While the ratios discussed above reflect our consolidated capital base, we conduct business through a variety of corporate structures, including subsidiaries. A framework is in place such that capital and funding are managed appropriately at the subsidiary level.

As a U.S. bank intermediate holding company classified as a Category IV institution, our subsidiary BMO Financial Corp. (BFC) is subject to the Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act Stress Test (DFAST) requirements of the Federal Reserve Board (FRB) on a biennial basis, beginning with CCAR 2020.

BFC elected to participate in the FRB's 2021 CCAR exercise, even though it was not required to as a Category IV institution. On June 24, 2021, the FRB released its 2021 CCAR and DFAST results, and on August 5, 2021, announced individual large bank capital requirements, which were effective October 1, 2021. The capital requirement for BFC determined by the FRB was a CET1 Ratio of 7.5%, including the 4.5% minimum CET1 Ratio and a 3.0% stress capital buffer (SCB), which is significantly reduced from the previous 6.0%. BFC is well capitalized, with a strong CET1 Ratio of 13.9% as at September 30, 2021.

Regulatory Capital [1]

(Canadian $ in millions)

As at October 31	2021	2020
Common Equity Tier 1 Capital: instruments and reserves		
Directly issued qualifying common share capital plus related stock surplus	**13,912**	13,732
Retained earnings	**35,497**	30,745
Accumulated other comprehensive income (and other reserves)	**2,556**	5,518
Goodwill and other intangibles (net of related tax liability)	**(7,130)**	(8,402)
Other common equity Tier 1 capital deductions	**(344)**	(1,516)
Common Equity Tier 1 Capital (CET1)	**44,491**	40,077
Additional Tier 1 Capital: instruments		
Directly issued qualifying Additional Tier 1 instruments plus related stock surplus	**5,558**	5,558
Directly issued capital instruments subject to phase-out from Additional Tier 1 Capital	**–**	290
Additional Tier 1 instruments (and CET1 instruments not otherwise included) issued by subsidiaries and held by third parties (amount allowed in group AT1)	**–**	–
of which: instruments issued by subsidiaries subject to phase-out	**–**	–
Total regulatory adjustments applied to Additional Tier 1 Capital	**(83)**	(85)
Additional Tier 1 Capital (AT1)	**5,475**	5,763
Tier 1 Capital (T1 = CET1 + AT1)	**49,966**	45,840
Tier 2 Capital: instruments and provisions		
Directly issued qualifying Tier 2 instruments plus related stock surplus	**6,747**	8,270
Directly issued capital instruments subject to phase-out from Tier 2 Capital	**141**	146
Tier 2 instruments (and CET1 and AT1 instruments not otherwise included) issued by subsidiaries and held by third parties (amount allowed in group Tier 2)	**–**	–
of which: instruments issued by subsidiaries subject to phase-out	**–**	–
General allowance	**398**	458
Total regulatory adjustments to Tier 2 Capital	**(51)**	(53)
Tier 2 Capital (T2)	**7,235**	8,821
Total Capital (TC = T1 + T2)	**57,201**	54,661
Risk-Weighted Assets and Leverage Ratio Exposures		
Risk-Weighted Assets	**325,433**	336,607
Leverage Ratio Exposures	**976,690**	953,640
Capital Ratios (%)		
Common Equity Tier 1 Ratio	**13.7**	11.9
Tier 1 Capital Ratio	**15.4**	13.6
Total Capital Ratio	**17.6**	16.2
Leverage Ratio	**5.1**	4.8

(1) Disclosed in accordance with OSFI's CAR Guideline and LR Guideline, as applicableNon-qualifying Additional Tier 1 and Tier 2 Capital instruments are being phased out at a rate of 10% per year from January 1, 2013 to January 1, 2022.

Our CET1 Capital was $44.5 billion as at October 31, 2021, compared with $40.1 billion as at October 31, 2020. CET1 Capital increased, driven by retained earnings growth and a lower goodwill deduction due to the write-down in the second quarter of fiscal 2021 related to the sale of our EMEA Asset Management business, partially offset by a decline in accumulated other comprehensive income, primarily from the impact of foreign exchange rate movements.

Tier 1 Capital and Total Capital were $50.0 billion and $57.2 billion, respectively, as at October 31, 2021, compared with $45.8 billion and $54.7 billion, respectively, as at October 31, 2020. The increase in Tier 1 Capital was primarily due to the factors impacting CET1 Capital, partially offset by preferred share redemptions. Total Capital was higher, primarily due to the factors impacting Tier 1 Capital and an issuance of subordinated notes, which was partially offset by redemptions.

Risk-Weighted Assets

RWA were $325.4 billion as at October 31, 2021, a decrease from $336.6 billion as at October 31, 2020. Credit Risk RWA were $272.9 billion as at October 31, 2021, a decrease from $289.0 billion as at October 31, 2020, primarily due to positive asset quality changes and the impact of foreign exchange rate movements, partially offset by increased asset size. As noted above, the impact of foreign exchange rate movements is largely offset in the CET1 Ratio. Market Risk RWA were $12.1 billion as at October 31, 2021, an increase from $9.3 billion as at October 31, 2020, primarily attributable to the removal of OSFI's regulatory measures in response to the COVID-19 pandemic, as well as changes in portfolio composition during the year. Operational Risk RWA were $40.5 billion as at October 31, 2021, an increase from $38.3 billion as at October 31, 2020, primarily from growth in our average gross income.

(Canadian $ in millions) As at October 31	2021	2020
Credit Risk		
Wholesale		
Corporate, including specialized lending	**117,876**	131,396
Corporate small and medium-sized enterprises	**43,562**	45,121
Sovereign	**5,369**	6,259
Bank	**4,345**	4,264
Retail		
Residential mortgages, excluding home equity line of credit	**8,712**	9,275
Home equity line of credit	**5,241**	5,430
Qualifying revolving retail	**6,515**	5,917
Other retail, excluding small and medium-sized enterprises	**15,406**	14,507
Retail small and medium-sized enterprises	**9,544**	9,689
Equity	**3,741**	2,773
Trading book	**13,066**	15,567
Securitization	**4,570**	5,761
Other credit risk assets – non-counterparty managed assets	**22,587**	20,050
Scaling factor for credit risk assets under AIRB Approach (1)	**12,324**	12,908
Total Credit Risk	**272,858**	288,917
Market Risk	**12,066**	9,348
Operational Risk	**40,509**	38,342
Risk-Weighted Assets	**325,433**	336,607

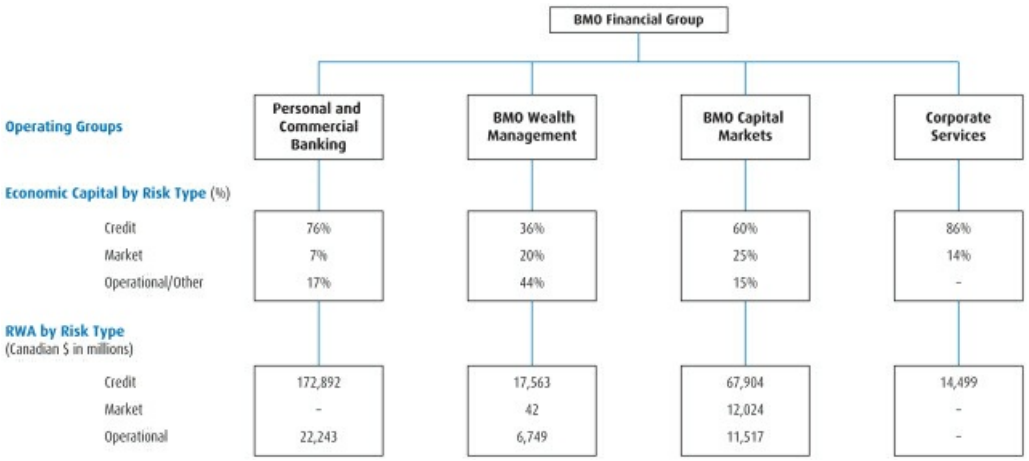
(1) The scaling factor is applied to RWA amounts for credit risk under the Advanced Internal Ratings Based (AIRB) Approach.

Economic Capital

Economic capital is an expression of the enterprise's capital demand requirement relative to its view of the economic risks in its underlying business activities. It represents management's estimation of the likely magnitude of economic losses that could occur should severely adverse situations arise. Economic loss is the loss in economic or market value incurred over a specified time horizon at a defined confidence level, relative to the expected loss over the same time horizon. Economic capital is calculated for various types of risk, including credit, market (trading and non-trading), operational, business and insurance, based on a one-year time horizon using a defined confidence level.

Economic Capital and RWA by Operating Group and Risk Type

(As at October 31, 2021)



Capital Management Activities

On December 3, 2021, we announced our intention, subject to the approval of OSFI and the Toronto Stock Exchange, to establish a new normal course issuer bid (NCIB) for up to 22.5 million common shares. The NCIB is a regular part of our capital management strategy. Once approvals are obtained, the share repurchase program will permit us to purchase BMO common shares for the purpose of cancellation. The timing and amount of purchases under the NCIB are subject to regulatory approvals and to management discretion, based on factors such as market conditions and capital levels. We will consult with OSFI before making purchases under the NCIB.

During fiscal 2021, we issued approximately 1.6 million common shares through the exercise of stock options.

During fiscal 2021, we completed Tier 1 and Tier 2 Capital instrument issuances and redemptions, as outlined in the table below.

Capital Instrument Issuances and Redemptions

(in millions) As at October 31, 2021	Issuance or redemption date	Number of shares	Amount
Common shares issued			
Stock options exercised		1.6	$ 122
Tier 1 Capital			
Redemption of Non-Cumulative Perpetual Class B Preferred Shares, Series 35	November 25, 2020	6.0	$ 150
Redemption of Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 36	November 25, 2020	0.6	$ 600
Redemption of Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 25	August 25, 2021	9.4	$ 236
Redemption of Non-Cumulative Floating Rate Class B Preferred Shares, Series 26	August 25, 2021	2.6	$ 54
Tier 2 Capital			
Redemption of Series H Medium-Term Notes, Second Tranche	December 8, 2020		$1,000
Redemption of Series I Medium-Term Notes, First Tranche	June 1, 2021		$1,250
Issuance of Series K Medium-Term Notes, First Tranche	July 22, 2021		$1,000

If an NVCC trigger event were to occur, NVCC capital instruments would be converted into BMO common shares pursuant to automatic conversion formulas, with a conversion price based on the greater of: (i) a floor price of $5.00; and (ii) the current market price of BMO common shares at the time of the trigger event (calculated using a 10-day weighted average). Based on a floor price of $5.00, these NVCC capital instruments would be converted into approximately 3.2 billion BMO common shares, assuming no accrued interest and no declared and unpaid dividends.

Further details on subordinated debt and share capital are provided in Notes 15 and 16 of the consolidated financial statements.

Outstanding Shares and NVCC Capital Instruments

As at October 31	Number of shares or dollar amount (in millions)	Dividends declared per share 2021	2020	2019
Common shares	648	**$ 4.24**	$ 4.24	$ 4.06
Class B Preferred shares				
Series 25 (1)	–	**$ 0.34**	$ 0.45	$ 0.45
Series 26 (1)	–	**$ 0.23**	$ 0.52	$ 0.70
Series 27*	$ 500	**$ 0.96**	$ 0.96	$ 0.98
Series 29*	$ 400	**$ 0.91**	$ 0.91	$ 0.96
Series 31*	$ 300	**$ 0.96**	$ 0.96	$ 0.95
Series 33*	$ 200	**$ 0.76**	$ 0.90	$ 0.95
Series 35* (2)	–	–	$ 1.25	$ 1.25
Series 36* (2)	–	–	$58.50	$58.50
Series 38*	$ 600	**$ 1.21**	$ 1.21	$ 1.21
Series 40*	$ 500	**$ 1.13**	$ 1.13	$ 1.13
Series 42*	$ 400	**$ 1.10**	$ 1.10	$ 1.10
Series 44*	$ 400	**$ 1.21**	$ 1.21	$ 1.44
Series 46*	$ 350	**$ 1.28**	$ 1.28	$ 0.77
Additional Tier 1 Capital Notes*				
4.8% Additional Tier 1 Capital Notes	US$ 500	**na**	na	na
4.3% Limited Recourse Capital Notes, Series 1 (3)	$ 1,250	**na**	na	na
Medium-Term Notes* (4)				
Series I – Second Tranche	$ 850	**na**	na	na
3.803% Subordinated Notes	US$ 1,250	**na**	na	na
4.338% Subordinated Notes	US$ 850	**na**	na	na
Series J – First Tranche	$ 1,000	**na**	na	na
Series J – Second Tranche	$ 1,250	**na**	na	na
Series K – First Tranche	$ 1,000	**na**	na	na
Stock options				
Vested	2.6			
Non-vested	3.1			

* Convertible into common shares.
(1) Redeemed in August 2021.
(2) Redeemed in November 2020.
(3) Convertible into common shares by virtue of recourse to the Preferred Shares Series 48. Refer to Note 16 of the consolidated financial statements for conversion details.
(4) Note 15 of the consolidated financial statements includes details on the NVCC Medium-Term Notes.
na – not applicable
Note 16 of the consolidated financial statements includes details on share capital and other equity instruments.

Dividends

Dividends declared per common share in fiscal 2021 totalled $4.24, unchanged from the prior year. Annual dividends declared represented 36.5% of reported net income and 32.6% of adjusted net income available to common shareholders on a last twelve-month basis.

Our target dividend payout range (common share dividends as a percentage of net income available to shareholders, less preferred share dividends and distributions on other equity instruments, based on earnings over the last twelve months) is 40% to 50%, providing shareholders with a competitive dividend yield. Our target dividend payout range seeks to provide shareholders with stable income, while retaining sufficient earnings to support anticipated business growth, fund strategic investments and support capital adequacy. OSFI's restriction on dividend increases effective March 13, 2020 remained in place throughout the year. Effective November 4, 2021, OSFI advised that institutions may resume regular dividend increases and common share repurchases.

At year-end, our common shares provided a 3.2% annualized dividend yield based on the year-end closing share price. On December 3, 2021, we announced that the Board of Directors had declared a quarterly dividend on common shares of $1.33 per share, an increase of $0.27 per share or 25% from the prior quarter and prior year. The dividend is payable on February 28, 2022 to shareholders of record on February 1, 2022.

Shareholder Dividend Reinvestment and Share Purchase Plan

Common shareholders may elect to have their cash dividends reinvested in common shares of BMO, in accordance with the Shareholder Dividend Reinvestment and Share Purchase Plan (DRIP).

During fiscal 2021, common shares to supply the DRIP were purchased on the open market. In the first and second quarters of fiscal 2020, common shares to supply the DRIP were purchased on the open market. In the third and fourth quarters of fiscal 2020, common shares to supply the dividend reinvestment feature of the DRIP were issued from treasury at a 2% discount from their then-current market price.

Eligible Dividends Designation

For the purposes of the *Income Tax Act (Canada)* and any similar provincial and territorial legislation, BMO designates all dividends paid or deemed to be paid on both its common and preferred shares as "eligible dividends", unless indicated otherwise.

Caution

This Enterprise-Wide Capital Management section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Off-Balance Sheet Arrangements

We enter into a number of off-balance sheet arrangements in the normal course of operations, which include Structured Entities (SEs), Credit Instruments and Guarantees.

Structured Entities and Securitization

We carry out certain business activities through arrangements involving SEs, using them to obtain sources of liquidity by securitizing certain of our financial assets, secure customer transactions, or pass our credit risk to holders of the vehicles' securities. For example, we enter into transactions with SEs in which we transfer assets, including mortgage loans, mortgage-backed securities, credit card loans, real estate lines of credit, auto loans and equipment loans, in order to obtain alternate sources of funding or as part of our trading activities. Note 6 of the consolidated financial statements describes the loan securitization activities carried out through third-party programs such as the Canada Mortgage Bond Program. Note 7 of the consolidated financial statements provides further details of our interests in both consolidated and unconsolidated SEs. Under IFRS, we consolidate a SE if we control the entity. We consolidate our own securitization vehicles and certain capital and funding vehicles. We do not consolidate our Canadian customer securitization vehicles, certain capital vehicles, various BMO-managed funds or various other structured entities where investments are held. Effective October 31, 2021, we concluded that we no longer control our U.S. Customer Securitization Vehicle and have therefore deconsolidated this vehicle. Further details on U.S. and Canadian customer securitization vehicles are provided below.

BMO-Sponsored Securitization Vehicles

We sponsor various vehicles that fund assets originated either by us (which are then securitized through a bank securitization vehicle) or by our customers (which are then securitized through three Canadian customer securitization vehicles and one U.S. customer securitization vehicle). The bank earns fees for providing services related to these customer securitization vehicles, including liquidity, distribution and financial arrangement fees for supporting the ongoing operations of the vehicles. These fees totalled approximately $132 million in 2021 ($117 million in 2020).

Canadian Customer Securitization Vehicles

The customer securitization vehicles we sponsor in Canada provide customers with access to financing either from us or from the asset-backed commercial paper (ABCP) markets. Customers sell either their assets or an interest in their assets into these vehicles, which then issue ABCP to either investors or us in order to fund the purchases. The sellers remain responsible for servicing the transferred assets and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO.

Our exposure to potential losses arises from the purchase of ABCP issued by the vehicles, any related derivative contracts entered into with the vehicles, and the liquidity support provided to the market-funded vehicles. We use the credit adjudication process in deciding whether to enter into these arrangements, just as when extending credit in the form of a loan.

Two of these customer securitization vehicles are market-funded, while the third is funded directly by the bank. We do not control these entities and therefore they are not consolidated. Further information on the consolidation of customer securitization vehicles is provided in Note 7 of the consolidated financial statements. No losses were recorded on any of our exposures to these vehicles in 2021 and 2020.

The market-funded vehicles had a total of $3.6 billion of ABCP outstanding as at October 31, 2021 ($4.7 billion in 2020). The ABCP issued by the market-funded vehicles is rated R-1(high) by DBRS and P1 by Moody's. Our purchases of ABCP, as distributing agent of ABCP issued by the market-funded vehicles, totalled $24 million during the year ended October 31, 2021 ($75 million in 2020).

We provide committed liquidity support facilities for the market-funded vehicles totalling $4.8 billion as at October 31, 2021 ($5.6 billion in 2020). This amount comprises part of the commitments outlined in Note 24 of the consolidated financial statements. All of these facilities remain undrawn. The assets of each of these market-funded vehicles consist primarily of exposure to diversified pools of Canadian automobile-related receivables and Canadian insured and conventional residential mortgages. These two asset classes represent 62% (76% in 2020) of the aggregate assets of these vehicles.

U.S. Customer Securitization Vehicle

We sponsor one market-funded customer securitization vehicle in the United States that provides customers with access to financing in the U.S. ABCP market. Customers sell either their assets or an interest in their assets into this vehicle, which then issues ABCP to investors in order to fund the purchases. The sellers remain responsible for servicing the assets involved in the related financing and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO.

Our exposure to potential losses arises from the purchase of ABCP issued by the vehicle, any related derivative contracts entered into with the vehicle, and the liquidity support provided to the vehicle. We use the credit adjudication process in deciding whether to enter into these arrangements, just as when extending credit in the form of a loan. No losses were recorded on any of our exposures to the vehicle in 2021 and 2020.

Effective October 31, 2021, we concluded that we no longer control this vehicle, and therefore deconsolidated this vehicle, as our involvement has changed from principal to agent, as reflected primarily by the change in our exposure to its variable returns. We derecognized US$3,148 million ($3,896 million) of assets and US$2,967 million ($3,672 million) of liabilities from our consolidated balance sheet on loss of control. We concurrently recognized US$176 million ($218 million) in securities, representing the carrying value of our interest in the vehicle's ABCP (we held US$140 million as at October 31, 2020, which was previously eliminated upon consolidation), and US$5 million ($6 million) in other assets. No gain or loss was recognized in our consolidated income statement as a result of deconsolidating this vehicle. Further information on the consolidation of customer securitization vehicles is provided in Note 7 of the consolidated financial statements.

The vehicle had US$3.1 billion of ABCP outstanding as at October 31, 2021 (US$2.5 billion in 2020). The ABCP issued by the vehicle is rated A1 by S&P and P1 by Moody's.

We provide committed liquidity support facilities to the vehicle, with the undrawn amount totalling US$6.5 billion as at October 31, 2021 (US$5.5 billion in 2020). This amount comprises part of the commitments outlined in Note 24 of the consolidated financial statements. The assets of this vehicle consist primarily of exposure to diversified pools of U.S. automobile-related receivables and equipment loans and leases. These two asset classes represent 82% (85% in 2020) of the aggregate assets of the vehicle.

Credit Instruments

In order to meet the financial needs of our clients, we use a variety of off-balance sheet credit instruments. These include guarantees and standby letters of credit, which represent our obligation to make payments to third parties on behalf of a customer if the customer is unable to make the required payments or meet other contractual requirements. We also write documentary and commercial letters of credit, which represent agreements to honour drafts presented by a third party upon completion of specified activities. Commitments to extend credit are off-balance sheet arrangements that represent our commitment to customers to grant them credit in the form of loans or other financings for specific amounts and maturities, subject to meeting certain conditions.

There are a large number of credit instruments outstanding at any time. Our customers are broadly diversified, and we do not anticipate events or conditions that would cause a significant number of customers to fail to perform in accordance with the terms of their contracts. We use the credit adjudication process in deciding whether to enter into these arrangements, just as when extending credit in the form of a loan. We monitor off-balance sheet credit instruments in order to avoid undue concentrations in any geographic region or industry.

The maximum amount payable by BMO in relation to these credit instruments was approximately $202 billion as at October 31, 2021 ($209 billion in 2020). However, this amount is not representative of our likely credit exposure or the liquidity requirements for these instruments, as it does not take into account customer behaviour, which suggests that only a portion of customers would utilize the facilities related to these instruments, nor does it take into account any amounts that could be recovered under recourse and collateral provisions.

For the credit commitments outlined in the preceding paragraphs, in the absence of an event that triggers a default, early termination by BMO may result in a breach of contract.

Further information on these instruments can be found in Note 24 of the consolidated financial statements.

Guarantees

Guarantees include contracts under which we may be required to make payments to a counterparty based on changes in the value of an asset, liability or equity security that the counterparty holds. Contracts under which we may be required to make payments if a third party does not perform according to the terms of a contract, and contracts under which we provide indirect guarantees of indebtedness, are also considered guarantees. In the normal course of business, we enter into a variety of guarantees, including standby letters of credit, backstop and other liquidity facilities, and derivatives contracts or instruments (including, but not limited to, credit default swaps), as well as indemnification agreements.

The maximum amount payable by BMO in relation to these guarantees was approximately $40 billion as at October 31, 2021 ($31 billion in 2020). However, this amount is not representative of our likely exposure, as it does not take into account customer behaviour, which suggests that only a portion of the guarantees would require us to make any payments, nor does it take into account any amounts that could be recovered under recourse and collateral provisions.

For a more detailed discussion of these arrangements, refer to Note 24 of the consolidated financial statements.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Caution

This Off-Balance Sheet Arrangements section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Enterprise-Wide Risk Management

As a diversified financial services company providing banking, wealth management, capital markets and insurance services, BMO is exposed to a variety of risks that are inherent in its business activities. A disciplined and integrated approach to managing risk is fundamental to the success of its operations. Our risk management framework provides independent risk oversight across the enterprise and is integral to building competitive advantage.

Enterprise-Wide Risk Management outlines BMO's approach to managing the key financial risks and other related risks that it faces, as discussed in the following sections:

74	Risks That May Affect Future Results	97	Liquidity and Funding Risk
78	Risk Management Overview	106	Operational Non-Financial Risk
78	Enterprise-Wide Risk Management Framework	109	Legal and Regulatory Risk
84	Credit and Counterparty Risk	111	Strategic Risk
92	Market Risk	111	Environmental and Social Risk
97	Insurance Risk	113	Reputation Risk

Text and tables presented in a blue-tinted font in the Enterprise-Wide Risk Management section of the MD&A form an integral part of the 2021 audited annual consolidated financial statements. They present required disclosures as set out by the International Accounting Standards Board in IFRS 7, *Financial Instruments – Disclosures*, which permits cross-referencing between the notes to the consolidated financial statements and the MD&A. Refer to Note 1 and Note 5 of the consolidated financial statements.

Risks That May Affect Future Results

Top and Emerging Risks That May Affect Future Results

BMO is exposed to a variety of evolving internal and external events which can have an impact on our overall risk profile. These events can have the potential to affect our business, the results of our operations and our financial condition. The integral tasks in the risk management process are to proactively identify, assess, manage, monitor and report on a broad spectrum of risks arising from these events. The identification of specific types of risk involves several forums for discussion with the Board of Directors, senior management and business thought leaders, and combines both bottom-up and top-down approaches. The assessment of risks is supported by scenario analysis and can inform the development of action plans related to our exposure to certain events.

Particular attention has been given to the following risks, reflecting their potential to materially impact the bank's financial results, strategic direction or reputation.

General Economic Conditions

Our earnings are affected by the general economic conditions prevailing in Canada, the United States and other jurisdictions in which we conduct business. In the past year, as global economies continue to recover from the effects of the COVID-19 pandemic, growth in real GDP in both Canada and the United States has been strong, although growth in Canadian GDP in the second quarter of 2021 was hampered by new public health restrictions. Businesses and individuals have benefitted from the support of government programs intended to lessen the economic impact of the pandemic, and these programs, along with a reopening of the economies, have resulted in positive credit migration. The recovery faces headwinds generated by ongoing disruptions to global supply chains, trade and travel, as well as price and wage inflation and labour market challenges. The emergence of new variants of the COVID-19 virus also poses a threat to economic recovery. While vaccine efficacy remains high against most COVID-19 variants, particularly in limiting more severe cases, vaccination rates in North America are below the level required for general immunity.

These factors, as well as rising geopolitical tensions (described in Geopolitical Risk and Escalating Trade Disputes below), could cause growth rates in North American economies to decline through the coming year. Management continues to review the economic environment in which we operate, to identify significant changes in key economic variables. In the event of a significant change in economic conditions, management will assess our portfolio and business strategies and develop contingency plans to address any adverse developments.

Cyber Security Risk

We are exposed to common banking security risks, given our ever-increasing reliance on internet and cloud technologies, coupled with the remote work environment and extensive dependence on advanced digital technologies to process data. Cyber security risks include the threat of data loss resulting in potential exposure of customer or employee information, identity theft and fraud. Ransomware or denial of service attacks could result in system failure and service disruption. Threat campaigns are becoming increasingly organized and sophisticated, with reported data breaches, often through third-party suppliers, that negatively impact the company's brand and reputation. BMO is keeping pace by investing in the Financial Crimes Unit and technological infrastructure. These include a state-of-the-art security hub and a "follow-the-sun" operating model, equipping our team to detect and address security threats across North America, Europe and Asia in order to keep our customers' and employees' data secure.

Benchmark Interest Rate Reform

Interbank offered rates (IBORs) have been the subject of numerous global regulatory proposals and reforms over the past few years. Most significantly, the U.K. Financial Conduct Authority (FCA) has announced that it will no longer compel banks to submit to the London Interbank Offered Rate (LIBOR) after 2021. As a result, the industry must transition from LIBOR and other IBORs to alternative reference rates (ARRs) in multiple jurisdictions, a shift that will impact financial market participants globally across many products and asset classes.

Transition efforts in connection with these reforms are complex, with significant risks and challenges that could result in increased volatility, pricing changes or illiquidity in markets for instruments that currently rely on IBORs. The transition could have adverse consequences for all market participants, including BMO as both a holder and an issuer of IBOR-based instruments, such as the potential for heightened exposure to financial, operational non-financial, legal and regulatory, and reputation risks.

BMO has established an enterprise IBOR Transition Office (ITO) to coordinate and oversee the transition from IBORs to ARRs, with a focus on managing and mitigating internal risks, while maintaining a positive client experience. The ITO, sponsored and supported by senior management, is responsible for running the enterprise-wide transition program across all lines of business and corporate areas. The ITO has a global mandate to properly prepare BMO for the discontinuation or unavailability of LIBOR and other IBORs.

As part of its mandate, the ITO is tracking client, industry and regulatory engagement, financial contract changes, internal and external communications, technology and operations modifications, introduction of new products, migration of existing clients, and program strategy and governance. In addition, the ITO continues to monitor the development and usage of ARRs across the industry, including the Secured Overnight Financing Rate (SOFR). As the market has developed, we have begun to add ARR-based products to our suite of offerings.

On March 5, 2021, the FCA confirmed that LIBOR settings will no longer be provided by any administrator after December 31, 2021 for all sterling, euro, Swiss franc and Japanese yen settings, as well as the one-week and two-month USD LIBOR settings. The remaining USD LIBOR settings will no longer be provided after June 30, 2023. The extension of certain USD LIBOR settings to June 30, 2023 applies only to legacy contracts, with new issuances transitioning from LIBOR and other IBORs to alternative reference rates by December 31, 2021. This announcement followed the completion of the ICE Benchmark Administration consultation regarding the process and timing for the orderly wind-down of LIBOR for legacy contracts. The ITO has adjusted the project plan accordingly to align with these extended timelines, and continues to monitor changes and updates from regulators and industry working groups in order to facilitate a smooth and timely transition for BMO and its clients.

Technology Resiliency

We continue to innovate and invest in enhancing our technological capabilities in order to keep customers' data secure and to meet and exceed their expectations, as the adoption of digital banking continues to grow. In addition to existing technology risks, the COVID-19 pandemic has introduced new challenges, as our customers, employees and suppliers have come to rely on technology platforms and the Internet of Things to manage and support their personal, business and investment banking activities. Given the extent to which BMO's operations rely on technology, it is important to maintain platforms that provide high levels of operational reliability and resiliency, particularly with respect to business-critical systems. Technology innovations, such as advanced data management, analytical tools and artificial intelligence, are being leveraged to provide insights that will improve the way we do business and serve our customers.

Geopolitical Risk and Escalating Trade Disputes

Geopolitical risk remains elevated as a result of strained relations among many countries, including the United States and China and Iran. Heightened geopolitical risk can give rise to shifts in global capital flows, which may lead to market disruptions and lower levels of investment, trade and global economic growth. Our core banking portfolio has limited direct exposure outside North America; however, our core customers depend on sustained economic growth and trade. To mitigate exposure to geopolitical risk, we maintain a diversified portfolio that is continually monitored and tested, in addition to contingency plans that we may establish to address any possible adverse developments.

Rising protectionism and anti-globalization sentiment in the United States and other countries have compounded supply-chain disruptions, and may hinder global growth. In particular, despite the Phase One trade agreement between the United States and China reached in early 2020, trade tensions between the two countries have remained elevated, which could adversely affect business investment and could prove especially problematic for commodity-producing countries such as Canada. Trade disputes have also arisen between Canada and China over the past several years. Within North America, the Canada-United States-Mexico Agreement (CUSMA) has reduced, but not eliminated, uncertainty about continental trading arrangements and disputes between those nations.

Although it is difficult to predict and mitigate the potential economic and financial effects of trade-related events on the Canadian and U.S. economies, we actively monitor global and North American trends and continually assess our businesses in the context of these trends. We stress test our portfolios, business plans and capital adequacy against severely adverse scenarios arising from trade-related shocks, and we establish contingency plans and mitigation strategies to address and offset the consequences of possible adverse political and economic developments.

BMO's credit exposure by geographic region is set out in Tables 7, 8 and 11 to 13 in the Supplemental Information and in Note 4 of the consolidated financial statements.

Climate Change and Other Environmental and Social Risks

BMO faces risks related to environmental events and extreme weather conditions that could potentially disrupt our operations, impact customers and counterparties, and result in lower earnings and higher losses. Factors contributing to heightened environmental risks include the impacts of climate change and the continued intensification of development in areas of greater environmental sensitivity. Business continuity management plans provide us with the capability to restore, maintain and manage critical operations and processes in the event of a business disruption.

BMO also faces risks related to borrowers that experience losses or increases in their operating costs as a result of climate-related litigation or policies, such as carbon emissions pricing, or that experience lower revenue as new and emerging technologies disrupt or displace demand for certain commodities, products and services. We are playing an active role in helping our clients transition to a net zero world, in part through our new BMO Climate Institute and our dedicated Energy Transition Group.

BMO supports the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), and employs the TCFD framework to enhance its understanding and disclosure of the evolving impact of risks associated with climate change, together with possible mitigation strategies. In October 2021, we joined the Net-Zero Banking Alliance, an industry-led global initiative to support and accelerate concerted efforts to address climate change, facilitating collaborative approaches between the public and private sectors. We continue to build our internal capacity to conduct climate change scenario analysis in line with the TCFD recommendations, and we are expanding this program to evaluate both physical and transition risks across a selection of climate-sensitive portfolios. These efforts will help identify potential material financial risks and will inform our business strategy in relation to climate change going forward.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Legal and regulatory, business or reputation risks could arise from actual or perceived actions, or inaction, in our operations and those of our customers in relation to climate change and other environmental and social risk issues, or our disclosures related to these matters. Risks related to these issues could also affect our customers, suppliers or other stakeholders, which could heighten business or reputation risks. Globally, climate-related litigation or enforcement measures could arise from new and more detailed obligations to manage and report climate-related risks.

Refer to the Environmental and Social Risk section for further discussion of these risks.

Canadian Housing Market and Consumer Leverage

Risks related to household debt and housing affordability have increased with a sharp rise in home prices as the housing market rebounded strongly in early 2021, following a decline in activity in the initial phase of the COVID-19 pandemic. The lower interest rate environment should underpin the continuing strong demand in housing markets. However, several factors, such as higher unemployment rates and limited affordability, could potentially weigh on sales activity and home prices in the future. The housing market is also at risk of a correction if prices continue to rise faster than incomes, especially when interest rates begin to move upward. In addition, the pandemic has the potential to drive permanent changes in consumer behaviours and preferences, as well as changes in how and where work is performed, including more widespread adoption of remote working arrangements. Such changes have the potential to cause structural shifts in the demand for housing based on geographic and other characteristics, and could affect the viability of income-generating investment properties. These changes could dampen sales activity, home prices and property values within the existing portfolio.

Household debt levels are at record highs, which could impede new borrowing and increase our exposure to risk across personal lending products. In addition, housing affordability continues to be a challenge, especially in the Greater Toronto Area (GTA) and Greater Vancouver Area (GVA) and their surrounding regions, which represents an ongoing barrier to entry for potential first-time home buyers. Moderately higher levels of unemployment will also weigh on household incomes, especially if current government support programs are wound down or eliminated, which would reduce overall household purchasing power. The heightened level of economic uncertainty could also cause households to continue to focus on building savings.

Potential reductions in home sales activity, particularly in the GTA and GVA, would impact mortgage origination volumes and, if property values were to decline, reduce the value of collateral backing loans, which could result in higher provisions for credit losses. It is not possible to accurately predict the full impact of recent economic and policy changes or any potential future changes, but BMO's prudent lending practices, which include the application of additional underwriting scrutiny on higher-value and higher loan-to-value transactions and the setting and close monitoring of regional, property type and customer segment concentration limits, support the soundness of the bank's Canadian real estate lending portfolio. Further, stress test analysis suggests that even significant price declines and extremely challenging economic conditions would result in manageable losses, mainly due to insurance coverage and the significant level of equity built up in seasoned loans.

Inflation

As the economic recovery from the COVID-19 pandemic continues, inflation rates have seen significant increases in North America, rising above the target ranges for the Bank of Canada and the Federal Reserve during 2021. A significant portion of the upward pressure on prices is attributable to the rising costs of energy, food, motor vehicles and housing, as well as the challenges involved in reopening the economy and persistent supply-chain disruptions. Inflation increases are expected to be largely transitory, assuming supply-chain disruptions ease and commodity prices moderate. However, a sustained upward trajectory in the inflation rate would have an impact on BMO's operations and our clients, and could impact our earnings due to higher provisions for credit losses and higher operating costs. We continue to monitor inflationary pressures in North America and assess any potential effects on our portfolios, interest margins and operating costs.

Other Factors That May Affect Future Results

Fiscal and Monetary Policies and Other Economic Conditions in the Countries in which BMO Conducts Business

BMO's earnings are affected by the fiscal and monetary policies and other economic conditions prevailing in Canada, the United States and other jurisdictions in which we do business. These policies and conditions may have the effect of reducing profitability and increasing uncertainty in specific businesses and markets, which may affect customers and counterparties, and potentially contribute to a greater risk of default. Changes in fiscal and monetary policies are difficult to anticipate. Higher levels of government and business debt resulting from the pandemic have the potential to create future vulnerabilities that could impact our markets and our business. Fluctuations in interest rates could have an impact on our earnings, the value of our investments, the credit quality of our loans to customers and counterparty exposure, and the capital markets that we access.

Changes in the value of the Canadian dollar relative to the U.S. dollar have affected, and could in the future continue to affect, the results of clients with significant foreign earnings or input costs. Our investments in foreign operations are primarily denominated in U.S. dollars, and the foreign exchange impact of U.S.-dollar-denominated risk-weighted assets and capital deductions may result in variability in our capital ratios. Refer to the Enterprise-Wide Capital Management section. The value of the Canadian dollar relative to the U.S. dollar will also affect the contribution of U.S. operations to Canadian-dollar profitability.

Hedging positions may be taken to manage interest rate exposures and partially offset the effects of Canadian dollar/U.S. dollar exchange rate fluctuations on the bank's financial results. Refer to the Foreign Exchange section and the Market Risk section for a more complete discussion of foreign exchange and interest rate risk exposures.

Regulatory Requirements

The financial services industry is highly regulated, and BMO has experienced changes and increasing complexity in regulatory requirements, as governments and regulators around the world continue to pursue major reforms intended to strengthen the stability of the financial system and protect key markets and participants. As a result, there is the potential for higher capital requirements and additional regulatory compliance costs, which could lower returns and affect growth. These reforms could also affect the cost and availability of funding and the extent of the bank's market-making activities. Regulatory reforms may also impact fees and other revenues for certain operating groups. In addition, differences in laws and regulations enacted by various national regulatory authorities may provide advantages to international competitors that could affect our ability to compete, and lead to loss of market share. We monitor such developments, and other potential changes, so that we are well-positioned to respond and implement any necessary changes.

Failure to comply with applicable legal and regulatory requirements could result in legal proceedings, financial losses, regulatory sanctions, enforcement actions, an inability to execute business strategies, a decline in investor and customer confidence, and damage to our reputation. Refer to the Legal and Regulatory Risk section for a more complete discussion of BMO's management of legal and regulatory risk.

Tax Legislation and Interpretations
Legislative changes and changes in tax policy, including their interpretation by tax authorities and the courts, may impact earnings. Tax laws, as well as interpretations of tax laws and policy by tax authorities, may change as a result of efforts by the Canadian federal government, other G20 governments, and the Organisation for Economic Co-operation and Development to increase taxes, broaden the tax base globally and improve tax-related reporting. Refer to the Critical Accounting Estimates section for further discussion of income taxes and deferred taxes.

Changes to Business Portfolio
BMO may, from time to time, acquire companies, businesses and assets as part of its overall business strategy. We conduct thorough due diligence before completing such acquisitions. However, some acquisitions may not perform in line with our financial or strategic objectives or expectations. Our ability to successfully complete an acquisition may be subject to regulatory and shareholder approvals, and it may not be possible to determine when, if or on what terms the necessary approvals will be granted. Changes in the competitive and economic environment, as well as other factors, may result in reductions in revenue or profitability, while higher than anticipated integration costs and failure to realize expected cost savings after an acquisition could also adversely affect earnings. Integration costs may increase as a result of regulatory costs related to an acquisition, other unanticipated costs that were not identified in the due diligence process, or demands on management time that are more significant than anticipated, as well as unexpected delays in implementing certain plans that in turn lead to delays in achieving full integration. Successful post-acquisition performance depends on retaining the clients and key employees of acquired companies and businesses and on integrating key systems and processes without disruption, and there can be no assurance that we will always succeed in doing so.

BMO also evaluates potential dispositions of assets and businesses that may no longer meet strategic objectives. When we sell assets or withdraw from a business, we may encounter difficulty in finding buyers or alternative exit strategies on acceptable terms or in a timely manner, which could delay the achievement of strategic objectives. We may also dispose of assets or a business on terms that are less desirable than anticipated or result in adverse operational or financial impacts, or greater disruption than expected, and the impact of the divestiture on revenue growth may be larger than projected. Dispositions may be subject to the satisfaction of conditions and the granting of governmental or regulatory approvals on acceptable terms, which, if not satisfied or obtained, may prevent the completion of a disposition as intended, or at all.

Critical Accounting Estimates and Accounting Standards
BMO prepares its consolidated financial statements in accordance with IFRS. Changes that the International Accounting Standards Board makes from time to time may materially affect the way we record and report financial results. Significant accounting policies and future changes in accounting policies are discussed in the Changes in Accounting Policies in 2021 and Future Changes in Accounting Policies sections, as well as in Note 1 of the consolidated financial statements.

The application of IFRS requires management to make significant judgments and estimates that affect the carrying amounts of certain assets and liabilities, certain amounts reported in net income, and other related disclosures. In making these judgments and estimates, we rely on the best information available at the time. However, it is possible that circumstances may change, new information may become available or models may prove to be imprecise.

BMO's financial results could be affected for the period during which any such new information or change in circumstances becomes apparent, and the extent of the impact could be significant. More information is included in the Critical Accounting Estimates section.

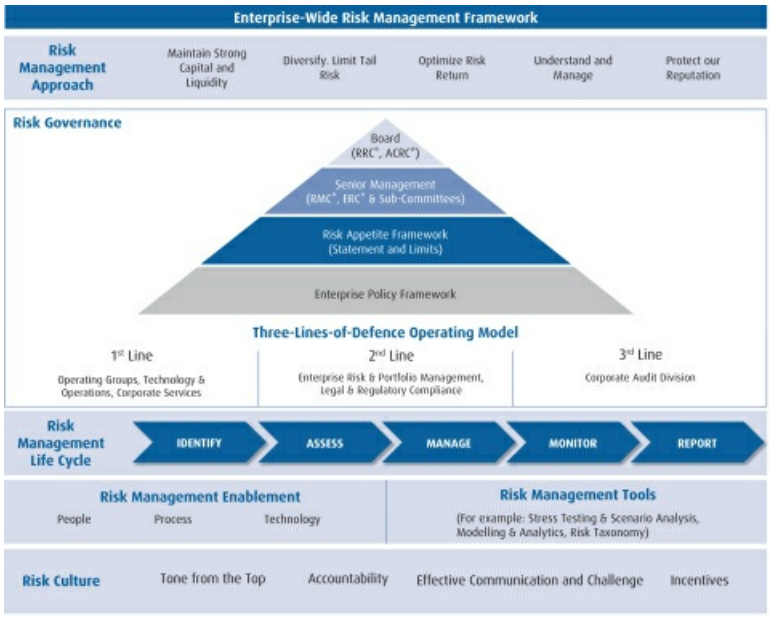
Caution
The Risks That May Affect Future Results section and the remainder of this Enterprise-Wide Risk Management section contain forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements. Other factors beyond BMO's control that may affect its future results are noted in the Caution Regarding Forward-Looking Statements. BMO cautions that the preceding discussion of risks that may affect future results is not exhaustive.

Risk Management Overview

BMO's integrated and disciplined approach to risk management is fundamental to the success of our business. Our Enterprise Risk and Portfolio Management (ERPM) group oversees the implementation and operation of the Enterprise-Wide Risk Management Framework (ERMF), and provides independent review and oversight across the enterprise on risk-related issues, in order to achieve prudent and measured risk-taking that is integrated with business strategy. All elements of the ERMF function together to support informed and effective risk management, while striking an appropriate balance between risk and return.

Enterprise-Wide Risk Management Framework

The ERMF guides risk-taking activities in order to align them with customer needs, shareholder expectations and regulatory requirements. The ERMF also sets out our approach to risk management: maintain strong capital and liquidity, diversify and limit tail risk, optimize risk return, understand and manage the risks we face, and protect our reputation. Our approach to risk governance is outlined in the ERMF, which incorporates our Risk Management Life Cycle, guiding our efforts to identify, assess, manage, monitor and report on our material risks. The ERMF is supported by our people, processes and technology, leveraging tools, including modelling and analytics, stress testing and scenario analysis, and our Risk Taxonomy. All elements of the ERMF are supported by our risk culture. The ERMF provides for the direct management of each individual risk type, as well as the management of risk on an integrated basis.



* RRC: Risk Review Committee, ACRC: Audit and Conduct Review Committee, RMC: Risk Management Committee, ERC: Enterprise Regulatory Committee

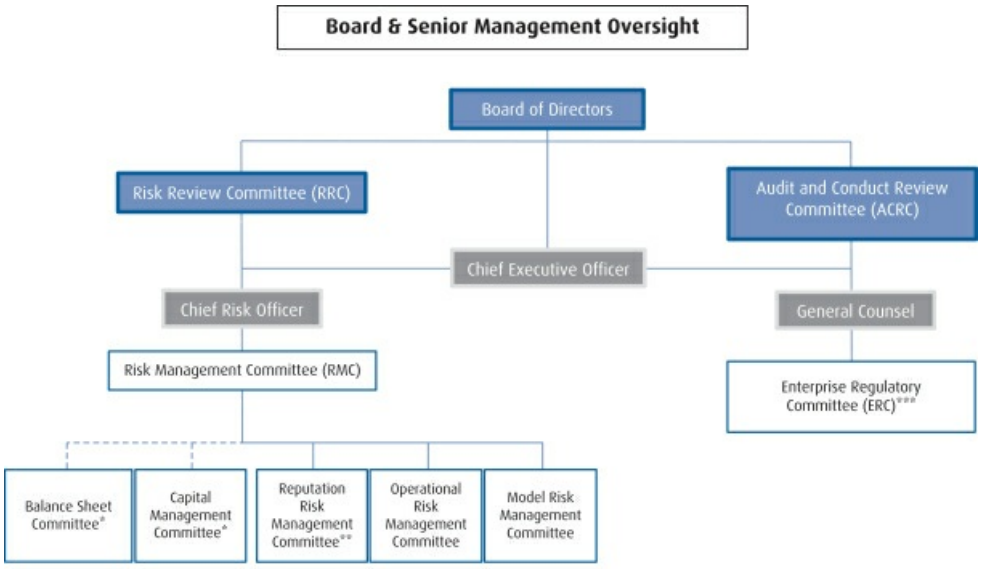
Risk Governance

The ERMF outlines a governance approach that includes robust Board of Directors and senior management oversight, a Risk Appetite Framework, the Enterprise Policy Framework and the corresponding roles in the three-lines-of-defence operating model.

Board of Directors and Senior Management Oversight

Specific Board-approved policies govern our approach to the management of material risks, and oversight is provided at all levels of the enterprise through a hierarchy of committees and individual responsibilities, as outlined in the following diagram. The Board seeks to ensure that corporate objectives are supported by a sound risk strategy and an effective ERMF that is appropriate to the nature, scale, complexity and risk profile of our operations. The Board also has overall responsibility for the bank's governance framework and corporate culture. Senior management reviews and discusses significant risk issues and action plans as they arise in the implementation of the enterprise-wide strategy, providing risk oversight and governance of the risks taken across the enterprise and the processes through which such risks are identified, assessed, managed (and mitigated), monitored and reported in accordance with policies, and held within limits and risk tolerances.

The ERMF is reviewed on a regular basis by the Risk Review Committee (RRC) of the Board, in order to provide oversight and guide risk-taking activities.



* The Balance Sheet Committee (BSC) and Capital Management Committee (CMC) are sub-committees of the Asset and Liability Management Committee (ALCO). However, in matters related to Structural Market Risk, Liquidity & Funding Risk, and the Internal Capital Adequacy Assessment Process (ICAAP), BSC and CMC report to RMC.

** Committee is chaired by the General Counsel.

*** Committee is co-chaired by the General Counsel and Chief Risk Officer.

In addition to the Board of Directors and senior management oversight, appropriate risk governance, supported by the three lines of defence, is in place in all material businesses and entities. In each of the operating groups and in Corporate Services, which includes Technology and Operations, management is the first line of defence, responsible for governance and controls, and the implementation and operation of risk management processes and procedures that provide effective risk management. ERPM and Legal & Regulatory Compliance, as the second line of defence, oversee the implementation and operation of risk management processes and procedures, and monitor and test risk outcomes against our risk appetite and management expectations, in order to determine whether risk outcomes are consistent with return expectations. Corporate Audit Division, as the third line of defence, provides independent assessment of the effectiveness of internal controls that support the risk management and governance processes. Individual governance committees establish and monitor further risk limits, consistent with Board-approved limits.

Board of Directors is responsible for supervising the management of the business and affairs of BMO. The Board, either directly or through its committees, is responsible for oversight in the following areas: strategic planning; defining risk appetite; identifying and managing risk; managing capital; fostering a culture of integrity; internal controls; succession planning and evaluation of senior management; communication; public disclosure; and corporate governance.

Risk Review Committee of the Board of Directors (RRC) assists the Board in fulfilling its risk management oversight responsibilities. This includes leading BMO's risk culture; overseeing the identification and management of BMO's risks; adherence by operating groups to risk management corporate policies and standards; compliance with risk-related regulatory requirements; and evaluating the Chief Risk Officer (CRO), including input into succession planning for the CRO. The ERMF is reviewed on a regular basis by the RRC in order to provide guidance for the governance of risk-taking activities.

Audit and Conduct Review Committee of the Board of Directors (ACRC) assists the Board in fulfilling its oversight responsibilities for the integrity of BMO's financial reporting; the effectiveness of BMO's internal controls; the qualifications, independence and performance of the independent auditors; BMO's compliance with laws and regulations; transactions involving related parties; conflicts of interest and confidential information; and standards of business conduct and ethics.

Chief Executive Officer (CEO) is directly accountable to the Board for all of BMO's risk-taking activities. The CEO is supported by the CRO and the ERPM group.

Chief Risk Officer (CRO) reports directly to the CEO and is head of ERPM and chair of RMC. The CRO is responsible for providing independent review and oversight of enterprise-wide risks and leadership on risk issues, developing and maintaining the RMF and fostering a strong risk culture across the enterprise.

Risk Management Committee (RMC) is BMO management's senior risk committee. RMC reviews and discusses significant risk issues and action plans as they arise in the implementation of the enterprise-wide strategy. RMC provides risk oversight and governance at the highest levels of management. This committee is chaired by the CRO, and its members include the heads of the operating groups, the CEO, the Chief Financial Officer (CFO) and the General Counsel.

RMC Sub-Committees have oversight responsibility for the risk implications and balance sheet impacts of management strategies, governance practices, risk measurement, model risk management and contingency planning. RMC and its sub-committees provide oversight of the risks taken across the enterprise and the processes through which such risks are identified, assessed, managed, monitored, mitigated and reported in accordance with policies, and held within limits and risk tolerances.

Enterprise Risk and Portfolio Management (ERPM), as the risk management second line of defence, provides risk management oversight, effective challenge and independent assessment of risk and risk-taking activities. ERPM supports a disciplined approach to risk-taking by fulfilling its responsibilities for independent transactional approval and portfolio management, policy formulation, risk reporting, stress testing, modelling and risk education. This approach promotes consistency in risk management practices and standards across the enterprise, and verifies that any accepted risks are consistent with BMO's risk appetite.

Operating Groups and Corporate Services, including Technology and Operations, are responsible for effectively managing risks by identifying, assessing, managing, monitoring, mitigating and reporting on risk within their respective operations and lines of business in accordance with their established risk appetite. They exercise business judgment and maintain effective policies, processes and internal controls, so that significant risk issues are escalated and reviewed by ERPM. Individual governance committees and ERPM establish and monitor risk limits that are consistent with, and subordinate to, the Board-approved limits.

Risk Appetite Framework

BMO's Risk Appetite Framework consists of its Risk Appetite Statement and the delineation of roles and responsibilities of senior management and the Board of Directors, and is supported by corporate policies, standards and guidelines, including related risk limits, concentration levels and controls defined therein. Risk appetite defines the amount of risk that the bank is willing to assume given its guiding principles, thereby supporting the pursuit of sound business initiatives, appropriate returns and targeted growth. Risk appetite is integrated with strategic and capital planning and performance management. The Risk Appetite Statement consists of both qualitative and quantitative specifications of our appetite for material risks. Key risk metrics are outlined for material risks, which include specific thresholds that allow senior management and the Board of Directors to monitor the current risk profile relative to risk appetite. On an annual basis, the RMC submits the Risk Appetite Statement and key risk metrics to the RRC, which in turn reviews and recommends them to the Board of Directors for approval. The Risk Appetite Statement is articulated and applied consistently across the enterprise, with operating groups and key businesses and entities developing their own respective risk appetite statements within this framework.

We believe that risk management is every employee's responsibility. This is guided by five key principles that drive our approach to managing risk across the enterprise and comprise our Risk Appetite Statement.

- **Understand and Manage** by only taking risks that are transparent and understood.
- **Protect BMO's Reputation** by adhering to principles of honesty, integrity, respect and high ethical standards in line with our Code of Conduct.
- **Diversify. Limit Tail Risk** by targeting a business mix that minimizes earnings volatility and exposure to low-probability, high-impact events.
- **Maintain Strong Capital and Liquidity** that meet, or exceed, regulatory requirements and market expectations.
- **Optimize Risk Return** by managing risk-adjusted exposures and making decisions that create value for shareholders.

Risk Limits

Risk limits are set so that risk-taking activities remain within BMO's risk appetite, and balance risk diversification, exposure to loss and risk-adjusted returns. These limits inform business strategies and decisions, and are reviewed and approved by the Board of Directors or management committees, as appropriate, based on the level and granularity of the limits. They include:

- **Credit and Counterparty Risk** – limits on group and single-name exposures and material country, industry and portfolio/product segments.
- **Market Risk** – limits on economic value and earnings exposures to stress scenarios and significant market movements, as well as limits on value at risk and stress related to trading and underwriting activities.
- **Insurance Risk** – limits on policy exposures and reinsurance arrangements.
- **Liquidity and Funding Risk** – minimum limits governing the internal liquidity stress testing scenario, minimum regulatory liquidity ratio requirements, and maximum levels of asset pledging and wholesale funding, as well as limits related to liability diversification and credit and liquidity facility exposures.
- **Operational Risk** – key metrics for measuring operational and other non-financial risks.

The Board of Directors, after considering recommendations from the RRC and the RMC, annually reviews and approves key risk limits and then delegates overall authority for these limits to the CEO. The CEO in turn delegates more specific authorities to the senior executives of the operating groups (first line of defence), who are responsible for the management of risk in their respective operations, and to the CRO. These delegated authorities allow risk officers to set risk tolerances, approve geographic and industry sector exposure limits within defined parameters, and establish underwriting and inventory limits for trading and investment banking activities. The criteria under which more specific authorities may be delegated across the organization, as well as the requirements relating to the documentation, communication and monitoring of those specific delegated authorities, are set out in corporate policies and standards.

Enterprise Policy Framework

The Enterprise Policy Framework includes a comprehensive set of corporate policies, each of which is approved by the RRC, as well as corporate standards issued pursuant to those corporate policies that have been reviewed by the RMC and approved by senior management. Corporate policies and standards collectively outline the principles, expectations, and roles and responsibilities of senior management for ensuring that key risks are identified, assessed, managed (including mitigation), monitored and reported. Corporate policies and standards are reviewed and updated at a minimum every two years.

The Enterprise Policy Framework also includes supporting directives and procedures that apply across the first and second lines of defence to operationalize the requirements, roles and responsibilities, and activities outlined in those corporate policies and standards.

Three-Lines-of-Defence Operating Model

Our ERMF is operationalized through the three-lines-of-defence approach to managing risk, as described below:

- Operating groups and Corporate Services, which includes Technology and Operations, are our first line of defence. They are accountable for the risks arising from their businesses, operations and exposures. They are expected to pursue business opportunities within their established risk appetite and to identify, assess, manage (including mitigation), monitor and report on all risks in, or arising from, their businesses, operations and exposures. The first line discharges its responsibilities by applying risk management and reporting methodologies, and is responsible for establishing appropriate internal controls in accordance with the ERMF and for monitoring the effectiveness of such controls. These processes and controls help ensure businesses act within their delegated risk-taking authority and risk limits, as set out in corporate policies and the Risk Appetite Framework. Corporate Services, which includes Technology and Operations, while part of our first line of defence, may also operate in a governance capacity when specific roles and responsibilities are assigned to individuals or groups under the Enterprise Policy Framework.
- The second line of defence comprises ERPM and Legal & Regulatory Compliance. The second line provides independent oversight, effective challenge and independent assessment of risks and risk management practices, including transaction, product and portfolio risk management decisions, processes and controls in the first line of defence. The second line establishes enterprise-wide risk management policies, infrastructure, processes, methodologies and practices that the first and second lines use to identify, assess, manage (including mitigation), monitor and report risks across the enterprise.
- Corporate Audit Division is the third line of defence. It provides an independent assessment of the effectiveness of internal controls across the enterprise, including controls that support the risk management and governance processes.

Risk Taxonomy

A Risk Taxonomy is maintained to document the key risks to which BMO is exposed. As a key risk management tool, the Risk Taxonomy reflects our Tier 1 risks, as set out in the diagram below, and provides foundational support across the risk management life cycle in relation to each of these key risks. Our Risk Taxonomy incorporates exposures to financial risks (Credit and Counterparty Risk, Market Risk, Insurance Risk and Liquidity and Funding Risk), non-financial risks (Operational Risk and Legal and Regulatory Risk) and transverse risks, which intersect with both financial and non-financial risks (Strategic Risk, Environmental and Social Risk and Reputation Risk). We maintain sub-categories under each Tier 1 risk in order to support effective risk management practices as part of the overall ERMF.



Risk Management Life Cycle

Risk Identification, Assessment and Management
Risk identification is an integral step in recognizing the key inherent risks that BMO faces, assessing the potential for loss and then acting to mitigate this potential. Our Risk Taxonomy identifies key risks, supporting the implementation of our Risk Appetite Framework and assisting in identifying the primary risk categories for which stress capital consumption is estimated. Risk review and approval processes are established based on the nature, size and complexity of the risks involved. Generally, these involve a formal review and approval by either an individual or a committee that is independent of the originator. Delegated authorities and approvals by category are outlined below.

- **Portfolio transactions** – transactions are approved through risk assessment processes for all types of transactions at all levels of the enterprise, which include operating group recommendations and ERPM approval of credit risk, and transactional and position limits for market risk.
- **Structured transactions** – new structured products and transactions with significant legal and regulatory, accounting or tax implications are reviewed by the Global Markets Risk Committee, as appropriate, and are also reviewed through the operational risk management process if they involve structural or operational complexity that may give rise to significant operational risk. Transactions that may give rise to reputation risk are reviewed by the Reputation Risk Management Committee.
- **Investment initiatives** – documentation of risk assessments is formalized through the investment spending approval process, and is reviewed and approved by Corporate Services based on the initiative's investment spend and inherent risk.
- **New products and services** – procedures for the approval of new or modified products and services offered to customers are the responsibility of the first line of defence, including appropriate senior business leaders, and are reviewed and approved by subject matter experts and senior managers in Corporate Services, as well as by other senior management committees.

Risk Monitoring and Reporting

Risk-Based Capital Assessment
Two measures of risk-based capital are used by BMO: economic capital and advanced-approach regulatory capital. Both are aggregate measures of the risk that the bank assumes in pursuit of its financial objectives, and they enable the evaluation of returns on a risk-adjusted basis. Our operating model provides for the direct management of each type of risk, as well as the management of all material risks on an integrated basis. Measuring the economic profitability of transactions or portfolios involves a combination of both expected and unexpected losses to assess the extent and correlation of risk before authorizing new exposures. Both expected and unexpected loss measures for a transaction or a portfolio reflect current market conditions, the inherent risk in the position and, as appropriate, its credit quality. Risk-based capital methods and material models are reviewed at least annually and updated as appropriate. The risk-based capital models provide a forward-looking estimate of the difference between the maximum potential loss in economic (or market) value and expected loss, measured over a specified time interval and using a defined confidence level.

Stress Testing
Stress testing is a key element of the risk and capital management frameworks. It is integrated into our enterprise and group risk appetite statements and embedded in our management processes. To evaluate risks, we regularly test a range of scenarios, which vary in frequency, severity and complexity, in portfolios and businesses across the enterprise. In addition, we participate in regulatory stress tests in multiple jurisdictions. Governance of the stress testing framework resides with senior management, including the Enterprise Stress Testing Committee. This committee comprises business, risk and finance executives, and is accountable for reviewing and challenging enterprise-wide scenarios and stress test results. Stress testing and enterprise-wide scenarios associated with the Internal Capital Adequacy Assessment Process (ICAAP), including recommendations for actions that the enterprise could take in order to manage the impact of a stress event, are established by senior management and presented to the Board of Directors. Stress testing associated with the Horizontal Capital Review (HCR), which is a U.S. regulatory requirement for BMO Financial Corp. (BFC), is similarly governed at the BFC level.

Quantitative models and tools, along with qualitative approaches, are utilized to assess the impact of changes in the macroeconomic environment on the income statement and balance sheet and the resilience of the bank's capital over a forecast horizon. Models utilized for stress testing are approved and governed under the Model Risk Management Framework, and are used to establish a better understanding of our risks and to test our capital adequacy.

Enterprise Stress Testing
Enterprise stress testing supports BMO's ICAAP and target-setting through analysis of the potential effects oflow-frequency, high-severity events on earnings, the balance sheet, and liquidity and capital positions. Scenario selection is a multi-step process that considers material and idiosyncratic risks and the potential impact of new or emerging trends on risk profiles, as well as the macroeconomic environment. Scenarios may be defined by senior management or regulators. The economic impacts are determined by the Economics group, which translates the scenarios into macroeconomic and market variables that include, but are not limited to, GDP growth, yield curve estimates, unemployment rates, real estate prices, stock index growth and changes in corporate profits. These macroeconomic variables drive stress loss models, tools and qualitative assessments that are applied to determine estimated stress impacts. The scenarios are used by operating, risk and finance groups to assess a broad range of financial impacts that could arise under a specific stress, as well as the ordinary course and extraordinary actions that would be anticipated in response to that stress.

Stress test results, including mitigating actions, are benchmarked and challenged by relevant business units and senior management, including the Enterprise Stress Testing Committee.

Targeted Portfolio and Ad Hoc Stress Testing
BMO's stress testing framework integrates stress testing at the line of business, portfolio, industry, geographic and product level, and embeds it in strategy, business planning and decision-making. Targeted portfolio, industry and geographic analysis is conducted by ERPM and the lines of business to test risk appetite, limits, concentration and strategy. Ad hoc stress testing is conducted in response to changing economic or market conditions and in order to assess business strategies.

Climate-Related Scenario Analysis
We have established a climate-related scenario analysis program to explore climate-specific vulnerabilities in order to enhance our resilience to climate-related risks, in line with the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) recommendations. The climate-related scenario analysis program leverages existing risk capabilities in combination with climate-specific expertise. Evolving industry practices are examined and used to inform this work, with the goal of strengthening our ability to evaluate climate-related risks. In the past year, we have applied scenario analysis to certain sectors in our portfolios to determine the potential impacts of physical and transition risks. BMO is also participating in Phase III of the United Nations Environment Programme Finance Initiative (UNEP-FI) to evaluate and test climate scenario analysis methodologies.

Risk Culture

The Enterprise Culture and Conduct Framework sets out BMO's approach to managing and mitigating potential misconduct. Misconduct is behaviour that falls short of legal, professional, internal conduct and ethical standards. Similar to BMO's approach to other non-financial risks, this framework is supported by the ERMF and our focus on maintaining a strong risk culture. BMO reports on various metrics related to culture and conduct, and engages with other control frameworks across the enterprise and in all of the jurisdictions in which it operates.

Risk culture is the set of shared norms, attitudes and behaviours related to risk awareness, risk-taking and risk management at BMO. Sound risk culture consistently supports appropriate behaviours and judgments about risk-taking and promotes effective risk management and alignment of risk-taking activities with BMO's Risk Appetite. Our risk culture informs and supports our overall culture. We have a long-standing commitment to high ethical standards, grounded in values of integrity, empathy, diversity and responsibility. Our Purpose – to Boldly Grow the Good *in business and life* – is underpinned by our values. The Purpose defines BMO as an organization and is the foundation of our position and our operations. ERPM is responsible for the development and promotion of a healthy, strong risk culture across the enterprise. In pursuing this mandate, ERPM works closely with Legal & Regulatory Compliance and its Ethics & Conduct Office, as well as People & Culture. BMO's risk culture is founded on four guiding principles that together reinforce its effectiveness across the bank: Tone from the Top, Accountability, Effective Communication and Challenge, and Incentives:

- **Tone from the Top:** Our risk culture is grounded in an approach to risk management that encourages openness, constructive challenge and personal accountability. Each member of senior management plays a critical role in fostering this strong risk culture among all employees, by effectively communicating this responsibility and by the example of their own actions. The Board of Directors oversees BMO's corporate objectives, and seeks to ensure they are supported by a sound risk strategy and an effective ERMF that is appropriate to the nature, scale, complexity and risk profile of our operations.
- **Accountability:** BMO's ERMF is anchored in the three-lines-of-defence approach to managing risk. Our risk culture also encourages the escalation of concerns associated with potential or emerging risks to senior management, so that they can be evaluated and appropriately addressed. BMO encourages and supports an environment in which concerns can be raised without retaliation.
- **Effective Communication and Challenge:** Timely and transparent sharing of information is integral to engaging stakeholders in key decisions and strategy discussions, bringing added rigour and discipline to BMO's decision-making. This not only leads to the timely identification, escalation and resolution of issues, but also encourages open communication, independent challenge and an understanding of the key risks faced by the organization, so that employees are equipped and empowered to make decisions and take action in a coordinated and consistent manner, supported by a strong monitoring and control framework.
- **Incentives:** Compensation and other incentives are aligned with prudent risk-taking. These are designed to reward the appropriate use of capital and respect for the rules and principles of the ERMF, and do not encourage excessive risk-taking. Risk managers have input into the design of incentive programs that may have an effect on risk-taking. We also maintain training programs that are designed to foster a deep understanding of BMO's capital and risk management frameworks across the enterprise, providing employees and management with the tools and insights they need to fulfill their responsibilities for independent oversight, regardless of their role in the organization.

Credit and Counterparty Risk

Credit and counterparty risk is the potential for credit loss due to the failure of an obligor (i.e., a borrower, endorser, guarantor or counterparty) to repay a loan or honour another predetermined financial obligation.

Credit and counterparty risk underlies every lending activity that we enter into, and also arises in the holding of investment securities, transactions related to trading and other capital markets products, and activities related to securitization. Credit risk and counterparty risk comprise the most significant measurable risk we face. Proper management of credit risk is integral to our success, since failure to effectively manage credit risk could have an immediate and significant impact on earnings, financial condition and reputation.

Credit and Counterparty Risk Governance

The objective of the Credit Risk Management Framework is to ensure that all material credit risks to which the enterprise is exposed are identified, measured, managed, monitored and reported. The Risk Review Committee (RRC) has oversight of the management of all material risks that we face at BMO, including the Credit Risk Management Framework. The Credit Risk Management Framework incorporates governing principles that are defined in a series of corporate policies and standards and are applied to specific operating procedures. These policies and standards are reviewed on a regular basis and modified as necessary to keep them current and consistent with our risk appetite. The structure, limits (both notional and capital-based), collateral requirements, monitoring, reporting and ongoing management of credit exposures are all governed by these credit risk management principles.

Lending officers in the operating groups are responsible for recommending credit decisions based on the completion of appropriate due diligence, and they assume accountability for the related risks. In some instances, relatively small transactions may be assessed by automated decision-making, or they may be approved by first-line underwriters with appropriate training, independence and oversight. Credit officers in Enterprise Risk Portfolio Management (ERPM) approve larger or higher risk credit transactions and are accountable for providing an objective independent assessment of the lending recommendations and risks assumed by the lending officers. All of these individuals in the first and second lines of defence are subject to a lending qualification process and operate in a disciplined environment with clear delegation of decision-making authority, including individually delegated lending limits where appropriate, which are reviewed annually or more frequently, as needed. The Board of Directors annually delegates to the CEO discretionary lending limits for further specific delegation to senior officers. Credit decision-making is conducted at the management level appropriate to the size and risk of each transaction, in accordance with an extensive range of corporate policies, standards and procedures governing the conduct of activities in which credit risk arises. Corporate Audit Division reviews and tests management processes and controls and samples credit transactions in order to assess adherence to acceptable lending standards as set out in BMO's Risk Appetite Statement, as well as compliance with all applicable governing policies, standards and procedures.

For corporate and commercial obligors presenting a higher than normal risk of default, we have in place formal policies that outline the framework for managing such accounts and the specialized groups that manage them. We strive to identify borrowers in financial difficulty early, and every effort is made to bring such accounts back to an acceptable level of risk through the exercise of good business judgment and the implementation of sound and constructive workout solutions. Obligors are managed on a case-by-case basis, which involves the application of judgment by the specialized groups.

All credit risk exposures are subject to regular monitoring. Performing corporate and commercial accounts are reviewed on a regular basis, no less frequently than annually, with most subject to internal monitoring triggers that, if breached, result in an interim review.

The frequency of review increases in accordance with the likelihood and size of potential credit losses, and deteriorating higher-risk situations are referred to specialized account management groups for closer attention, as appropriate. In addition, regular portfolio and sector reviews are carried out, including stress testing and scenario analysis based on current, emerging or prospective risks, such as the COVID-19 pandemic. Reporting is provided at least quarterly, and more frequently where appropriate, to RRC and senior management committees in order to keep them informed of credit risk developments in our credit and investment portfolios, including changes in credit risk concentrations, watchlist accounts, impaired loans, provisions for credit losses, negative credit migration and significant emerging credit risk issues. This supports RRC and senior management committees in any related decisions they may make.

Counterparty credit risk (CCR) involves a bilateral risk of loss because the market value of a transaction can be positive or negative for either counterparty. CCR exposures are subject to the credit oversight, limit framework and approval process outlined above. However, given the nature of the risk, CCR exposures are monitored under the market risk framework. In order to reduce our exposure to CCR, exposures are often collateralized, and trades may be cleared through a regulated central counterparty (CCP), which reduces overall systemic risk by standing between counterparties, maximizing netting across trades and insulating counterparties from each other's defaults. CCPs mitigate default risk of any member through the use of margin requirements (both initial and variation) and a default management process, including a default fund and other provisions. Our exposures to CCPs are subject to the same credit risk governance, monitoring and rating framework we apply to all other corporate accounts.

Credit and Counterparty Risk Management

Collateral Management

Collateral is used for credit risk mitigation purposes to minimize losses that would otherwise be incurred in the event of a default. Depending on the type of borrower or counterparty, the assets available and the structure and term of the credit obligations, collateral can take various forms. For corporate and commercial borrowers, collateral can take the form of pledges of the assets of a business, such as accounts receivable, inventory, machinery or real estate, or personal assets pledged in support of guarantees. For trading counterparties, BMO may enter into legally enforceable netting agreements for on-balance sheet credit exposures, when possible. In the securities financing transaction business (including repurchase agreements and securities lending), we take eligible financial collateral that we control and can readily liquidate.

Collateral for BMO's derivatives trading counterparty exposures primarily comprises cash and eligible liquid securities that are monitored and revalued on a daily basis. Collateral is obtained under the contractual terms of standardized industry documentation.

With limited exceptions, we utilize the International Swaps and Derivatives Association Inc. Master Agreement, frequently with a Credit Support Annex, to document our collateralized trading relationships with counterparties for over-the-counter (OTC) derivatives that are not centrally cleared.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Credit Support Annexes entitle a party to demand a transfer of collateral (or other credit support) when its OTC derivatives exposure to the other party exceeds an agreed threshold. Collateral to be transferred can include variation margin or initial and variation margin. Credit Support Annexes contain, among other measures, provisions setting out acceptable types of collateral and a method for their valuation (discounts are often applied to the market values), as well as thresholds, whether or not the collateral can be re-pledged by the recipient and how interest is to be calculated.

Many G20 jurisdictions continue to implement new regulations that require certain counterparties with significant exposures to OTC derivatives to post or collect prescribed types and amounts of collateral for uncleared OTC derivatives transactions. For additional discussion, refer to Derivatives Reform.

To document our contractual securities financing relationships with counterparties, we utilize master repurchase agreements for repurchase transactions, and master securities lending agreements for securities lending transactions.

On a periodic basis, collateral is subject to revaluation based on the specific asset type. For loans, the value of collateral is initially established at the time of origination, and the frequency of revaluation is dependent on the type of collateral. For commercial real estate collateral, a full external appraisal of the property is typically obtained at the time of loan origination, unless the exposure is below a specified threshold amount, in which case an internal evaluation and a site inspection are conducted. Internal evaluations may consider property tax assessments, purchase prices, real estate listings or realtor opinions. The case for an updated appraisal is reviewed annually, with consideration given to the borrower risk rating, existing tenants and lease contracts, as well as current market conditions.

In the event a loan is classified as impaired, and depending on its size, a current external appraisal, evaluation or restricted use appraisal is obtained and updated every 12 months while the loan is classified as impaired. In Canada, for residential real estate that has a loan-to-value (LTV) ratio of less than 80%, an external property appraisal is routinely obtained at the time of loan origination. We may use an external service provided by Canada Mortgage and Housing Corporation or an automated valuation model from a third-party appraisal management provider to assist with determining either the current value of a property or the need for a full property appraisal.

For insured residential mortgages in Canada with an LTV ratio greater than 80%, the default insurer is responsible for confirming the lending value.

Portfolio Management and Concentrations of Credit and Counterparty Risk

Our credit risk governance policies require an acceptable level of diversification to help ensure we avoid undue concentrations of credit risk. Concentrations of credit risk may exist if a number of clients are engaged in similar activities, are located in the same geographic region or have similar economic characteristics such that their ability to meet contractual obligations could be similarly affected by changes in economic, political or other conditions. Limits may be specified for several portfolio dimensions, including industry, specialty segment (e.g., hedge funds and leveraged lending), country, product and single-name concentrations. The diversification of our credit exposure may be supplemented by the purchase or sale of credit protection through guarantees, insurance or credit default swaps.

Our credit assets consist of a well-diversified portfolio representing millions of clients, the majority of them individual consumers and small to medium-sized businesses. From an industry viewpoint, on a drawn loans and commitments basis, our most significant exposure as at October 31, 2021 was to individual consumers, comprising $280,087 million ($259,289 million in 2020).

Wrong-Way Risk

Wrong-way risk occurs when our exposure to a counterparty or the magnitude of our potential loss is highly correlated with the counterparty's probability of default. Specific wrong-way risk arises when the credit quality of the counterparty and the market risk factors affecting collateral or other risk mitigants display a high correlation, and general wrong-way risk arises when the credit quality of the counterparty, for non-specific reasons, is highly correlated with macroeconomic or other factors that affect the value of the risk mitigant. Our procedures require that specific wrong-way risk be identified in transactions and accounted for in the assessment of risk, including any heightened level of exposure.

Credit and Counterparty Risk Measurement

BMO quantifies credit risk at both the individual borrower or counterparty level and the portfolio level. In order to limit earnings volatility, manage expected credit losses and minimize unexpected losses, credit risk is assessed and measured using the following risk-based parameters:

- **Exposure at Default (EAD)** represents an estimate of the outstanding amount of a credit exposure at the time a default may occur.
- **Loss Given Default (LGD)** is a measure of BMO's economic loss, such as the amount that may not be recovered in the event of a default, presented as a proportion of the exposure at default.
- **Probability of Default (PD)** represents the likelihood that a borrower or counterparty will go into default over a one-year time horizon.
- **Expected Loss (EL)** is a measure representing the loss that is expected to occur in the normal course of business in a given period of time. EL is calculated as a function of EAD, LGD and PD.

Under Basel III, the Office of the Superintendent of Financial Institutions (OSFI) permits three approaches for the measurement of credit risk: Standardized, Foundation Internal Ratings Based and Advanced Internal Ratings Based (AIRB). BMO primarily uses the AIRB Approach to determine credit risk-weighted assets (RWA) in its portfolios, including portfolios of the bank's subsidiary BMO Financial Corp. Refer to the Supplementary Regulatory Capital Information disclosure for details regarding the total EAD of Retail and Wholesale exposures under AIRB capital treatment. The remaining exposures reflect waivers and exemptions to the AIRB Approach and are measured under the Standardized Approach, subject to OSFI's approval. We continue to transition all material exposures in this category to the AIRB Approach. For securitization exposures, we apply the Basel hierarchy of approaches, including the Securitization Internal Ratings Based Approach and the External Ratings Based Approach, as well as the Standardized Approach.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

BMO's regulatory capital and economic capital frameworks both use EAD to assess credit and counterparty risk. Exposures are classified as follows:

- Drawn exposures include loans, acceptances, deposits with regulated financial institutions and certain securities. For off-balance sheet amounts and undrawn amounts, EAD includes an estimate of any further amounts that may be drawn at the time of default.
- Undrawn commitments cover all unutilized authorizations associated with the drawn loans noted above, including those which are unconditionally cancellable. EAD for undrawn commitments is model-generated, based on internal empirical data.
- OTC derivatives are those in proprietary accounts that result in exposure to credit risk in addition to market risk. EAD for OTC derivatives is calculated inclusive of collateral.
- Other off-balance sheet exposures include items such as guarantees, standby letters of credit and documentary credits. EAD for other off-balance sheet items is based on management's best estimate.
- Repo-style transactions include repos, reverse repos and securities lending transactions, which represent both asset and liability exposures. EAD for repo-style transactions is the calculated exposure, net of collateral.
- Capital is calculated based on exposures that, where applicable, have been redistributed to a more favourable PD band or LGD measure, or a different Basel asset class, as a result of the application of credit risk mitigation and a consideration of credit risk mitigants, including collateral and netting.

Total credit exposures at default by industry sector, as at October 31, 2021 and 2020, based on the Basel III classifications, are as follows:

(Canadian $ in millions)	Drawn (3)		Commitments (undrawn) (3)		OTC derivatives (4)		Other off-balance sheet items (3)		Repo-style transactions (4) (5)		Total (1)	
	2021	2020	**2021**	2020	**2021**	2020	**2021**	2020	**2021**	2020	**2021**	2020
Financial institutions	**187,011**	142,254	**26,933**	24,302	**16,331**	19,611	**6,808**	6,520	**28,968**	22,866	**266,051**	215,553
Governments	**67,207**	78,506	**1,606**	1,579	**4,011**	4,892	**400**	590	**3,226**	2,624	**76,450**	88,191
Manufacturing	**27,002**	27,789	**16,470**	16,696	**1,649**	1,741	**1,784**	1,714	**–**	–	**46,905**	47,940
Real estate	**43,524**	40,202	**9,830**	9,735	**1,032**	1,383	**1,189**	973	**–**	–	**55,575**	52,293
Retail trade	**16,270**	19,835	**4,646**	4,809	**289**	487	**592**	604	**–**	–	**21,797**	25,735
Service industries	**44,367**	47,468	**16,126**	15,443	**1,238**	2,033	**2,998**	3,116	**–**	–	**64,729**	68,060
Wholesale trade	**14,372**	15,295	**5,199**	5,455	**282**	423	**694**	600	**–**	–	**20,547**	21,773
Oil and gas	**6,075**	9,659	**5,468**	7,212	**10,281**	4,753	**1,377**	1,792	**–**	–	**23,201**	23,416
Individual	**224,348**	206,370	**55,655**	52,829	**–**	–	**84**	90	**–**	–	**280,087**	259,289
Utilities	**7,412**	8,869	**10,864**	11,779	**1,273**	2,259	**2,950**	2,805	**–**	–	**22,499**	25,712
Others (2)	**37,071**	36,446	**17,177**	14,900	**1,588**	1,001	**4,732**	5,295	**–**	–	**60,568**	57,642
Total exposure at default (6)	**674,659**	632,693	**169,974**	164,739	**37,974**	38,583	**23,608**	24,099	**32,194**	25,490	**938,409**	885,604

(1) Credit exposure excluding equity, securitization and other assets, such as non-significant investments, goodwill, deferred tax asset and intangibles.
(2) Includes industries having a total exposure of less than 2%.
(3) Represents gross credit exposures without accounting for any collateral.
(4) Credit exposure at default is inclusive of collateral.
(5) Impact of collateral on the credit exposure for repo-style transactions is $208,635 million ($205,212 million in 2020).
(6) Excludes exposures arising from derivative and repo-style transactions that are cleared through CCPs totalling $8,440 million ($16,901 million in 2020).

Prior-period amounts for certain sectors have been adjusted to align with the current year's presentation, which better classifies the realigned sectors.

Risk Rating Systems

BMO's risk rating systems are designed to assess and measure the risk of any exposure.

Credit risk-based parameters are reviewed, validated and monitored regularly. The monitoring is on a quarterly basis for both the wholesale and retail models. Refer to the Model Risk section for a discussion of model risk mitigation processes. Since the onset of the COVID-19 pandemic, the bank has performed proactive reviews to assess the impact of the pandemic on the retail portfolios and on certain sectors in the wholesale portfolios.

Retail (Consumer and Small Business)

The retail portfolios comprise a diversified group of individual customer accounts and include residential mortgages, personal loans, credit cards, auto loans and small business loans. These loans are managed in pools of homogeneous risk exposures for risk rating purposes. Decision support systems are developed using established statistical techniques and expert systems for underwriting and monitoring purposes. Adjudication models, behavioural scorecards, decision trees and expert knowledge are combined to generate optimal credit decisions in a centralized and automated environment.

The retail risk rating system assesses risk based on individual loan characteristics. We have a range of internally developed PD, LGD and EAD models for each of the major retail portfolios. The major product lines within each of the retail portfolios are modelled separately, so that the risk-based parameters capture the distinct nature of each product. The models, in general, are designed based on internal historical data recorded over a multi-year period that includes at least one full economic cycle, in compliance with regulatory requirements. Adjustments are incorporated into the parameters, as appropriate, to account for uncertainties. The retail parameters are tested and calibrated on an annual basis, if required, to incorporate additional data points and recent experience in the parameter estimation process. Our largest retail portfolios are the Canadian mortgage, Canadian home equity line of credit and Canadian retail credit card portfolios. Risk drivers used in the retail capital models may include customer attributes such as delinquency status and credit scores, and account attributes such as loan amount and utilization.

A PD estimate is assigned to each homogeneous pool to reflect the long-run average of one-year default rates over the economic cycle.

An LGD estimate is calculated by discounting future recovery payments to the time of default, including collection costs.

An EAD estimate is calculated as the balance at default divided by the credit limit at the beginning of the year. For non-revolving products, such as mortgages, EAD is equal to 100% of the current outstanding balance and has no undrawn component.

For capital purposes, the LGD and EAD estimates are calibrated to reflect a downturn scenario. The PD, LGD and EAD estimates are updated annually and recalibrated as required, by comparing the estimates to observed historical experience.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Retail Credit Probability of Default Bands by Risk Rating

Risk profile	Probability of default band
Exceptionally low	£ 0.05%
Very low	> 0.05% to 0.20%
Low	> 0.20% to 0.75%
Medium	> 0.75% to 7.00%
High	> 7.00% to 99.99%
Default	100%

Wholesale (Corporate, Commercial, Bank and Sovereign)

Within our wholesale portfolios, an enterprise-wide risk rating framework is applied to all sovereign, bank, corporate and commercial counterparties. One key element of this framework is the assignment of appropriate borrower or counterparty risk ratings (BRRs). We have a range of internally designed general and sector-specific BRR models, as well as portfolio-level LGD and EAD models for each of the corporate, commercial, bank and sovereign portfolios.

The BRR models capture the key financial and non-financial characteristics of the borrowers and generate a borrower-level rating that reflects the rank order of the default risk. The models are primarily designed by using internal data, supplemented with judgment as necessary, for low-default portfolios.

BRRs are assessed and assigned at the time of loan origination, and reassessed when borrowers request changes to credit facilities or events trigger a review, such as an external rating change or covenant breach. BRRs are reviewed no less frequently than annually, and more frequent reviews are conducted for borrowers with less acceptable risk ratings. The assigned ratings are mapped to a PD reflecting the likelihood of default over a one-year time horizon. As a borrower migrates between risk ratings, the PD associated with the borrower changes.

We employ a master scale with 14 BRRs above default, and PDs are assigned to each rating within an asset class to reflect the long-run average of one-year default rates over the economic cycle, supplemented by external benchmarking, as necessary.

An LGD estimate captures the priority of claim, collateral, product and sector characteristics of the credit facility extended to a borrower. LGD estimates are at the facility level.

An EAD estimate captures the facility type, sector and utilization rate characteristics of the credit facility extended to a borrower. EAD estimates are at the facility level. The EAD credit conversion factor is calculated for eligible facilities by comparing amounts drawn at the time of default and one year prior to default. The authorization and the drawn amount, one year prior to default, are used to split each facility into its respective drawn and undrawn portion, where applicable.

LGD and EAD models have been developed for each asset class using internal data recorded over a multi-year period that includes at least one full economic cycle, in compliance with regulatory requirements. Results are benchmarked using external data when necessary and adjustments are incorporated into the parameters, as appropriate, to account for uncertainties. For capital purposes, the LGD and EAD parameters are calibrated to reflect downturn conditions. The PD, LGD and EAD estimates are updated annually and recalibrated as required, by comparing the estimates to observed historical experience.

As demonstrated in the table below, our internal risk rating system can be aligned with those of external rating agencies.

Wholesale Borrower Risk Rating Scale

BMO rating	Moody's Investors Service implied equivalent	Standard & Poor's implied equivalent
Acceptable		
I-1 to I-7	Aaa to Baa3	AAA to BBB-
S-1 to S-4	Ba1 to B1	BB+ to B+
Watchlist		
P-1 to P-3	B2 to Ca	B to CC
Default / Impaired		
D-1 to D-4	C	C to D

Credit Quality Information

Portfolio Review

Total enterprise-wide outstanding credit risk exposures were $938.4 billion as at October 31, 2021, with $505.7 billion recorded in Canada, $381.7 billion in the United States and $51.0 billion in other jurisdictions. This represents an increase of $52.8 billion or 6% from the prior year [1].

BMO's loan book continues to be well-diversified by industry and geographic region. Gross loans and acceptances increased $10.6 billion or 2% from the prior year to $474.8 billion as at October 31, 2021. The geographic mix of BMO's Canadian and U.S. portfolios represented 66.0% and 32.4% of total loans, respectively, compared with 62.5% and 34.9% in the prior year. The loan portfolio is well-diversified, with the consumer loan portfolio representing 46.5% of the total portfolio, an increase from 44.2% in the prior year, and business and government loans representing 53.5% of the total portfolio, a decrease from 55.8% in the prior year.



(1) Certain comparative figures have been reclassified to conform with the current year's presentation.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Loan Maturities and Interest Rate Sensitivity

The following table presents gross loans and acceptances by contractual maturity and by country of ultimate risk:

(Canadian $ in millions)	1 year or less		Over 1 year to 5 years		Over 5 years		Total	
	2021	2020	**2021**	2020	**2021**	2020	**2021**	2020
Canada								
Consumer	**45,592**	52,346	**146,158**	122,938	**7,836**	7,381	**199,586**	182,665
Commercial and corporate (excluding real estate)	**59,141**	71,350	**25,786**	16,724	**1,508**	723	**86,435**	88,797
Commercial real estate	**11,101**	7,397	**15,050**	10,142	**1,571**	1,275	**27,722**	18,814
United States	**54,896**	45,575	**72,585**	88,143	**26,170**	28,171	**153,651**	161,889
Other countries	**5,449**	10,846	**1,762**	999	**242**	206	**7,453**	12,051
Total	**176,179**	187,514	**261,341**	238,946	**37,327**	37,756	**474,847**	464,216

The following table presents net loans and acceptances by interest rate sensitivity:

(Canadian $ in millions)	**2021**	2020
Fixed rate	**234,697**	237,596
Floating rate	**223,565**	209,824
Non-interest sensitive (1)	**14,021**	13,493
Total	**472,283**	460,913

(1) Non-interest sensitive comprises customers' liability under acceptances.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Further details on BMO's loan book, including detailed breakdowns by industry and geographic region, can be found in Tables 7 to 15 in the Supplemental Information. Details of our credit exposures are presented in Note 4 of the consolidated financial statements.

Real Estate Secured Lending

Residential mortgage and home equity line of credit (HELOC) exposures continue to be of interest in the current environment. We regularly perform stress testing on our residential mortgage and HELOC portfolios to evaluate the potential effects of high-impact events. These stress tests incorporate scenarios ranging from moderately to severely adverse. The credit losses forecast in these tests vary with the severity of the scenario and are currently considered to be manageable.

Leveraged Finance

We define leveraged finance loans as loans and mezzanine financing provided to private equity-owned businesses for which our assessment indicates a higher level of credit risk. We have some exposure to leveraged finance loans, which represented 1.9% of total assets, with $19.0 billion outstanding as at October 31, 2021 (1.7% and $16.4 billion, respectively, in 2020). Of this amount, 27.0% of leveraged finance loans, with $5.2 billion outstanding as at October 31, 2021 (26% and $4.3 billion, respectively, in 2020), were well-secured by high-quality assets. In addition, $417 million or 2.2% of all leveraged finance loans were classified as impaired as at October 31, 2021 ($786 million or 4.8% in 2020).

Provision for Credit Losses

Total provision for credit losses was $20 million in the current year, compared with $2,953 million in the prior year, reflecting an improved economic outlook and more favourable credit conditions. Detailed discussions of PCL, including historical PCL trends, are provided in Table 15 in the Supplemental Information and in Note 4 of the consolidated financial statements.

Gross Impaired Loans

Total gross impaired loans and acceptances (GIL) were $2,169 million in 2021, a decrease of 40% from $3,638 million in 2020. The largest decreases in impaired loans were recorded in the oil and gas and retail trade industries. GIL as a percentage of gross loans and acceptances was 0.46% in 2021, compared with 0.78% in the prior year.

Factors contributing to the change in GIL are outlined in the table below. Loans classified as impaired during the year decreased to $1,775 million from $4,649 million in 2020, reflecting lower impaired loan formations in the oil and gas, retail trade and service industries. On a geographic basis, Canada accounted for most impaired loan formations, comprising 75% of total formations in 2021, compared with 39% in 2020.

Detailed breakdowns of impaired loans by geographic region and industry can be found in Table 11 in the Supplemental Information and in Note 4 of the consolidated financial statements.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Changes in Gross Impaired Loans [1] and Acceptances

(Canadian $ in millions, except as noted)

For the year ended October 31	2021	2020	2019
GIL, beginning of year	**3,638**	2,629	1,936
Classified as impaired during the year	**1,775**	4,649	2,686
Transferred to not impaired during the year	**(821)**	(719)	(604)
Net repayments	**(1,618)**	(1,728)	(800)
Amounts written off	**(584)**	(1,047)	(528)
Recoveries of loans and advances previously written off	**–**	–	–
Disposals of loans	**(79)**	(147)	(57)
Foreign exchange and other movements	**(142)**	1	(4)
GIL, end of year	**2,169**	3,638	2,629
GIL as a % of gross loans and acceptances	**0.46**	0.78	0.58

(1) GIL excludes purchased credit impaired loans.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Allowance for Credit Losses

We employ a disciplined approach to provisioning and loan loss evaluation across all loan portfolios, with the prompt identification of problem loans being a key risk management objective. We maintain both an allowance on impaired loans and an allowance on performing loans, in accordance with IFRS. An allowance on performing loans is maintained to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the allowance on performing loans is based on the requirements of IFRS, considering the guideline issued by our regulator, OSFI. Under the IFRS 9 expected credit loss (ECL) methodology, an allowance is recorded for ECL on financial assets regardless of whether there has been an actual loss event. We recognize a loss allowance at an amount generally based on 12 months of ECL, if the credit risk at the reporting date has not increased significantly since initial recognition (Stage 1). We record ECL over the remaining life of performing financial assets that are considered to have experienced a significant increase in credit risk (Stage 2).

ECL is calculated on a probability-weighted basis, based on three different economic scenarios, and is a function of PD, EAD and LGD estimates calibrated to meet the requirements for calculating ECL for a specific financial asset. The timing of the loss is also considered, and ECL is estimated by incorporating forward-looking economic information and by applying experienced credit judgment to reflect factors not captured in ECL models. An allowance on impaired loans is maintained to reduce the carrying value of individually identified impaired loans (Stage 3) to the expected recoverable amount.

We maintain an allowance for credit losses (ACL) at a level that we consider appropriate to absorb credit-related losses. As at October 31, 2021, the total ACL was $2,958 million, a decrease of $856 million from the prior year, reflecting lower allowances on both performing loans and impaired loans. The allowance on impaired loans was $511 million as at October 31, 2021, and the allowance on performing loans was $2,447 million. These amounts included an allowance on impaired loans of $13 million and an allowance on performing loans of $381 million related to undrawn commitments and letters of credit that are considered other credit instruments and recorded in other liabilities. The allowance on impaired loans decreased $228 million from $739 million in the prior year, and our coverage ratio remained adequate, with ACL on impaired loans as a percentage of GIL of 23.0%, compared with 20.0% in 2020. This ratio can change quarter-over-quarter due to variability in the write-down of loans and the related allowance. The allowance on performing loans decreased $628 million to $2,447 million from $3,075 million in the prior year, primarily driven by an improving economic outlook, positive credit migration and movements in foreign exchange rates, partially offset by the impact of the uncertain environment on future credit conditions, including adoption of a higher adverse scenario weight, as well as a more severe adverse scenario and portfolio growth.

Further details on the continuity in ACL by each product type can be found in Tables 12 and 13 in the Supplemental Information, and in Note 4 of the consolidated financial statements.

European Exposures

BMO's geographic exposures are subject to a country risk management framework that incorporates economic and political assessments and management of exposures within limits based on product, entity and country of ultimate risk. Our exposure to European countries as at October 31, 2021, including Greece, Ireland, Italy, Portugal and Spain (GIIPS), is set out in the tables that follow.

The table below outlines total net portfolio exposures for funded lending, securities (including credit default swap (CDS) activity), repo-style transactions and derivatives. Funded lending is detailed by counterparty type, as well as by total commitments compared with the funded amount, in the following tables.

European Exposure by Country and Counterparty (1)

(Canadian $ in millions)

As at October 31, 2021	Funded lending (2)	Securities (3) (4)				Repo-style transactions and derivatives (5) (6)				Total net exposure
Country	Total	Bank	Corporate	Sovereign	Total	Bank	Corporate	Sovereign	Total	
GIIPS										
Greece	–	–	–	–	–	–	–	–	–	–
Ireland (7)	483	–	–	–	–	8	52	–	60	543
Italy	13	–	–	–	–	1	–	–	1	14
Portugal	–	–	–	–	–	–	–	–	–	–
Spain	432	49	3	–	52	6	2	–	8	492
Total – GIIPS	**928**	**49**	**3**	**–**	**52**	**15**	**54**	**–**	**69**	**1,049**
Eurozone (excluding GIIPS)										
France	136	19	–	596	615	14	5	5	24	775
Germany	259	532	44	772	1,348	212	2	–	214	1,821
Netherlands	397	338	–	–	338	659	149	–	808	1,543
Other (8)	425	–	1	74	75	16	16	4	36	536
Total – Eurozone (excluding GIIPS)	**1,217**	**889**	**45**	**1,442**	**2,376**	**901**	**172**	**9**	**1,082**	**4,675**
Rest of Europe										
Norway	341	–	–	123	123	–	4	30	34	498
Sweden	18	156	4	336	496	3	–	–	3	517
Switzerland	371	–	–	–	–	36	15	–	51	422
United Kingdom	1,773	112	246	4,396	4,754	135	620	59	814	7,341
Other (8)	–	41	–	15	56	9	5	4	18	74
Total – Rest of Europe	**2,503**	**309**	**250**	**4,870**	**5,429**	**183**	**644**	**93**	**920**	**8,852**
Total – All of Europe (9)	**4,648**	**1,247**	**298**	**6,312**	**7,857**	**1,099**	**870**	**102**	**2,071**	**14,576**

As at October 31, 2020	Funded lending (2)	Securities (3)				Repo-style transactions and derivatives (5) (6)				Total net exposure
Country	Total	Bank	Corporate	Sovereign	Total	Bank	Corporate	Sovereign	Total	
Total – GIIPS	611	53	1	–	54	8	225	3	236	901
Total – Eurozone (excluding GIIPS)	1,329	944	77	1,038	2,059	111	306	10	427	3,815
Total – Rest of Europe	3,185	622	710	7,212	8,544	779	593	58	1,430	13,159
Total – All of Europe (9)	5,125	1,619	788	8,250	10,657	898	1,124	71	2,093	17,875

(1) BMO has the following indirect exposures to Europe as at October 31, 2021:
- Collateral of €976 million to support trading activity in securities (€79 million from GIIPS) and €284 million of cash collateral held.
- Guarantees of $11 billion ($248 million to GIIPS).

(2) Funded lending includes loans.
(3) Securities include cash products, insurance investments and traded credit.
(4) BMO's total net notional CDS exposure (embedded as part of the securities exposure in this table) to Europe was $167 million, with no net single-name* CDS exposure to GIIPS as at October 29, 2021 (*includes a net position of $131 million (bought protection) on a CDS Index, of which 12% comprises GIIPS domiciled entities).
(5) Repo-style transactions are primarily with bank counterparties for which BMO holds collateral ($41 billion for Europe as at October 31, 2021).
(6) Derivatives amounts are marked-to-market, incorporating transaction netting where master netting agreements with counterparties have been entered into, and collateral offsets for counterparties where a Credit Support Annex is in effect.
(7) Does not include Irish subsidiary reserves the bank is required to maintain with the Irish Central Bank of $104 million as at October 31, 2021.
(8) Other Eurozone exposure includes five countries with less than $300 million net exposure. Other European exposure is distributed across four countries as at October 31, 2021.
(9) Of BMO's total net direct exposure to Europe, approximately 93% was to counterparties in countries with a rating of Aa2/AAA from at least one of Moody's or S&P.

European Lending Exposure by Country and Counterparty (9)

(Canadian $ in millions)	Funded lending as at October 31, 2021			Lending (2) As at October 31, 2021		As at October 31, 2020	
Country	Bank	Corporate	Sovereign	Commitments	Funded	Commitments	Funded
GIIPS							
Greece	–	–	–	–	–	–	–
Ireland (7)	–	483	–	641	483	531	474
Italy	13	–	–	13	13	15	15
Portugal	–	–	–	–	–	–	–
Spain	91	341	–	505	432	206	122
Total – GIIPS	**104**	**824**	**–**	**1,159**	**928**	752	611
Eurozone (excluding GIIPS)							
France	134	2	–	264	136	386	240
Germany	157	102	–	406	259	607	391
Netherlands	73	324	–	436	397	397	374
Other (8)	93	332	–	425	425	403	324
Total – Eurozone (excluding GIIPS)	**457**	**760**	**–**	**1,531**	**1,217**	1,793	1,329
Rest of Europe							
Norway	27	314	–	665	341	1,158	638
Sweden	16	2	–	76	18	117	16
Switzerland	19	352	–	429	371	602	505
United Kingdom	9	1,764	–	2,668	1,773	4,809	1,959
Other (8)	–	–	–	31	–	100	67
Total – Rest of Europe	**71**	**2,432**	**–**	**3,869**	**2,503**	6,786	3,185
Total – All of Europe (9)	**632**	**4,016**	**–**	**6,559**	**4,648**	9,331	5,125

Refer to footnotes in the table above.

Derivative Transactions

The following table presents the notional amounts of BMO's over-the-counter (OTC) derivative contracts, comprising those which are centrally cleared and settled through a designated clearing house or central counterparty (CCP) and those which are non-centrally cleared.

CCPs are established under the supervision of central banks or other similar regulatory authorities and, as financial market infrastructure, must satisfy certain financial resilience requirements. Generally speaking, to centrally clear, we acquire a membership in the CCP and, in addition to providing collateral to protect the CCP against risk related to BMO, we are exposed to risk as a member for our contribution to a default fund. We may also be called on to make additional contributions or provide other support in the event another member defaults.

The notional amounts of our derivatives represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under each contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in the Consolidated Balance Sheet. The fair values of OTC derivative contracts are recorded in the Consolidated Balance Sheet.

Over-the-Counter Derivative Contracts (Notional amounts)

(Canadian $ in millions)	Non-centrally cleared		Centrally cleared		Total	
As at October 31	**2021**	2020	**2021**	2020	**2021**	2020
Interest Rate Contracts						
Swaps	**379,117**	442,727	**3,772,174**	3,892,564	**4,151,291**	4,335,291
Forward rate agreements	**2,919**	2,890	**144,738**	514,442	**147,657**	517,332
Purchased options	**69,491**	57,833	**–**	–	**69,491**	57,833
Written options	**68,155**	64,728	**–**	–	**68,155**	64,728
Total interest rate contracts	**519,682**	568,178	**3,916,912**	4,407,006	**4,436,594**	4,975,184
Foreign Exchange Contracts						
Cross-currency swaps	**85,912**	96,813	**–**	–	**85,912**	96,813
Cross-currency interest rate swaps	**513,421**	540,688	**–**	–	**513,421**	540,688
Forward foreign exchange contracts	**441,107**	449,701	**48,319**	44,939	**489,426**	494,640
Purchased options	**54,051**	38,985	**94**	82	**54,145**	39,067
Written options	**54,045**	41,286	**102**	41	**54,147**	41,327
Total foreign exchange contracts	**1,148,536**	1,167,473	**48,515**	45,062	**1,197,051**	1,212,535
Commodity Contracts						
Swaps	**28,892**	30,613	**–**	–	**28,892**	30,613
Purchased options	**4,526**	5,728	**–**	–	**4,526**	5,728
Written options	**3,132**	3,704	**–**	–	**3,132**	3,704
Total commodity contracts	**36,550**	40,045	**–**	–	**36,550**	40,045
Equity Contracts	**99,471**	60,502	**7**	2	**99,478**	60,504
Credit Default Swaps						
Purchased	**778**	1,386	**11,580**	6,021	**12,358**	7,407
Written	**179**	510	**4,979**	1,285	**5,158**	1,795
Total credit default swaps	**957**	1,896	**16,559**	7,306	**17,516**	9,202
Total	**1,805,196**	1,838,094	**3,981,993**	4,459,376	**5,787,189**	6,297,470

Market Risk

Market risk is the potential for adverse changes in the value of our assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity and commodity prices and their implied volatilities, and credit spreads, and includes the risk of credit migration and default in our trading book.

Market risk arises from our trading and underwriting activities, as well as our structural banking activities. The magnitude and importance of these activities to the enterprise, along with the potential volatility of market variables, call for diligent governance and a robust market risk management framework that seeks to provide effective identification, measurement, reporting and control of market risk exposures.

Trading and Underwriting Market Risk Governance

Our market risk-taking activities are subject to an extensive governance framework. The Risk Review Committee (RRC) provides oversight of the management of market risk on behalf of the Board of Directors and approves limits governing market risk exposures that are consistent with our risk appetite. The Risk Management Committee (RMC) regularly reviews and discusses significant market risk exposures and positions, and provides ongoing senior management oversight of our risk-taking activities. Both of these committees are kept apprised of specific market risk exposures and other factors that could expose us to unusual, unexpected or unquantified risks associated with market exposures, as well as other current and emerging market risks. In addition, all businesses and individuals authorized to conduct trading and underwriting activities on behalf of BMO are required to work within our governance framework and, as part of their first-line-of-defence responsibilities, they must adhere to all relevant corporate policies, standards and procedures and maintain and manage market risk exposures within specified limits and risk tolerances. In support of our risk governance framework, our market risk management framework comprises processes, infrastructure and supporting documentation, which together support the identification, assessment, independent monitoring and control of our market risk exposures.

Trading and Underwriting Market Risk

Our trading and underwriting businesses give rise to market risk associated with buying and selling financial products in the course of meeting customer needs, including market-making and related financing activities, and assisting clients to raise funds by way of securities issuance.

Identification and Assessment of Trading and Underwriting Market Risk

As the first step in the management of market risk, thorough assessment processes are in place to identify market risk exposures associated with both new products and the evolving risk profile of existing products, including on- and off-balance sheet positions, trading and non-trading positions, and market risk exposures arising from the domestic and foreign operations of our operating groups.

Reflecting the multi-dimensional nature of market risk, various metrics and techniques are then employed to measure identified market risk exposures. These metrics primarily include Value at Risk, Stressed Value at Risk, and regulatory and economic capital attribution, as well as stress testing. Other techniques include the analysis of the sensitivity of our trading and underwriting portfolios to various market risk factors and the review of position concentrations, notional values and trading losses.

Value at Risk (VaR) measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period. VaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

Stressed Value at Risk (SVaR) measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period, with model inputs calibrated to historical data from a period of significant financial stress. SVaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

Incremental Risk Charge (IRC) complements the VaR and SVaR metrics and represents an estimate of the default and migration risksof non-securitization products held in the trading book with exposure to interest rate risk, measured over a one-year horizon at a 99.9% confidence level.

A consistent set of VaR and SVaR models is used for both management and regulatory purposes across all BMO Financial Group legal entities in which trading or underwriting activities are conducted.

We use a variety of methods to verify the integrity of our risk models, including the application of back-testing against hypothetical losses and approval by an independent model validation team. This testing is aligned with defined regulatory expectations, and its results confirm the reliability of our models. The volatility data and correlations that underpin our models are updated frequently, so that risk metrics reflect current conditions. Selection of the period of significant financial stress for SVaR incorporates historical events, including the COVID-19 pandemic.

Probabilistic stress testing and scenario analysis are used to determine the potential impact of low-frequency, high-severity events on our portfolios. The scenarios incorporate hypothetical and historical events, and consider the performance of our portfolios under a variety of market conditions. Scenarios are amended, added or removed to refine our risk measurement, for example to reflect the market volatility in 2020 and 2021 due to the COVID-19 pandemic, and the results are reported to the lines of business, the RMC and the RRC on a regular basis.

VaR, SVaR, IRC and stress testing should not be viewed as definitive predictors of the maximum amount of losses that could occur in any one day, as their results are based on models and estimates and are subject to confidence levels, and the estimates could be exceeded under unforeseen market conditions.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Back-testing assumes there are no changes in the previous day's closing positions and then isolates the effects of each day's price movements against those closing positions. Our VaR model is back-tested daily, and the one-day 99% confidence level VaR at the local and consolidated BMO levels is compared with the estimated daily profit and loss (P&L) that would be recorded if the portfolio composition remained unchanged. If this P&L result is negative and its absolute value is greater than the previous day's VaR, a back-testing exception occurs. Each exception is investigated, explained and documented, and the back-testing results are reviewed by senior management and reported to our regulators.

Although it is a useful indicator of risk, as with any model-driven metric, VaR has limitations, including the assumption that all positions can be liquidated within the assumed one-day holding period, which may not be the case under illiquid market conditions. Generally, market liquidity horizons are reviewed for suitability and updated where appropriate for relevant risk metrics. Further limitations of the VaR metric include the assumption that historical data can be used as a proxy to forecast future market events, and the fact that VaR calculations are based upon portfolio positions at the close of business and do not reflect the impact of intra-day trading activity.

Monitoring and Control of Trading and Underwriting Market Risk

Limits are applied to VaR, SVaR and other risk metrics, and the limits are subject to regular monitoring and reporting, with breaches escalated to the appropriate level of management. Risk profiles of our trading and underwriting activities are maintained within our risk appetite and supporting limits, and are monitored and reported to traders, management, senior executives and Board committees. Other significant controls include the independent valuation of financial assets and liabilities, as well as compliance with our Model Risk Management Framework to mitigate model risk.

Trading Market Risk Measures

Trading VaR and SVaR

Average Total Trading VaR was marginally higher year-over-year, as the market impact of the COVID-19 pandemic remained within the historical period used for VaR for most of the year, and growth in mortgage trading increased interest rate risk. VaR declined in the second half of 2021, as the historical period used for VaR moved past the second and third quarters of 2020 and the market volatility prevailing at that time. Average Total SVaR declined year-over-year due to reduced exposure to risk in our equity option books.

Total Trading Value at Risk (VaR) Summary (1) (2) (3)

As at or for the year ended October 31 (pre-tax Canadian $ equivalent in millions)	2021				2020			
	Year-end	Average	High	Low	Year-end	Average	High	Low
Commodity VaR	**1.8**	**2.7**	**6.2**	**1.1**	5.5	2.5	5.8	0.6
Equity VaR	**10.8**	**14.9**	**24.9**	**10.0**	16.4	16.0	37.2	4.2
Foreign exchange VaR	**0.5**	**2.2**	**6.4**	**0.5**	4.2	3.4	6.8	0.8
Interest rate VaR (4)	**15.2**	**27.1**	**52.5**	**9.8**	40.7	23.1	42.0	5.4
Debt-specific risk	**3.0**	**3.3**	**5.4**	**1.9**	3.9	3.8	7.6	1.6
Diversification	**(12.8)**	**(19.7)**	**nm**	**nm**	(25.5)	(20.3)	nm	nm
Total Trading VaR	**18.5**	**30.5**	**53.5**	**15.3**	45.2	28.5	53.4	8.1
Total Trading SVaR	**55.8**	**45.7**	**65.4**	**36.3**	45.2	50.8	87.1	29.2

(1) One-day measure using a 99% confidence interval. Gains are presented in brackets and losses are presented as positive numbers.
(2) Stressed VaR is produced weekly.
(3) In Q1-2020, a new measurement approach was introduced for VaR and SVaR, which separated the previously reported credit VaR into interest rate VaR for general credit spread risk and for debt-specific risk. Total Trading VaR and SVaR no longer reflect diversification benefits from debt-specific risk.
(4) Interest rate VaR includes general credit spread risk.
nm – not meaningful

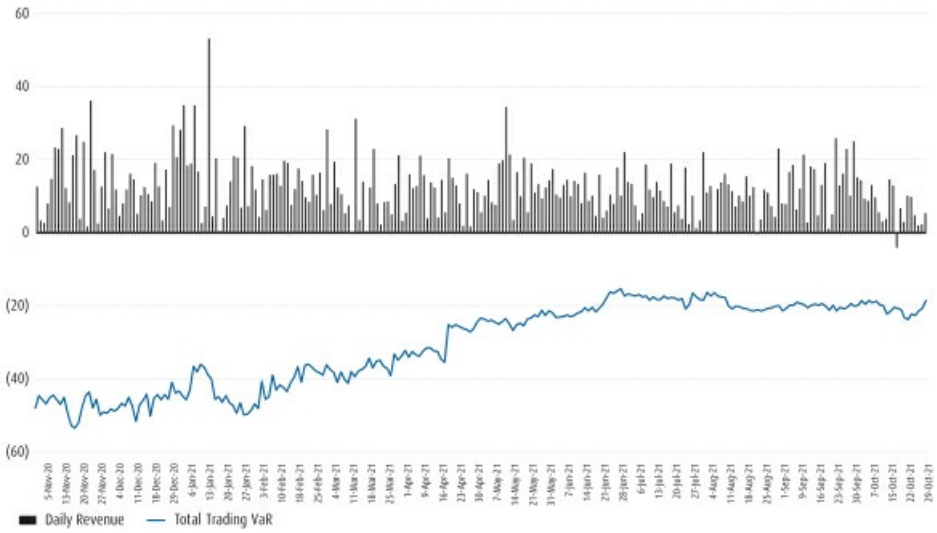
Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Trading Net Revenue

The charts below present daily net revenues plotted against Total Trading VaR, along with a representation of daily net revenue distribution. In 2021, net trading losses were incurred on two days, and we experienced the largest loss on October 19, 2021. A combination of high market volatility, which had a negative impact on some of our positions, and lower than usual customer activity contributed to the losses for the two days.

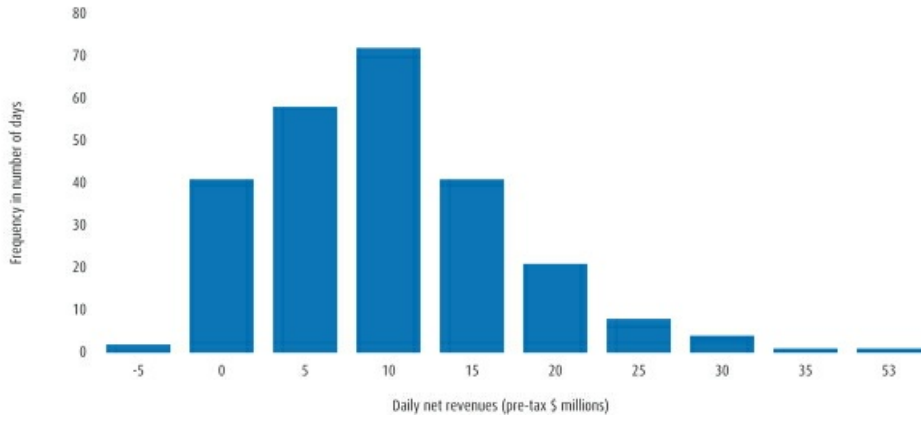
Trading Net Revenues versus Value at Risk

November 1, 2020 to October 31, 2021 (pre-tax basis, Canadian $ in millions)



Frequency Distribution of Daily Net Revenues

November 1, 2020 to October 31, 2021 (Canadian $ in millions)



Structural (Non-Trading) Market Risk

Structural market risk comprises interest rate risk arising from our banking activities (such as loans and deposits) and foreign exchange risk arising from our foreign currency operations and exposures.

Structural Market Risk Governance

BMO's Corporate Treasury group is responsible for the ongoing management of structural market risk across the enterprise, with independent oversight provided by the Market Risk group. In addition to Board-approved limits on earnings at risk and economic value sensitivities to changes in interest rates, more granular management limits are in place to guide the daily management of this risk.

The RRC oversees structural market risk management, regularly reviews structural market risk positions and annually approves the structural market risk plan and limits. The RMC and Asset Liability Committee provide regular ongoing senior management oversight of risk positions and activity.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Structural Market Risk Measurement

Interest Rate Risk

Structural interest rate risk arises when changes in interest rates affect the market value, cash flows and earnings of assets and liabilities related to our banking activities. The objective of structural interest rate risk management is to maintain high-quality earnings and maximize sustainable product spreads, while managing the risk to the economic value of our net assets arising from changes in interest rates.

Structural interest rate risk primarily comprises interest rate mismatch risk and product embedded option risk.

Interest rate mismatch risk arises when there are differences in the scheduled maturities, repricing dates or reference rates of assets, liabilities and derivatives. The net interest rate mismatch, representing residual assets funded by common shareholders' equity, is managed to a target profile through interest rate swaps and securities.

Product embedded option risk arises when product features allow customers to alter cash flows, such as scheduled maturity or repricing dates, usually in response to changes in market conditions. Product embedded options include loan prepayments, deposit redemption privileges and committed rates on unadvanced mortgages. Product embedded options and associated customer behaviours are captured in risk modelling, and hedging programs may be used to manage this risk to low levels.

Structural interest rate risk is measured using simulations, earnings sensitivity and economic value sensitivity analysis, stress testing and gap analysis, in addition to other treasury risk metrics.

Earnings Sensitivity is a measure of the impact of potential changes in interest rates on the projected 12-month pre-tax net income of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

Economic Value Sensitivity is a measure of the impact of potential changes in interest rates on the market value of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

The models that measure structural interest rate risk incorporate projected changes in interest rates and predict the likely reaction of our customers to these changes. For customer loans and deposits with scheduled maturity and repricing dates (such as mortgages and term deposits), the models measure the extent to which customers are likely to use embedded options to alter those scheduled terms. For customer loans and deposits without scheduled maturity and repricing dates (such as credit card loans and chequing accounts), exposure is measured using models that adjust for elasticity in product pricing and reflect historical and forecasted trends in balances. The results of these structural market risk models, by their nature, have inherent uncertainty, as they reflect potential anticipated pricing and customer behaviours, which may differ from actual experience. These models have been developed using statistical analysis and are independently validated and periodically updated through regular model performance assessment, back-testing and ongoing dialogue with the lines of business. Models developed to predict customer behaviour are also used to support product pricing. All models are subject to BMO's Model Risk Management Framework, which is described in more detail in the Enterprise-Wide Risk Management Framework section.

Structural interest rate earnings sensitivity and economic value sensitivity to an immediate parallel increase or decrease in the yield curve are disclosed in the table below. As a result of the low interest rate environment, earnings and economic value sensitivities to declining interest rates commencing as at April 30, 2020 are measured using a 25 basis point decline.

There were no significant changes in the structural market risk management framework during the year.

Structural economic value sensitivity to rising interest rates primarily reflects a lower market value for fixed rate loans. Structural economic value sensitivity to falling interest rates primarily reflects the impact of a higher market value for fixed rate loans and minimum modelled client deposit rates. Structural economic value exposure to rising interest rates and the benefits of falling interest rates increased relative to October 31, 2020, primarily due to modelled deposit pricing being more rate-sensitive at higher projected interest rate levels, following the increase in term market rates during the year. Structural earnings sensitivity quantifies the potential impact of interest rate changes on structural balance sheet pre-tax net income over the next 12 months. Structural earnings sensitivity to falling interest rates primarily reflects the risk of fixed and floating rate loans repricing at lower rates and the more limited ability to reduce deposit pricing as rates fall. Structural earnings exposure to falling interest rates increased in 2021 relative to 2020, largely due to customer deposit growth. The benefits to structural earnings of rising interest rates primarily reflect the positive impact of widening deposit margins as interest rates rise, and this exposure increased in 2021 relative to 2020, largely due to customer deposit growth.

Structural Interest Rate Sensitivity (1)

(Pre-tax Canadian $ equivalent in millions)	Economic value sensitivity				Earnings sensitivity over the next 12 months			
	October 31, 2021		October 31, 2020		October 31, 2021		October 31, 2020	
	Canada (3) (4)	**United States**	**Total** (4)	**Total** (4)	**Canada** (3) (4)	**United States**	**Total** (4)	**Total** (4)
100 basis point increase	**(894.0)**	**(565.1)**	(1,459.1)	(1,085.1)	**51.9**	**331.8**	383.7	285.8
25 or 100 basis point decrease (2)	**202.0**	**62.9**	264.9	100.0	**(59.2)**	**(82.4)**	(141.6)	(98.2)

(1) Losses are presented in brackets and gains are presented as positive numbers.
(2) Due to the low interest rate environment, starting April 30, 2020, economic value sensitivity and earnings sensitivity to declining interest rates are measured using a 25 basis point decline.
(3) Includes Canadian dollar and other currencies.
(4) Measures reflect revised modelling assumptions effective January 31, 2021. Prior periods have been updated to reflect the revised approach and to conform with the current year's presentation.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Insurance Market Risk

Insurance market risk includes interest rate and equity market risk arising from our insurance business activities. A 100 basis point increase in interest rates as at October 31, 2021 would result in an increase in earnings before tax of $48 million ($39 million as at October 31, 2020). A 25 basis point decrease in interest rates as at October 31, 2021 would result in a decrease in earnings before tax of $12 million ($9 million as at October 31, 2020). A 10% increase in equity market values as at October 31, 2021 would result in an increase in earnings before tax of $22 million ($51 million as at October 31, 2020). A 10% decrease in equity market values as at October 31, 2021 would result in a decrease in earnings before tax of $22 million ($53 million as at October 31, 2020). We may enter into hedging arrangements to offset the impact of changes in equity market values on our earnings, and we did so during the 2021 fiscal year. The impact of insurance market risk on earnings is reflected in insurance claims, commissions and changes in policy benefit liabilities in our Consolidated Statement of Income, and the corresponding change in the fair value of BMO's policy benefit liabilities is reflected in other liabilities in our Consolidated Balance Sheet. The impact of insurance market risk is not reflected in the table above.

Foreign Exchange Risk

Structural foreign exchange risk arises primarily from translation risk related to our net investment in U.S. operations and from transaction risk associated with U.S.-dollar-denominated net income.

Translation risk represents the impact that changes in foreign exchange rates could have on our reported shareholders' equity and capital ratios. We may enter into arrangements to offset the impact of foreign exchange rate movements on our capital ratios, and we did so during the 2021 fiscal year. Refer to the Enterprise-Wide Capital Management section for further discussion.

Transaction risk represents the impact that fluctuations in the Canadian dollar/U.S. dollar exchange rate could have on the Canadian dollar equivalent of BMO's U.S.-dollar-denominated financial results. Exchange rate fluctuations will affect future results measured in Canadian dollars and the impact on those results is a function of the periods during which revenues, expenses and provisions for credit losses arise. Hedging positions may be taken to partially offset the pre-tax effects of Canadian dollar/U.S. dollar exchange rate fluctuations on financial results, although no hedges were executed in the current or prior year. If future results are consistent with results in 2021, each one cent increase (decrease) in the Canadian dollar/U.S. dollar exchange rate would be expected to increase (decrease) the Canadian dollar equivalent of U.S. segment net income before income taxes for the year by $34 million, in the absence of hedging transactions. Refer to the Foreign Exchange section for a more complete discussion of the effects of changes in foreign exchange rates on our results.

Linkages between Balance Sheet Items and Market Risk Disclosures

The table below presents items reported on the Consolidated Balance Sheet that are subject to market risk, comprising balances that are subject to either traded risk or non-traded risk measurement techniques.

	As at October 31, 2021				As at October 31, 2020				
		Subject to market risk				Subject to market risk			
(Canadian $ in millions)	Consolidated Balance Sheet	Traded risk (1)	Non-traded risk (2)	Not subject to market risk	Consolidated Balance Sheet	Traded risk (1)	Non-traded risk (2)	Not subject to market risk	Primary risk factors for non-traded risk balances
Assets Subject to Market Risk									
Cash and cash equivalents	**93,261**	**–**	**93,261**	**–**	57,408	–	57,408	–	Interest rate
Interest bearing deposits with banks	**8,303**	**94**	**8,209**	**–**	9,035	217	8,818	–	Interest rate
Securities	**232,849**	**104,412**	**128,437**	**–**	234,260	97,723	136,537	–	Interest rate, credit spread, equity
Securities borrowed or purchased under resale agreements	**107,382**	**–**	**107,382**	**–**	111,878	–	111,878	–	Interest rate
Loans (net of allowance for credit losses)	**458,262**	**3,665**	**454,597**	**–**	447,420	2,416	445,004	–	Interest rate, foreign exchange
Derivative instruments	**36,713**	**34,350**	**2,363**	**–**	36,815	32,457	4,358	–	Interest rate, foreign exchange
Customers' liability under acceptances	**14,021**	**–**	**14,021**	**–**	13,493	–	13,493	–	Interest rate
Other assets	**37,384**	**3,359**	**16,970**	**17,055**	38,952	5,446	16,105	17,401	Interest rate
Total Assets	**988,175**	**145,880**	**825,240**	**17,055**	949,261	138,259	793,601	17,401	
Liabilities Subject to Market Risk									
Deposits	**685,631**	**22,665**	**662,966**	**–**	659,034	18,074	640,960	–	Interest rate, foreign exchange
Derivative instruments	**30,815**	**27,875**	**2,940**	**–**	30,375	26,355	4,020	–	Interest rate, foreign exchange
Acceptances	**14,021**	**–**	**14,021**	**–**	13,493	–	13,493	–	Interest rate
Securities sold but not yet purchased	**32,073**	**32,073**	**–**	**–**	29,376	29,376	–	–	
Securities lent or sold under repurchase agreements	**97,556**	**–**	**97,556**	**–**	88,658	–	88,658	–	Interest rate
Other liabilities	**63,663**	**85**	**63,165**	**413**	63,316	118	62,964	234	Interest rate
Subordinated debt	**6,893**	**–**	**6,893**	**–**	8,416	–	8,416	–	Interest rate
Total Liabilities	**930,652**	**82,698**	**847,541**	**413**	892,668	73,923	818,511	234	

(1) Primarily comprises balance sheet items that are subject to the trading and underwriting risk management framework and recorded at fair value through profit or loss.
(2) Primarily comprises balance sheet items that are subject to the structural balance sheet insurance risk management framework and secured financing transactions.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Insurance Risk

Insurance risk is the potential for loss as a result of actual experience differing from that assumed when an insurance product was designed and priced, and comprises claims risk, policyholder behaviour risk and expense risk.

Insurance risk generally entails the inherent unpredictability that can arise from the assumption of long-term policy liabilities or from uncertainty regarding future events. Insurance provides protection against the financial consequences of insured risks by transferring those risks to the insurer (under specific terms and conditions) in exchange for premiums. Insurance risk is inherent in all of our insurance products: life insurance, annuities (which include the pension risk transfer business), accident and sickness insurance, and creditor insurance, as well as the reinsurance business. Insurance risk consists of:

- Claims risk – the risk that the actual magnitude or frequency of claims will differ from those assumed in the pricing or underwriting process, including mortality risk, morbidity risk, longevity risk and catastrophe risk;
- Policyholder behaviour risk – the risk that the behaviour of policyholders in regard to premium payments, withdrawals or loans, policy lapses and surrenders, and other voluntary terminations will differ from the behaviour assumed in the pricing process; and
- Expense risk – the risk that actual expenses arising from acquiring and administering policies and processing claims will exceed the expenses assumed in the pricing process.

Our risk governance practices provide effective independent oversight and control of risk within BMO Insurance. BMO Insurance's risk management framework addresses the identification, assessment, management and reporting of risks. The framework includes: the Risk Appetite Statement and key risk metrics; insurance risk policies and processes, including limits; capital requirements; stress testing; risk reports; the Own Risk and Solvency Assessment; and ongoing monitoring of experience. Senior management within the various lines of business uses this framework as the first line of defence, and has the primary responsibility for managing insurance risk. Second-line-of-defence oversight is provided by the CRO, BMO Insurance, who reports to the Head of Market Risk and Chief Risk Officer, BMO Capital Markets. Internal risk committees, the boards of directors of the BMO Insurance subsidiaries and senior management provide senior governance and review. In particular, the Risk Committee of BMO Insurance oversees and reports on risk management activities on a quarterly basis to the insurance companies' boards of directors. In addition, the Audit and Conduct Review Committee of the Board acts as the Audit and Conduct Review Committee for BMO Life Insurance Company.

A robust product approval process is a cornerstone of the BMO Insurance risk management framework, as it identifies, assesses and mitigates risks associated with new insurance products or changes to existing products. This process, along with guidelines and practices for underwriting and claims management, promotes the effective identification, assessment and management of insurance risk. Reinsurance transactions that transfer insurance risk from BMO Insurance to independent reinsurance companies also mitigate exposure to insurance risk by diversifying risk and limiting claims. BMO Insurance has exited the Property & Casualty Reinsurance market, with the last remaining treaty having terminated in January 2021, and this has significantly reduced our exposure to catastrophic claims. However, a certain portion of our exposure to the risk of catastrophic claims remains as the portfolio runs off and until all outstanding claims that were made prior to the treaty termination dates are settled and paid.

Given that much of the life insurance portfolio is reinsured and that we have a well-balanced portfolio of life insurance products and annuities forming a natural hedge for exposures to insurance risk, claims related to the COVID-19 pandemic have not had a material impact on BMO Insurance's financial results to date. As part of our overall Risk Management Framework within BMO Insurance, claims related to the COVID-19 pandemic continue to be tracked separately from other types of claims.

Caution
This Insurance Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Liquidity and Funding Risk

Liquidity and funding risk is the potential for loss if we are unable to meet our financial commitments in a timely manner at reasonable prices as they become due. Financial commitments include liabilities to depositors and suppliers, and lending, investment and pledging commitments.

Managing liquidity and funding risk is integral to maintaining enterprise soundness and safety, depositor confidence and earnings stability. It is BMO's policy to maintain sufficient liquid assets and funding capacity to meet our financial commitments, even in times of stress.

Liquidity and Funding Risk Governance

The Corporate Treasury group and the operating groups, as the first line of defence, are responsible for the ongoing identification, assessment and management of liquidity and funding risk. The Corporate Treasury group is responsible for monitoring and reporting liquidity and funding risk across the enterprise, and develops and recommends for approval the Liquidity and Funding Risk Management Framework and the related risk appetite and limits, monitors compliance with relevant corporate policies, and assesses the impact of market events on liquidity and funding requirements on an ongoing basis.

Enterprise Risk and Portfolio Management, as the second line of defence, provides oversight, independent risk assessment and effective challenge of liquidity and funding management frameworks, policies, limits, monitoring and reporting across the enterprise.

The Risk Management Committee (RMC) and Balance Sheet Committee (BSC) provide senior management oversight and also review and discuss significant liquidity and funding policies, issues and developments that arise in the pursuit of BMO's strategic priorities. The Risk Review Committee (RRC) provides oversight of the management of liquidity and funding risk, annually approves the applicable policies, limits and contingency plan, and regularly reviews liquidity and funding positions.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Liquidity and Funding Risk Management

BMO's Liquidity and Funding Risk Management Framework is defined and authorized under Board-approved corporate policies and management-approved standards. These policies and standards set out key management principles, liquidity and funding metrics and related limits, as well as roles and responsibilities for the management of liquidity and funding risk across the enterprise.

We have a robust limit structure in place in order to manage liquidity and funding risk. Limits define the risk appetite for the key Stress Net Liquidity Position (Stress NLP) measure, regulatory liquidity ratios, secured and unsecured funding appetite (for both trading and structural activities), and enterprise collateral pledging. Limits also establish the tolerance for concentrations of maturities, as well as requirements for counterparty liability diversification, business pledging activity, and the size and type of uncommitted and committed credit and liquidity facilities that may be outstanding.

Operating within these limits helps to confirm that liquidity and funding risk is appropriately managed. An enterprise-wide contingency plan designed to facilitate effective management in the event of a disruption is also in place. Early warning indicators identified in the contingency plan are regularly monitored in order to detect any signs of rising levels of liquidity or funding risk in the market, or other risks specific to BMO.

BMO legal entities include regulated and foreign subsidiaries and branches, and as a result, movements of funds between entities in the corporate group are subject to, among other things, the liquidity, funding and capital adequacy requirements of these entities. As such, liquidity and funding positions are managed on both a consolidated and key legal entity basis. Liquidity and funding risk management policies and limits, which are informed by the laws and regulations that apply to each entity, are in place for key legal entities, and positions are regularly reviewed at the key legal entity level to confirm compliance with applicable laws and regulations.

We managed liquidity and funding risk appropriately during 2021, as customer deposit flows were robust throughout the year, while loan volumes increased in the second half of the year, reflecting an increase in our customers' borrowing activities. Our liquidity metrics, including the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR), exceeded internal and regulatory requirements throughout 2021.

Liquidity and Funding Risk Measurement

A key component of liquidity risk management is the measurement of liquidity risk under stress. We use Stress NLP as a key measure of liquidity risk. Stress NLP represents the amount by which liquid assets exceed potential funding needs under a severe combined enterprise-specific and systemic stress scenario. Potential funding needs may arise from obligations to repay retail, commercial and wholesale deposits that are withdrawn or not renewed, or to fund drawdowns on available credit and liquidity lines, as well as from obligations to pledge collateral due to ratings downgrades or market volatility, along with the continuing need to fund new assets and strategic investments. Potential funding needs are quantified by applying factors to various business activities based on management's view of the relative level of liquidity risk related to each activity. These factors vary by deposit or classification (e.g., retail, small business, non-financial corporate or wholesale counterparties) and deposit type (e.g., insured, uninsured, operational or non-operational deposits), as well as by commitment type (e.g., uncommitted or committed credit or liquidity facilities by counterparty type). The stress scenario also considers the time horizon over which liquid assets can be monetized and management's assessment of the liquidity value of those assets under conditions of market stress. These funding needs are assessed under severe systemic and enterprise-specific stress scenarios, and a combination thereof.

Stress testing results are evaluated against our stated risk tolerance and are considered in management decisions on limit-setting and internal liquidity transfer pricing, and they also help to inform and shape the design of business plans and contingency plans. The Liquidity and Funding Risk Management Framework is integrated with enterprise-wide stress testing.

In addition to Stress NLP, we regularly monitor positions in relation to the limits and liquidity ratios noted in the Liquidity and Funding Risk Management section above. These include regulatory metrics such as the LCR, Net Cumulative Cash Flow and NSFR.

Unencumbered Liquid Assets

Unencumbered liquid assets include high-quality assets that are marketable, can be pledged as security for borrowings, and can be converted to cash in a time frame that meets liquidity and funding requirements. Liquid assets are primarily held in our trading businesses, as well as in supplemental liquidity pools that are maintained for contingent liquidity risk management purposes. The liquidity value recognized for different asset classes under BMO's risk management framework reflects management's assessment of the liquidity value of those assets under a severe stress scenario. Liquid assets held in our trading businesses include cash on deposit with central banks, short-term deposits with other financial institutions, highly-rated debt securities, equity securities and short-term reverse repurchase agreements. Supplemental liquidity pool assets predominantly comprise cash on deposit with central banks, securities and short-term reverse repurchase agreements of highly-rated Canadian federal and provincial government debt and U.S. federal government and agency debt. Substantially all supplemental liquidity pool assets meet the definition of high-quality liquid assets under Basel III. Approximately 65% of the supplemental liquidity pool is held at the parent bank level in assets denominated in Canadian dollars or U.S. dollars, with the majority of the remaining supplemental liquidity pool held at our U.S. bank entity, BMO Harris Bank, in U.S.-dollar-denominated assets. The size of the supplemental liquidity pool is integrated with our assessment of liquidity risk. To meet local regulatory requirements, certain legal entities maintain their own minimum liquidity positions. There may be legal and regulatory restrictions on BMO's ability to use liquid assets held at one legal entity to support the liquidity requirements of another legal entity.

In the ordinary course of business, we may encumber a portion of cash and securities holdings as collateral in support of trading activities and participation in clearing and payment systems in Canada and abroad. In addition, we may receive liquid assets as collateral and may re-pledge these assets in exchange for cash or as collateral in support of trading activities. Net unencumbered liquid assets, defined as on-balance sheet assets, such as BMO-owned cash and securities and securities borrowed or purchased under resale agreements, plus other off-balance sheet eligible collateral received, less collateral encumbered, totalled $317.3 billion as at October 31, 2021, compared with $306.1 billion as at October 31, 2020. The increase in unencumbered liquid assets was primarily due to higher cash balances, partially offset by lower securities balances. Net unencumbered liquid assets are primarily held at the parent bank level, at BMO Harris Bank, and in our broker/dealer operations. In addition to liquid assets, we have access to the Bank of Canada's lending assistance programs, the Federal Reserve Bank discount window in the United States, and European Central Bank standby liquidity facilities. We do not rely on central bank facilities as a source of available liquidity when assessing the soundness of our liquidity position.

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In addition to cash and securities holdings, we may also pledge other assets, including mortgages and loans, to raise long-term secured funding. As part of the Liquidity and Funding Risk Management Framework, a Pledging of Assets Corporate Policy sets out the framework and pledging limits for financial and non-financial assets.

BMO's total encumbered assets and unencumbered liquid assets are summarized in the table below. Refer to Note 24 of the consolidated financial statements for further information on pledged assets.

Liquid Assets

	As at October 31, 2021					As at October 31, 2020
(Canadian $ in millions)	Bank-owned assets	Other cash and securities received	Total gross assets (1)	Encumbered assets	Net unencumbered assets (2)	Net unencumbered assets (2)
Cash and cash equivalents	**93,261**	**–**	**93,261**	**110**	**93,151**	57,297
Deposits with other banks	**8,303**	**–**	**8,303**	**–**	**8,303**	9,035
Securities and securities borrowed or purchased under resale agreements						
Sovereigns / Central banks / Multilateral development banks	**95,213**	**98,488**	**193,701**	**117,291**	**76,410**	105,295
NHA mortgage-backed securities and U.S. agency mortgage-backed securities and collateralized mortgage obligations	**54,757**	**5,641**	**60,398**	**19,976**	**40,422**	36,844
Corporate and other debt	**22,557**	**21,513**	**44,070**	**8,740**	**35,330**	33,985
Corporate equity	**60,322**	**55,063**	**115,385**	**66,876**	**48,509**	47,465
Total securities and securities borrowed or purchased under resale agreements	**232,849**	**180,705**	**413,554**	**212,883**	**200,671**	223,589
NHA mortgage-backed securities (reported as loans at amortized cost) (3)	**19,645**	**–**	**19,645**	**4,519**	**15,126**	16,199
Total liquid assets	**354,058**	**180,705**	**534,763**	**217,512**	**317,251**	306,120

(1) Gross assets include bank-owned assets and cash and securities received from third parties.
(2) Net unencumbered liquid assets are defined as total gross assets less encumbered assets.
(3) Under IFRS, National Housing Act (NHA) mortgage-backed securities that include mortgages owned by BMO as the underlying collateral are classified as loans. Unencumbered NHA mortgage-backed securities have liquidity value and are included as liquid assets under BMO's Liquidity and Funding Management Framework. This amount is shown as a separate line item, NHA mortgage-backed securities.

Asset Encumbrance

		Encumbered (2)		Net unencumbered	
(Canadian $ in millions) As at October 31, 2021	Total gross assets (1)	Pledged as collateral	Other encumbered	Other unencumbered (3)	Available as collateral (4)
Cash and deposits with other banks	**101,564**	**–**	**110**	**–**	**101,454**
Securities (5)	**433,199**	**180,955**	**36,447**	**13,064**	**202,733**
Loans	**438,617**	**53,485**	**1,171**	**238,283**	**145,678**
Other assets					
Derivative instruments	**36,713**	**–**	**–**	**36,713**	**–**
Customers' liability under acceptances	**14,021**	**–**	**–**	**14,021**	**–**
Premises and equipment	**4,454**	**–**	**–**	**4,454**	**–**
Goodwill	**5,378**	**–**	**–**	**5,378**	**–**
Intangible assets	**2,266**	**–**	**–**	**2,266**	**–**
Current tax assets	**1,588**	**–**	**–**	**1,588**	**–**
Deferred tax asset	**1,287**	**–**	**–**	**1,287**	**–**
Other assets	**22,411**	**6,436**	**–**	**15,975**	**–**
Total other assets	**88,118**	**6,436**	**–**	**81,682**	**–**
Total assets	**1,061,498**	**240,876**	**37,728**	**333,029**	**449,865**

		Encumbered (2)		Net unencumbered	
(Canadian $ in millions) As at October 31, 2020	Total gross assets (1)	Pledged as collateral	Other encumbered	Other unencumbered (3)	Available as collateral (4)
Cash and deposits with other banks	66,443	–	111	–	66,332
Securities (5)	425,777	149,955	36,034	12,766	227,022
Loans	425,100	58,168	806	227,830	138,296
Other assets					
Derivative instruments	36,815	–	–	36,815	–
Customers' liability under acceptances	13,493	–	–	13,493	–
Premises and equipment	4,183	–	–	4,183	–
Goodwill	6,535	–	–	6,535	–
Intangible assets	2,442	–	–	2,442	–
Current tax assets	1,260	–	–	1,260	–
Deferred tax asset	1,473	–	–	1,473	–
Other assets	23,059	6,344	–	16,715	–
Total other assets	89,260	6,344	–	82,916	–
Total assets	1,006,580	214,467	36,951	323,512	431,650

(1) Gross assets include on-balance sheet and off-balance sheet assets.
(2) Pledged as collateral refers to the portion of on-balance sheet assets and other cash and securities that is pledged through repurchase agreements, securities lending, derivative contracts, minimum required deposits at central banks, and requirements associated with participation in clearing houses and payment systems. Other encumbered assets include assets that are restricted for legal or other reasons, such as restricted cash and short sales.
(3) Other unencumbered assets include select liquid asset holdings that management believes are not readily available to support BMO's liquidity requirements. These include securities of $13.1 billion as at October 31, 2021, which include securities held at BMO's insurance subsidiary, significant equity investments and certain investments held at BMO's merchant banking business. Other unencumbered assets include mortgages and loans that may be securitized to access secured funding.
(4) Loans included in available as collateral represent loans currently lodged at central banks that could potentially be used to access central bank funding. Loans available for pledging as collateral do not include other sources of additional liquidity that may be realized from BMO's loan portfolio, such as incremental securitization, covered bond issuances and FHLB advances.
(5) Includes securities, securities borrowed or purchased under resale agreements and NHA mortgage-backed securities (reported as loans at amortized cost).

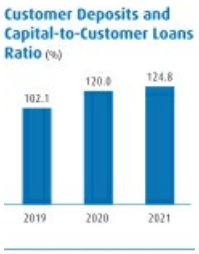
Certain comparative figures have been reclassified to conform with the current year's presentation.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

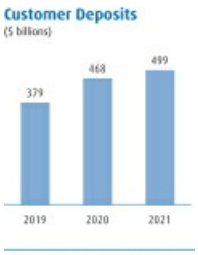
Funding Strategy

BMO's funding strategy requires that secured and unsecured wholesale funding used to support loans and less liquid assets must have a term (typically maturing in two to ten years) that will support the effective term to maturity of these assets. Secured and unsecured wholesale funding for liquid trading assets is largely shorter term (maturing in one year or less), is aligned with the liquidity of the assets being funded, and is subject to limits on aggregate maturities that are permitted across different periods. Supplemental liquidity pools are funded largely with wholesale term funding.

We maintain a large and stable base of customer deposits that, in combination with our strong capital base, is a source of strength. This supports the maintenance of a sound liquidity position and reduces reliance on wholesale funding. Customer deposits totalled $498.9 billion as at October 31, 2021, increasing from $468.0 billion in 2020, with strong growth across both retail and commercial deposits. We also receive non-marketable deposits from corporate and institutional customers in support of certain trading activities. These deposits totalled $26.0 billion as at October 31, 2021, an increase from $22.8 billion as at October 31, 2020.



Our large customer base and strong capital position reduce our reliance on wholesale funding.



Customer deposits provide a strong funding base.

Total secured and unsecured wholesale funding outstanding, which largely consists of negotiable marketable securities, was $190.4 billion as at October 31, 2021, with $48.8 billion sourced as secured funding and $141.6 billion sourced as unsecured funding. Total wholesale funding outstanding was largely unchanged from the prior year. The mix and maturities of BMO's wholesale term funding are outlined later in this section. Additional information on deposit maturities can be found. We maintain a sizeable portfolio of unencumbered liquid assets, totalling $317.3 billion as at October 31, 2021 and $306.1 billion as at October 31, 2020, that can be monetized to meet potential funding requirements, as described in the Unencumbered Liquid Assets section.

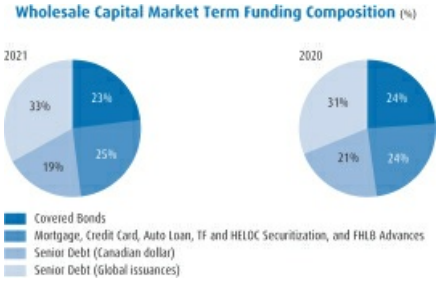
Wholesale Funding Maturities (1)

	As at October 31, 2021								As at October 31, 2020
(Canadian $ in millions)	Less than 1 month	1 to 3 months	3 to 6 months	6 to 12 months	Subtotal less than 1 year	1 to 2 years	Over 2 years	Total	Total
Deposits from banks	**2,861**	**463**	**95**	**2**	**3,421**	**–**	**–**	**3,421**	6,760
Certificates of deposit and commercial paper	**6,812**	**18,006**	**22,399**	**24,650**	**71,867**	**31**	**–**	**71,898**	59,298
Bearer deposit notes	**705**	**659**	**1,000**	**–**	**2,364**	**–**	**–**	**2,364**	2,502
Asset-backed commercial paper (ABCP)	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	3,167
Senior unsecured medium-term notes	**1,430**	**593**	**4,923**	**5,079**	**12,025**	**11,292**	**28,520**	**51,837**	56,480
Senior unsecured structured notes (2)	**–**	**–**	**2**	**–**	**2**	**65**	**5,115**	**5,182**	3,221
Covered bonds and securitizations									
Mortgage and HELOC securitizations	**–**	**352**	**1,275**	**892**	**2,519**	**4,466**	**13,143**	**20,128**	20,394
Covered bonds	**–**	**2,166**	**–**	**3,596**	**5,762**	**10,677**	**6,966**	**23,405**	24,632
Other asset-backed securitizations (3)	**–**	**1,313**	**–**	**73**	**1,386**	**2,019**	**1,911**	**5,316**	6,255
Subordinated debt	**–**	**–**	**–**	**–**	**–**	**–**	**6,892**	**6,892**	8,416
Total	**11,808**	**23,552**	**29,694**	**34,292**	**99,346**	**28,550**	**62,547**	**190,443**	191,125
Of which:									
Secured	**–**	**3,831**	**1,275**	**4,561**	**9,667**	**17,162**	**22,020**	**48,849**	54,448
Unsecured	**11,808**	**19,721**	**28,419**	**29,731**	**89,679**	**11,388**	**40,527**	**141,594**	136,677
Total (4)	**11,808**	**23,552**	**29,694**	**34,292**	**99,346**	**28,550**	**62,547**	**190,443**	191,125

(1) Wholesale unsecured funding primarily includes funding raised through the issuance of marketable, negotiable instruments. Wholesale funding excludes deposits and covered bonds issued to access central bank programs, repo transactions and bankers' acceptances, which are disclosed in the Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments section and also excludes ABCP issued by certain ABCP conduits that are not consolidated for financial reporting purposes. Effective Q4-2021, one of the ABCP conduits that we had previously consolidated is no longer consolidated and therefore is not included in this table.
(2) Primarily issued to institutional investors.
(3) Includes credit card, auto and transportation finance loan securitizations.
(4) Total wholesale funding consists of Canadian-dollar-denominated funding totalling $47.3 billion and U.S.-dollar-denominated and other foreign-currency-denominated funding totalling $143.1 billion as at October 31, 2021.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

Diversification of our wholesale term funding sources is an important part of our overall liquidity management strategy. Our wholesale term funding activities are well-diversified by jurisdiction, currency, investor segment, instrument type and maturity profile. We maintain ready access to long-term wholesale funding through various borrowing programs, including a European Note Issuance Program, Canadian, Australian and U.S. Medium-Term Note programs, Canadian and U.S. mortgage securitizations, Canadian credit card loans, auto loans and home equity line of credit (HELOC) securitizations, U.S. transportation finance loans, covered bonds, and Canadian and U.S. senior unsecured deposits.



Our wholesale term funding plan seeks to ensure sufficient funding capacity is available to execute business strategies. The funding plan considers expected maturities, as well as asset and liability growth projected for businesses in our forecasting and planning processes, and assesses funding needs in relation to the sources available. The funding plan is reviewed annually by the BSC and RMC and approved by the RRC, and is regularly updated to reflect actual results and incorporate updated forecast information.

In April 2018, the Government of Canada published the final regulations on Canada's Bank Recapitalization(Bail-In) Regime, which became effective on September 23, 2018. Bail-in debt includes senior unsecured debt issued directly by BMO, on or after September 23, 2018, that has an original term greater than 400 days and is marketable, subject to certain exceptions. We are required to meet minimum Total Loss Absorbing Capacity (TLAC) Ratio requirements effective November 1, 2021. Our TLAC Ratio exceeds the regulatory minimum as at October 31, 2021. For more information on Canada's Bail-In Regime and TLAC requirements, refer to Regulatory Capital Developments under Enterprise-Wide Capital Management.

Credit Ratings

The credit ratings assigned to BMO's short-term and senior long-term debt securities by external rating agencies are important for the bank in raising both capital and funding to support its business operations. Maintaining strong credit ratings allows us to access the wholesale markets at competitive pricing levels. Should BMO's credit ratings experience a downgrade, our cost of funding would likely increase and our access to funding and capital through the wholesale markets could be reduced. A material downgrade of BMO's ratings could also have other consequences, including those set out in Note 8 of the consolidated financial statements.

The credit ratings assigned to BMO's senior debt by rating agencies are indicative of high-grade, high-quality issues. During the third quarter of fiscal 2021, Moody's, Standard & Poor's (S&P), DBRS and Fitch affirmed their ratings for BMO. Moody's, S&P and DBRS have a stable outlook on BMO and Fitch has a negative outlook.

As at October 31, 2021

Rating agency	Short-term debt	Senior debt (1)	Long-term deposits / Legacy senior debt (2)	Subordinated debt (NVCC)	Outlook
Moody's	P-1	A2	Aa2	Baa1(hyb)	Stable
S&P	A-1	A-	A+	BBB+	Stable
Fitch	F1+	AA-	AA	A	Negative
DBRS	R-1 (high)	AA (low)	AA	A (low)	Stable

(1) Subject to conversion under the Bank Recapitalization (Bail-In) Regime.
(2) Long-term deposits / Legacy senior debt includes senior debt issued prior to September 23, 2018 and senior debt issued on or after September 23, 2018 that is excluded from the Bank Recapitalization (Bail-In) Regime.

We are required to deliver collateral to certain counterparties in the event of a downgrade of BMO's current credit rating. The incremental collateral required is based on mark-to-market exposure, collateral valuations and collateral threshold arrangements, as applicable. As at October 31, 2021, we would be required to provide additional collateral to counterparties totalling $142 million, $354 million and $762 million as a result of a one-notch, two-notch and three-notch downgrade, respectively.

Liquidity Coverage Ratio

The Liquidity Coverage Ratio (LCR) is calculated in accordance with OSFI's Liquidity Adequacy Requirements Guideline and is summarized in the following table. The average daily LCR for the quarter ended October 31, 2021 was 125%. The LCR is calculated on a daily basis as the ratio of the stock of High-Quality Liquid Assets (HQLA) held to total net stressed cash outflows over the next 30 calendar days. The average daily LCR in fiscal 2021 decreased from 131% in the fourth quarter of the prior year, primarily due to a decrease in HQLA and higher net cash outflows. While banks are required to maintain an LCR greater than 100% in normal conditions, they are also expected to be able to utilize HQLA during a period of stress, which may result in an LCR of less than 100% during such a period. BMO's HQLA primarily comprise cash, highly-rated debt issued or backed by governments, highly-rated covered bonds and non-financial corporate debt, and non-financial equities that are part of a major stock index. Net cash flows include outflows from deposits, secured and unsecured wholesale funding, commitments and potential collateral requirements, offset by permitted inflows from loans, securities lending activities and other non-HQLA debt maturing over a 30-day horizon. Weightings prescribed by the Office of the Superintendent of Financial Institutions (OSFI) are applied to cash flows and HQLA to arrive at the weighted values and the LCR. The LCR is only one measure of a bank's liquidity position and does not fully capture all of its liquid assets or the funding alternatives that may be available during a period of stress. BMO's total liquid assets are shown in the Liquid Assets table.

	For the quarter ended October 31, 2021	
(Canadian $ in billions, except as noted)	**Total unweighted value (average)** (1) (2)	**Total weighted value (average)** (2) (3)
High-Quality Liquid Assets		
Total high-quality liquid assets (HQLA)	*	**194.4**
Cash Outflows		
Retail deposits and deposits from small business customers, of which:	**231.3**	**15.4**
Stable deposits	**114.3**	**3.4**
Less stable deposits	**117.0**	**12.0**
Unsecured wholesale funding, of which:	**259.2**	**124.0**
Operational deposits (all counterparties) and deposits in networks of cooperative banks	**128.9**	**32.1**
Non-operational deposits (all counterparties)	**103.1**	**64.7**
Unsecured debt	**27.2**	**27.2**
Secured wholesale funding	*	**22.5**
Additional requirements, of which:	**178.8**	**34.7**
Outflows related to derivatives exposures and other collateral requirements	**11.7**	**4.4**
Outflows related to loss of funding on debt products	**1.9**	**1.9**
Credit and liquidity facilities	**165.2**	**28.4**
Other contractual funding obligations	**1.2**	**–**
Other contingent funding obligations	**425.0**	**8.1**
Total cash outflows	*	**204.7**
Cash Inflows		
Secured lending (e.g., reverse repos)	**138.9**	**33.4**
Inflows from fully performing exposures	**8.6**	**4.7**
Other cash inflows	**10.6**	**10.6**
Total cash inflows	**158.1**	**48.7**
		Total adjusted value (4)
Total HQLA		**194.4**
Total net cash outflows		**156.0**
Liquidity Coverage Ratio (%)		**125**
For the quarter ended October 31, 2020		Total adjusted value (4)
Total HQLA		197.5
Total net cash outflows		150.7
Liquidity Coverage Ratio (%)		131

* Disclosure is not required under the LCR disclosure standard.

(1) Unweighted values are calculated at market value (for HQLA) or as outstanding balances maturing or callable within 30 days (for inflows and outflows).

(2) Values are calculated based on the simple average of the daily LCR over 61 business days in the fourth quarter of 2021.

(3) Weighted values are calculated after the application of the weightings prescribed under the OSFI Liquidity Adequacy Requirements (LAR) Guideline for HQLA and cash inflows and outflows.

(4) Adjusted values are calculated based on total weighted values after applicable caps, as defined in the LAR Guideline.

Net Stable Funding Ratio

The Net Stable Funding Ratio (NSFR) is a regulatory liquidity metric that assesses the stability of a bank's funding profile in relation to the liquidity value of its assets and is calculated in accordance with OSFI's Liquidity Adequacy Requirements Guideline. The NSFR is defined as the ratio between the amount of available stable funding (ASF) and the amount of required stable funding (RSF). ASF represents the proportion of own and third-party resources that are expected to be reliably available over a one-year horizon (including customer deposits and long-term wholesale funding). Unlike the LCR, which is a short-term metric, the NSFR assesses a bank's medium-term and long-term resilience. The stable funding requirements for each institution are set by OSFI based on the liquidity and maturity characteristics of its balance sheet assets and off-balance sheet exposures. Weightings prescribed by OSFI are applied to notional asset and liability balances to determine ASF and RSF and the NSFR. Canadian domestic systemically important banks (D-SIBs), including BMO, are required to maintain a minimum NSFR of 100%, effective January 1, 2020, and to publicly disclose their NSFR, effective in the quarter ended January 31, 2021. BMO's NSFR was 118% as at October 31, 2021, exceeding the regulatory minimum.

	For the quarter ended October 31, 2021				
	Unweighted value by residual maturity				
(Canadian $ in billions, except as noted)	No maturity (1)	Less than 6 months	6 to 12 months	Over 1 year	Weighted value (2)
Available Stable Funding (ASF) Item					
Capital:	–	–	–	65.2	65.2
Regulatory capital	–	–	–	65.1	65.1
Other capital instruments	–	–	–	0.1	0.1
Retail deposits and deposits from small business customers:	211.3	28.4	12.1	31.0	263.2
Stable deposits	105.4	13.9	6.1	6.3	125.4
Less stable deposits	105.9	14.5	6.0	24.7	137.8
Wholesale funding:	237.8	184.9	39.3	72.3	201.8
Operational deposits	131.4	–	–	–	65.7
Other wholesale funding	106.4	184.9	39.3	72.3	136.1
Liabilities with matching interdependent assets	–	1.6	0.9	14.3	–
Other liabilities:	2.0	*	*	45.8	5.0
NSFR derivative liabilities	*	*	*	8.1	*
All other liabilities and equity not included in the above categories	2.0	32.6	0.2	4.9	5.0
Total ASF	*	*	*	*	535.2
Required Stable Funding (RSF) Item					
Total NSFR high-quality liquid assets (HQLA)	*	*	*	*	22.9
Deposits held at other financial institutions for operational purposes	–	–	–	–	–
Performing loans and securities:	147.1	133.4	46.0	251.8	372.2
Performing loans to financial institutions secured by Level 1 HQLA	–	50.8	1.9	–	3.5
Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions	24.3	51.0	7.7	10.8	44.7
Performing loans to non-financial corporate clients, loans to retail and small business customers, and loans to sovereigns, central banks and PSEs, of which:	87.0	25.6	25.0	119.0	196.7
With a risk weight of less than or equal to 35% under the Basel II standardized approach for credit risk	–	–	–	–	–
Performing residential mortgages, of which:	12.6	5.0	11.3	111.2	97.9
With a risk weight of less than or equal to 35% under the Basel II standardized approach for credit risk	12.6	4.7	11.0	108.5	95.0
Securities that are not in default and do not qualify as HQLA, including exchange-traded equities	23.2	1.0	0.1	10.8	29.4
Assets with matching interdependent liabilities	–	1.6	0.9	14.3	–
Other assets:	15.7	*	*	36.3	41.7
Physical traded commodities, including gold	3.4	*	*	*	2.9
Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs	*	*	*	10.6	9.0
NSFR derivative assets	*	*	*	9.8	1.7
NSFR derivative liabilities before deduction of variation margin posted	*	*	*	0.6	0.6
All other assets not included in the above categories	12.3	2.4	0.2	12.7	27.5
Off-balance sheet items	*	*	*	469.7	16.6
Total RSF	*	*	*	*	453.4
Net Stable Funding Ratio (%)	*	*	*	*	118

* Disclosure is not required under the NSFR disclosure standard.

(1) Items to be reported in the "no maturity" column do not have a stated maturity. These may include, but are not limited to, items such as non-maturity deposits, short positions, open maturity positions, non-HQLA equities, physical traded commodities and demand loans.

(2) Weighted values are calculated after the application of the weights prescribed under the OSFI LAR Guideline for ASF and RSF.

Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments

The tables below show the remaining contractual maturities of on-balance sheet assets and liabilities and off-balance sheet commitments. The contractual maturity of financial assets and liabilities is an input to, but is not necessarily consistent with, the expected maturity of assets and liabilities that is used in the management of liquidity and funding risk. We forecast asset and liability cash flows, under both normal market conditions and a number of stress scenarios, to manage liquidity and funding risk. Stress scenarios include assumptions for loan repayments, deposit withdrawals, and credit commitment and liquidity facility drawdowns by counterparty and product type. Stress scenarios also consider the time horizon over which liquid assets can be monetized and the related discounts ("haircuts") and potential collateral requirements that may result from both market volatility and credit rating downgrades, among other assumptions.

										2021
(Canadian $ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	Total
On-Balance Sheet Financial Instruments										
Assets										
Cash and cash equivalents	91,736	–	–	–	–	–	–	–	1,525	93,261
Interest bearing deposits with banks	3,529	1,440	1,172	1,753	409	–	–	–	–	8,303
Securities	5,286	4,742	5,116	3,383	2,692	17,512	43,571	90,225	60,322	232,849
Securities borrowed or purchased under resale agreements	70,080	22,873	11,362	1,602	766	699	–	–	–	107,382
Loans (1)										
Residential mortgages	458	1,081	2,109	4,373	4,879	22,170	91,146	9,396	138	135,750
Consumer instalment and other personal	215	419	639	1,166	1,110	5,732	31,613	13,518	22,752	77,164
Credit cards	–	–	–	–	–	–	–	–	8,103	8,103
Business and government	12,082	7,667	7,697	10,496	10,213	29,303	81,377	14,413	66,561	239,809
Allowance for credit losses	–	–	–	–	–	–	–	–	(2,564)	(2,564)
Total loans, net of allowance	12,755	9,167	10,445	16,035	16,202	57,205	204,136	37,327	94,990	458,262
Other Assets										
Derivative instruments	2,752	4,924	2,187	1,809	1,634	7,525	8,787	7,095	–	36,713
Customers' liability under acceptances	11,574	2,428	19	–	–	–	–	–	–	14,021
Other	2,002	461	140	4	3	5	1	5,097	29,671	37,384
Total other assets	16,328	7,813	2,346	1,813	1,637	7,530	8,788	12,192	29,671	88,118
Total Assets	199,714	46,035	30,441	24,586	21,706	82,946	256,495	139,744	186,508	988,175

										2021
(Canadian $ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	Total
Liabilities and Equity										
Deposits (2)(3)										
Banks	9,047	4,581	4,193	746	389	–	–	26	7,629	26,611
Business and government	16,894	26,861	29,665	21,345	16,213	24,249	35,707	17,113	254,201	442,248
Individuals	3,944	6,399	8,630	6,766	7,697	9,529	10,022	2,786	160,999	216,772
Total deposits	29,885	37,841	42,488	28,857	24,299	33,778	45,729	19,925	422,829	685,631
Other liabilities										
Derivative instruments	2,771	3,651	2,379	1,508	1,444	5,723	7,140	6,199	–	30,815
Acceptances	11,574	2,428	19	–	–	–	–	–	–	14,021
Securities sold but not yet purchased (4)	32,073	–	–	–	–	–	–	–	–	32,073
Securities lent or sold under repurchase agreements (4)	73,190	17,199	3,994	3,103	70	–	–	–	–	97,556
Securitization and structured entities' liabilities	21	1,737	1,527	648	486	7,240	9,791	4,036	–	25,486
Other	10,121	1,632	116	109	162	944	1,277	3,509	20,307	38,177
Total other liabilities	129,750	26,647	8,035	5,368	2,162	13,907	18,208	13,744	20,307	238,128
Subordinated debt	–	–	–	–	–	–	25	6,868	–	6,893
Total Equity	–	–	–	–	–	–	–	–	57,523	57,523
Total Liabilities and Equity	159,635	64,488	50,523	34,225	26,461	47,685	63,962	40,537	500,659	988,175

(1) Loans receivable on demand have been included under no maturity.
(2) Deposits payable on demand and payable after notice have been included under no maturity.
(3) Deposits totalling $20,991 million as at October 31, 2021 have a fixed maturity date; however, they can be redeemed early (either fully or partially) by customers without penalty. These are classified as payable on a fixed date due to their stated contractual maturity date. BMO does not expect a significant amount to be redeemed before maturity.
(4) Presented based on their earliest maturity date.

										2021
(Canadian $ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	Total
Off-Balance Sheet Commitments										
Commitments to extend credit (1)	1,674	4,935	8,374	13,308	14,498	33,749	99,639	4,571	–	180,748
Letters of credit (2)	1,196	4,083	4,358	3,815	4,806	1,980	3,304	104	–	23,646
Backstop liquidity facilities	189	137	293	1,073	1,578	2,709	6,088	828	–	12,895
Leases	–	–	–	–	1	3	22	222	–	248
Securities lending	3,909	–	–	–	–	–	–	–	–	3,909
Purchase obligations	16	38	47	44	60	139	217	41	–	602

(1) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at BMO's discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.
(2) Letters of credit can be drawn down at any time. These are classified based on their stated contractual maturity date.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

(Canadian $ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	2020 Total
On-Balance Sheet Financial Instruments										
Assets										
Cash and cash equivalents	56,434	–	–	–	–	–	–	–	974	57,408
Interest bearing deposits with banks	3,901	1,673	1,266	1,204	991	–	–	–	–	9,035
Securities	4,838	5,804	7,817	6,263	4,678	15,730	54,846	85,949	48,335	234,260
Securities borrowed or purchased under resale agreements	79,354	17,030	12,111	2,172	708	503	–	–	–	111,878
Loans (1)										
Residential mortgages	984	2,082	3,500	5,957	5,168	18,929	79,503	10,726	175	127,024
Consumer instalment and other personal	646	511	963	1,107	1,014	4,642	25,538	12,211	23,516	70,148
Credit cards	–	–	–	–	–	–	–	–	7,889	7,889
Business and government	13,708	10,000	9,083	15,951	9,465	34,171	76,163	14,819	62,302	245,662
Allowance for credit losses	–	–	–	–	–	–	–	–	(3,303)	(3,303)
Total loans, net of allowance	15,338	12,593	13,546	23,015	15,647	57,742	181,204	37,756	90,579	447,420
Other Assets										
Derivative instruments	3,400	5,472	2,111	1,140	915	4,369	9,393	10,015	–	36,815
Customers' liability under acceptances	9,609	3,633	251	–	–	–	–	–	–	13,493
Other	1,873	580	188	20	13	16	4	4,530	31,728	38,952
Total other assets	14,882	9,685	2,550	1,160	928	4,385	9,397	14,545	31,728	89,260
Total Assets	174,747	46,785	37,290	33,814	22,952	78,360	245,447	138,250	171,616	949,261

(Canadian $ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	2020 Total
Liabilities and Equity										
Deposits (2)(3)										
Banks	13,499	3,982	13,106	455	463	7	–	28	7,285	38,825
Business and government	24,056	21,813	33,713	13,862	17,567	20,070	45,287	11,129	213,182	400,679
Individuals	4,295	11,509	13,019	11,086	10,192	7,778	12,709	2,007	146,935	219,530
Total deposits	41,850	37,304	59,838	25,403	28,222	27,855	57,996	13,164	367,402	659,034
Other liabilities										
Derivative instruments	1,374	4,499	1,684	1,171	1,088	3,911	8,588	8,060	–	30,375
Acceptances	9,609	3,633	251	–	–	–	–	–	–	13,493
Securities sold but not yet purchased (4)	29,376	–	–	–	–	–	–	–	–	29,376
Securities lent or sold under repurchase agreements (4)	69,142	10,747	7,439	878	–	452	–	–	–	88,658
Securitization and structured entities' liabilities	30	1,656	334	2,810	1,169	4,946	12,577	3,367	–	26,889
Other	10,301	804	102	109	181	798	1,326	3,706	19,100	36,427
Total other liabilities	119,832	21,339	9,810	4,968	2,438	10,107	22,491	15,133	19,100	225,218
Subordinated debt	–	–	–	–	–	–	–	8,416	–	8,416
Total Equity	–	–	–	–	–	–	–	–	56,593	56,593
Total Liabilities and Equity	161,682	58,643	69,648	30,371	30,660	37,962	80,487	36,713	443,095	949,261

(1) Loans receivable on demand have been included under no maturity
(2) Deposits payable on demand and payable after notice have been included under no maturity.
(3) Deposits totalling $27,353 million as at October 31, 2020 have a fixed maturity date; however, they can be redeemed early (either fully or partially) by customers without penalty. These are classified as payable on a fixed date due to their stated contractual maturity date. BMO does not expect a significant amount to be redeemed before maturity.
(4) Presented based on their earliest maturity date.

Certain comparative figures have been reclassified to conform with the current year's presentation.

(Canadian $ in millions)	0 to 1 month	1 to 3 months	3 to 6 months	6 to 9 months	9 to 12 months	1 to 2 years	2 to 5 years	Over 5 years	No maturity	2020 Total
Off-Balance Sheet Commitments										
Commitments to extend credit (1)	1,859	5,662	11,251	12,499	14,681	33,239	101,078	3,654	–	183,923
Letters of credit (2)	1,019	3,793	4,355	3,708	4,861	2,481	3,849	112	–	24,178
Backstop liquidity facilities	–	–	–	–	–	–	5,601	–	–	5,601
Leases	–	–	3	3	3	38	158	786	–	991
Securities lending	4,349	–	–	–	–	–	–	–	–	4,349
Purchase obligations	14	27	38	38	56	162	179	62	–	576

(1) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at BMO's discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.
(2) Letters of credit can be drawn down at any time. These are classified based on their stated contractual maturity date.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Caution

This Liquidity and Funding Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Material presented in a blue-tinted font above is an integral part of Note 5 to the 2021 audited annual consolidated financial statements.

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Operational Non-Financial Risk

Operational non-financial risk (ONFR) encompasses a wide range of non-financial risks, including those related to business change, customer trust, reputation, and data that can result in financial loss. These losses can stem from inadequate or failed internal processes or systems, human error or misconduct, and external events that may directly or indirectly impact our credit or investment portfolios. These risks include technology risk, fraud risk, business continuity risk and human resources risk, but exclude legal and regulatory risk, credit risk, market risk, liquidity risk and other types of financial risk.

Operational non-financial risk is inherent in all of our business and banking activities and can lead to significant impacts on our operating and financial results, including financial loss, restatements and damage to BMO's reputation. Like other financial services organizations that operate in multiple jurisdictions, we are exposed to a variety of operational risks arising from the potential for failures of our internal processes, technology systems and employees, as well as from external threats. Potential losses may result from process and control failures, theft and fraud, unauthorized transactions by employees, regulatory non-compliance, business disruption, information security breaches, cyber security threats, exposure to risks related to third-party relationships, and damage to physical assets. Given the large volume of transactions that we process on a daily basis, and the complexity and speed of our business operations, there is a possibility that certain operational or human errors may be repeated or compounded before they are discovered and rectified.

ONFR is not only inherent in our business and banking activities, it is also inherent in the processes and controls used to manage risks. There is the possibility that errors will occur, as well as the possibility that a failure in our internal processes or systems could lead to financial loss and reputational harm. Shortcomings or

failures of internal processes, systems or employees, or of services and products provided by third parties, including any of our financial, accounting or other data processing systems, could lead to financial loss or restatements and damage BMO's reputation.

The nature of the business also exposes us to the risk of theft and fraud when we enter into credit transactions with customers or counterparties. In extending credit, BMO relies on the accuracy and completeness of any information provided by, and any other representations made by, customers and counterparties. While we conduct appropriate due diligence on such customer information and, where practicable and economically feasible, engage valuation experts and other experts or sources of information to assist in assessing the value of collateral and other customer risks, our financial results may be adversely impacted if the information provided by customers or counterparties is materially misleading and this is not discovered during the due diligence process.

We have established various risk management frameworks to manage and mitigate these risks, including internal controls, limits and governance processes. However, despite the contingency plans we have in place to maintain the ability to serve our clients and minimize disruptions and adverse impacts, and the contingency plans our third-party service providers have in place, our ability to conduct business may be adversely affected by a disruption to the infrastructure that supports both our operations and the communities in which we do business, including but not limited to disruption caused by public health emergencies or terrorist acts.

We regularly review our top and emerging risks, and assess our preparedness to proactively manage the risks we face or could face in the future. Consistent with the management of risk across the enterprise, we employ a three-lines-of-defence approach in managing our non-financial risk.

Refer to the Top and Emerging Risks That May Affect Future Results section for further discussion of these and other risks.

Operational Non-Financial Risk Governance

The Operational Risk Committee (ORC), a sub-committee of the Risk Management Committee (RMC), is the primary governance committee exercising oversight of all ONFR management matters. As part of its governance responsibilities, the ORC provides effective challenge to the corporate policies, standards, directives, operating guidelines, methodologies and tools that comprise the governing principles of the Non-Financial Risk Management Framework (NFRMF). The documentation that gives effect to these governing principles is reviewed on a regular basis in order to confirm that it incorporates sound governance practices and is consistent with BMO's risk appetite. Regular analysis and reporting of our enterprise operational risk profile to the various committees (ORC, RMC and Risk Review Committee (RRC)) are important elements of our risk governance framework. Enterprise operational risk reporting provides an integrated view of top and emerging risks, trends in loss data, capital consumption, key risk indicators and operating group profiles. We continue to invest in our reporting platforms and support timely and comprehensive reporting capabilities in order to enhance risk transparency and facilitate the proactive management of operational risk exposures.

Operational Non-Financial Risk Management

As the first line of defence, the operating groups and Corporate Services, including Technology and Operations, are accountable for the day-to-day management of non-financial risk, including the Chief Risk Officers of our businesses, who provide governance and oversight for their respective business units, together with Corporate Services, which provides additional governance and oversight in certain targeted areas. Independent risk management oversight is provided by the Operational Non-Financial Risk Management (ONFRM) team, which is responsible for ONFR strategy, tools and policies, and for second-line oversight, effective challenge and governance. ONFRM establishes and maintains the NFRMF, which defines the processes to be used by the first line of defence to identify, assess, manage, mitigate, monitor and report on key operational risk exposures, losses and near-miss operational risk events with significant potential impact. In addition, the NFRMF defines the processes by which ONFRM, as the second line of defence, guides, supports, monitors, assesses and communicates with the first line in its management of ONFR. Operational Risk Officers within ONFRM independently assess group operational risk profiles, identify material exposures and potential weaknesses in processes and controls, and recommend appropriate mitigation strategies and actions. Executing the NFRMF strategy also involves continuing to strengthen our risk culture by promoting greater awareness and understanding of non-financial risk across all three lines of defence, learning from loss events and near-misses, and providing related training and communication, as well as day-to-day execution and oversight of the NFRMF. We also continue to strengthen our second-line-of-defence support and oversight with an enhanced Non-Financial Risk Operating Model, which takes a differentiated approach based on the nature of the underlying risk and existing organizational structures.

Through the implementation and oversight of the NFRMF, we seek to maintain an operational risk profile that is consistent with our risk appetite and supported by adequate capital, while continuing to adapt to ongoing changes by focusing on enhanced operational resilience. Operational resilience is more than recovery from a disaster, it is the ability to identify and monitor risks in order to either prevent any related incidents or minimize their impact. It involves BMO's ability to deal with unpredictable events and adapt to changes in external circumstances.

Operational resilience is not a defensive strategy, but a positive, forward-looking strategic posture, which allows us to take measured risks with confidence and prepares us to withstand challenges in the market arising from both expected and unexpected events.

The following are the key programs, methodologies and processes set out in the NFRMF that assist us in the ongoing review of our operational risk profile:

- **Risk Control Self-Assessment** is an established process used by our operating groups to identify the key risks associated with their businesses and the controls required for risk mitigation. It provides a forward-looking view of the impact of the business environment and internal controls on operating group risk profiles, supporting the proactive prevention, mitigation and management of risk.
- BMO's **Initiative Assessment and Approval Process (IAAP)** is used to assess, document and approve qualifying initiatives when a new business, service or product is developed, or existing services and products are enhanced. The process addresses requirements for due diligence, approval, monitoring and reporting at all levels of the organization.
- Material trends, metrics and risk assessments comprising **Key Risk Indicators**, **Issues Management** and **Internal Loss Data Events** are integral components of the operational risk profile and are utilized to assess specific risk exposures in relation to BMO's overall risk appetite.
- **Scenario analysis** assesses the potential impact of severe negative events on key risks and critical business processes in order to inform risk management. Scenarios help management identify and understand the impact of large-scale events, including events that have a low frequency of occurrence but a high severity of impact, as well as environmental stresses, and develop mitigation measures or controls that will help manage tail risk.
- Effective **business continuity management** prepares us to recover, maintain and manage critical operations and processes in the event of a business disruption, thereby minimizing any adverse effects on our customers and other stakeholders.
- BMO's **Corporate Risk & Insurance team** provides a second layer of mitigation for certain operational risk exposures. We purchase insurance when required by law, regulation or contractual agreement, and when it is economically attractive and practicable to mitigate our risks, in order to provide adequate protection against unexpected material loss.

The following are examples of ONFR that may adversely affect BMO's business and financial results. As a result of the COVID-19 pandemic and the new remote working arrangements that have emerged for employees and third parties, a number of risks remain elevated, such as cyber security, information security and privacy risks. For more information, refer to the Top and Emerging Risks That May Affect Future Results section.

Cyber Security Risk

Information security is integral to BMO's business activities, brand and reputation. As technology rapidly evolves and the connectivity of devices expands, cyber threats and risks change. These threats and risks include breaches of, or disruptions to, our systems or operations, as well as unauthorized access, use or dissemination of our information or information pertaining to our customers or employees. We continue to build out the capabilities of our Financial Crimes Unit, demonstrating a commitment to bringing together cyber defence and fraud and physical security functions. In addition, we are enhancing processes to make them more resilient, while strengthening our ability to prevent, detect and recover from cyber security threats in order to keep our customers' and employees' data secure. We continue to examine and benchmark practices across our peer groups and other industries, conduct third-party assessments, develop and evaluate the effectiveness of our key controls, and invest in both technology and human resources. We also work with various third-party security and software suppliers to bolster our internal resources and technology capabilities in order to strengthen our resiliency in a rapidly evolving threat landscape.

Technology Disruption and Resiliency

Technology is the backbone of our operations, and we continue to innovate and invest in enhancing our technological capabilities in order to keep customers' data secure and to meet and exceed their expectations, as the adoption of digital banking continues to grow. In addition to existing technology risks, the COVID-19 pandemic has introduced unprecedented challenges and new emerging risks, as our clients, employees and suppliers have come to rely on technology platforms and the Internet of Things to manage and support their personal, business and investment banking activities. Given the extent to which BMO's operations rely on technology, it is important to maintain platforms that provide high levels of operational reliability and resiliency, particularly with respect to business-critical systems. Technology innovations, such as advanced data management, analytical tools and artificial intelligence, are being leveraged to provide insights that will improve the way we do business and serve our customers.

Third-Party Risk

BMO continues to use third parties in order to gain rapid access to new technologies, increase efficiencies, and improve competitiveness and performance. This increases our reliance on third parties and sub-contractors to effectively deliver products and services to our customers, and exposes us to the risk of business disruption and financial loss stemming from the breakdown of processes and controls at third parties and their sub-contractors. To manage this risk, we have in place an enterprise-wide risk management program designed to identify, assess, manage and report on risks stemming from the use of third parties through all stages of the third-party life cycle. This program is underpinned by a robust Third-Party Risk Management Framework that establishes minimum requirements for the identification, assessment, management, monitoring and reporting of this risk, in line with our organizational strategy and risk appetite. We continue to enhance our third-party risk management capabilities to help maintain robust risk management, operational resiliency and compliance with relevant regulatory requirements.

Anti-Money Laundering

Compliance with all Anti-Money Laundering, Anti-Terrorist Financing (AML/ATF) and sanctions measures is an integral part of safeguarding BMO, our customers and the communities in which we operate. We are committed to managing AML/ATF and sanctions risks effectively, and complying with all relevant laws and regulations. Risks related to non-compliance with these requirements can include enforcement action, legal action and damage to our reputation. Under the direction of the Chief Anti-Money Laundering Officer (CAMLO), BMO's AML/ATF and sanctions compliance program promotes effective governance and oversight across all of our businesses, and establishes appropriate policies, risk assessments and training, including mandatory annual training for all employees. BMO's AML/ATF and sanctions compliance program applies analytics, technology and professional expertise in order to deter, detect and report suspicious activity. The CAMLO regularly reports to the Audit and Conduct Review Committee (ACRC) of the Board of Directors and to senior management on the effectiveness of the AML compliance program. Amendments to Canada's AML/ATF regulations that came into effect in June 2021 are intended to improve the effectiveness of Canada's AML/ATF regime and further align it with international standards. We remain committed to effective compliance and the ongoing effort to protect the financial system and the communities in which we operate.

Model Risk

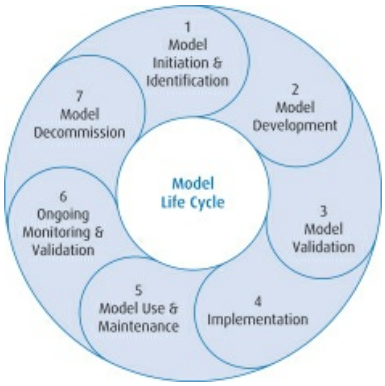
Model risk is the potential for adverse consequences resulting from decisions that are based on incorrect or misused model results. These adverse consequences can include financial loss, poor business decision-making and damage to reputation.

Model risk arises from the use of quantitative analytical tools that apply statistical, mathematical, economic, algorithmic or other advanced techniques, such as artificial intelligence (AI) and machine learning (ML), to process input data and generate quantitative estimates. We use these analytical tools, which range from very simple models that produce straightforward estimates to highly sophisticated models that value complex transactions or generate a broad range of forward-looking estimates. These models produce results that are used to inform business, risk and capital management decision-making, and to assist in making daily lending, trading, underwriting, funding, investment and operational decisions.

These quantitative analytical tools provide important insights and are effective when used within a framework that identifies key assumptions and limitations, while controlling and mitigating model risk. In addition to applying judgment to evaluate the reliability of model results, we mitigate model risk by maintaining strong controls over the development, validation, implementation and use of all our models across the enterprise. We also seek to ensure that qualitative model overlays and non-statistical approaches to evaluating risks are intuitive, experience-based, well-documented and subject to effective challenge by those with sufficient expertise and knowledge, in order to deliver reasonable results.

Model Risk Management Framework

Risk is inherent in models because model results are estimates which rely on statistical, mathematical or other quantitative techniques that approximate reality to transform data into estimates or forecasts of future outcomes. Model risk also arises from the potential for misuse of models or model results. Model risk is governed at BMO by the enterprise-wide Model Risk Management Framework.



The Model Risk Management Framework sets out an end-to-end approach for model risk governance across the model life cycle and helps manage model risk within the limits of our risk appetite. The framework includes BMO's Model Risk Corporate Policy, Model Risk Guidelines and supporting operating procedures, which outline explicit principles for managing model risk, detail model risk management processes, and define the roles and responsibilities of all stakeholders across the model life cycle. Model owners, developers and users serve as the first line of defence, while the Model Risk group is the second line of defence, and the Corporate Audit Division is the third line of defence.

Our Model Risk group is responsible for developing and maintaining a risk-based Model Risk Management Framework that meets regulatory expectations, as well as for oversight of the effectiveness of model processes, model inventory and the overall aggregation, assessment and reporting of model risk. This framework incorporates the management of risks arising from advances in automated decision-making, such as algorithmic trading, as well as AI and ML. Our Model Risk Management Committee (MRMC), a sub-committee of the RMC, is a cross-functional group representing all key stakeholders across the enterprise. The MRMC meets regularly to help direct BMO's use of models, to oversee the development, implementation and maintenance of the Model Risk Management Framework, to provide effective challenge and to discuss governance of the enterprise's models.

Outcomes Analysis and Back-Testing

Once models are validated, approved and in use, they are subject to ongoing monitoring, including outcomes analysis, at varying frequencies. As a key component of outcomes analysis, back-testing compares model results against actual observed outcomes. Variances between model forecasts and actual observed outcomes are measured against defined risk materiality thresholds and tolerance ranges, which may result in actions such as model review and parameter recalibration, as appropriate. This analysis serves to confirm the validity of a model's performance over time. Controls are in place to address identified issues and enhance our models' overall performance.

All models used within BMO are subject to validation and ongoing monitoring to confirm that they are being used in accordance with our framework. This framework applies to a wide variety of models, ranging from market, credit and non-financial risk models to stress testing, pricing and valuation, and anti-money laundering models.

Non-Financial Risk Measurement

Beginning in fiscal 2020, the Office of the Superintendent of Financial Institutions permitted BMO, along with other AMA-approved banks, to use the Basel II Standardized Approach for determining regulatory capital requirements for enterprise operational risk in the interim period prior to implementation of the new Standardized Measurement Approach, as part of the final Basel III reforms. We expect to transition to the new Basel III Standardized Measurement Approach for regulatory capital reporting in February 2023.

Caution

This Operational Non-Financial Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Legal and Regulatory Risk

Legal and regulatory risk is the potential for loss or harm resulting from a failure to comply with laws or satisfy contractual obligations or regulatory requirements. This includes the risk of failure to: comply with the law (in letter or in spirit) or maintain standards of care; implement legal or regulatory requirements; enforce or comply with contractual terms; assert non-contractual rights; effectively manage disputes; or act in a manner so as to maintain our reputation.

The success of BMO's business relies in part on our ability to manage our exposure to legal and regulatory risk. The financial services industry is highly regulated and subject to strict enforcement of legal and regulatory requirements. Banks globally continue to be subject to fines and penalties for a number of regulatory and conduct issues, and we are exposed to risks in connection with regulatory and governmental inquiries, investigations and enforcement actions. As rulemaking and supervisory expectations continue to evolve, we monitor developments to enable BMO to respond and implement changes as required.

Under the direction of BMO's General Counsel, our Legal & Regulatory Compliance group maintains enterprise-wide frameworks that identify, assess, manage, monitor and report on legal and regulatory issues. We identify applicable laws and regulations and potential risks, recommend mitigation strategies and actions, conduct internal investigations, and oversee legal proceedings and enforcement actions. BMO is subject to legal proceedings, including investigations by regulators, arising in the ordinary course of business, and the unfavourable resolution of any such legal proceedings could have a material adverse effect on our business, financial condition, results of operations, cash flows, capital position or credit ratings; require material changes in our operations; result in loss of customers; and damage our reputation. The volume of legal proceedings and the amount of damages and penalties assessed in such legal proceedings could increase in the future. We are required to disclose material legal proceedings to which we are a party. Our disclosure controls and procedures are designed to provide reasonable assurance that all relevant information is gathered and reported to senior management on a timely basis so that appropriate decisions can be made regarding public disclosure. In assessing the materiality of legal proceedings, factors considered include a case-by-case assessment of specific facts and circumstances, our past experience and the opinions of legal experts. However, some legal proceedings may be highly complex, and include novel or untested legal claims or theories. The outcome of such proceedings may be difficult to anticipate until late in the proceedings, which may last several years. Certain businesses are also subject to fiduciary requirements, including policies and practices that address the responsibilities of a business to a customer (such as service requirements and expectations, customer suitability determinations, disclosure obligations and communications).

Safeguarding our customers, employees, information and assets from exposure to criminal risk is an important priority. Criminal risk is the potential for loss or harm resulting from a failure to comply with criminal laws, which could include acts by employees against BMO, acts by external parties against BMO and acts by external parties using BMO to engage in unlawful conduct, such as fraud, theft, money laundering, violence, cyber-crime, bribery and corruption.

BMO's Anti-Corruption Office, through its global program, has articulated key principles and procedures necessary for the effective oversight of compliance with anti-corruption legislation in the jurisdictions in which we operate. These include guidance on both identifying and avoiding corrupt practices and rigorously investigating allegations of corrupt activity.

Governments and regulators around the world continue to focus on anti-money laundering and related concerns, raising their expectations concerning the quality and efficacy of anti-money laundering programs and penalizing institutions that fail to meet these expectations. Under the direction of the Chief Anti-Money Laundering Officer (CAMLO), BMO's Anti-Money Laundering Office is responsible for the governance, oversight and assessment of principles and procedures designed to help ensure compliance with laws and regulations and internal risk parameters related to anti-money laundering, anti-terrorist financing and sanctions measures. For additional discussion regarding BMO's operational non-financial risk management practices with respect to anti-money laundering measures, refer to the Anti-Money Laundering section.

All of these frameworks reflect the three-lines-of-defence operating model described previously. The operating groups and Corporate Services, including Technology and Operations, manage day-to-day risks by complying with corporate policies and standards, while Legal & Regulatory Compliance units specifically aligned with each of the operating groups provide advice and independent legal and regulatory risk management oversight.

Heightened regulatory and supervisory scrutiny has a significant impact on the way we conduct business. Working with the operating groups and Corporate Services, including Technology and Operations, Legal & Regulatory Compliance assesses and analyzes the implications of regulatory and supervisory changes. We devote substantial resources to the implementation of systems and processes required to comply with new regulations, which may also help us meet the needs and demands of our customers. Failure to comply with applicable legal and regulatory requirements may result in legal proceedings, financial losses, regulatory sanctions, enforcement actions, an inability to execute our business strategies, a decline in investor and customer confidence, and damage to our reputation.

We recognize that our business is built on BMO's reputation for good conduct. In recognition of this, we have adopted a wide range of practices beyond BMO's Code of Conduct to support the ethical conduct of our employees. BMO's Ethical Culture and Conduct Framework sets out our approach to managing and mitigating potential misconduct. Misconduct is behaviour that falls short of legal, professional, internal conduct and ethical standards. Similar to our approach to other non-financial risks, this framework is supported by our Enterprise-Wide Risk Management Framework and our focus on maintaining a strong risk culture. For further discussion, refer to the Risk Culture section.

We continue to respond to other global regulatory developments, including capital and liquidity requirements. Other global regulatory developments include over-the-counter (OTC) derivatives reform, consumer protection measures and specific financial reforms, including proposed reforms in respect of the assessment, management and disclosure of climate-related financial risk, which are discussed in further detail below. For additional discussion of the regulatory developments relating to capital management and liquidity and funding risk, refer to the Enterprise-Wide Capital Management section and the Liquidity and Funding Risk section. For a discussion of the impact of certain other regulatory developments, refer to: Critical Accounting Estimates – Income Taxes and Deferred Tax Assets; Tax Legislation and Interpretations; Fiscal and Monetary Policies and Other Economic Conditions in the Countries in which BMO Conducts Business; and Benchmark Interest Rate Reform.

Consumer and Investor Protection – Regulators around the world continue to focus on consumer protection measures, including with respect to seniors and other vulnerable customers, interactions with consumers, and standards of conduct for individuals in the financial services industry. In Canada, these measures include amending the *Bank Act* to implement the Financial Consumer Protection Framework and amending the *Financial Consumer Agency of Canada Act* to strengthen the mandate and powers of the Financial Consumer Agency of Canada. Additionally, investor protection reforms to the Canadian securities regulatory regime are also proceeding. Canadian securities regulatory reforms include: client-focused reforms, which enhance requirements regarding conflict of interest disclosure, suitability, know-your-product, know-your-client, relationship disclosure, training and record-keeping; a ban on trailing commissions paid to dealers that do not make a suitability determination and a ban on deferred sales charges; and enhanced protection for older and vulnerable clients. In the United States, banking regulators have heightened focus on matters pertaining to racial equity and consumer protection, especially as they relate to the economic recovery of the communities we serve in the aftermath of the COVID-19 pandemic. Key consumer concerns, including fair lending, and unfair, deceptive or abusive acts or practices (UDAAP) issues, are the subject of heightened regulatory scrutiny in bank examination programs.

U.S. Regulatory Reform – In May 2018, the U.S. Congress passed the *Economic Growth, Regulatory Relief, and Consumer Protection Act* (EGRRCP), which made changes to the *Dodd-Frank Wall Street Reform and Consumer Protection Act*, including raising the threshold for heightened prudential standards. In October 2019, the U.S. federal banking agencies finalized rules pursuant to EGRRCP that modify capital and liquidity requirements, single-counterparty credit limits and prudential standards for bank holding companies and foreign banking organizations, including BMO. In two separate rulemakings, in November 2019 and June 2020, the U.S. federal banking agencies finalized rules amending the restrictions on proprietary trading and the ownership and sponsorship of private investment funds by banks and their affiliates. In 2021, the new U.S. administration appointed new leadership at several U.S. federal agencies, and additional appointments are expected. Each such new appointee may initiate or modify future regulatory reforms. Furthermore, due to congressional leadership changes as a result of the 2020 U.S. election, there is the possibility that new legislation could result in further regulatory changes. We continue to monitor the rulemaking activities at all relevant agencies.

Other Regulatory Initiatives Impacting Financial Services in Canada – The Department of Finance Canada is undertaking a consultation process regarding the merits of open banking, which would allow Canadian consumers and small businesses to direct federally regulated financial institutions to disclose their banking information through a secure mechanism to entities that meet information security and other requirements. Effective August 31, 2021, a new *Pay Equity Act* and related regulations require banks to establish a functional pay equity plan within three years. Implementing regulations are required for other earlier amendments to the *Bank Act* that will allow banks to undertake broader financial technology activities. As part of the 2021 federal budget process, the Department of Finance Canada launched consultations regarding the reduction of interchange fees that would benefit small businesses. These consultations precede any legislative modification to interchange fees, which were previously reduced by legislation in 2018.

Climate Change and Environmental, Social and Governance (ESG) Matters – We continue to monitor rulemaking activities of securities regulatory authorities and engage in programs and consultations in respect of risk management and disclosures related to ESG matters, as well as climate-related litigation trends. Globally, we are also monitoring the emergence of formal supervisory regulatory frameworks governing climate change risk analysis and reporting, including in Canada, the United States, the United Kingdom and the European Union.

Privacy – There is an increasing focus on data privacy regulation related to the use and safeguarding of personal information, and we continue to advance our privacy program to comply with these evolving requirements. In Canada, significant reform to federal privacy laws is expected, including new regulatory powers and penalties for breaching the digital privacy rights of individuals. In Quebec, Bill 64 has been adopted and will modernize the province's private-sector privacy regime and give new powers to privacy regulators to impose administrative monetary penalties. Ontario is also considering private-sector privacy legislation. Outside of Canada, large fines and settlements have been imposed for breaches of privacy rights and for failures to comply with regulatory privacy requirements, demonstrating heightened regulatory vigilance and enforcement. The *California Consumer Privacy Act* (CCPA) came into effect on January 1, 2020, and is currently the most comprehensive privacy law at the state level in the United States. The CCPA includes new and expanded privacy rights for California residents, including access and deletion rights with respect to their personal information. Other states have introduced privacy legislation, leading to a growing patchwork of privacy laws in the United States. In the European Union, new standard contractual clauses have been introduced to address the EU Commission's concerns regarding the transfer of personal data to countries lacking adequate privacy protection. In China, data localization and cross-border transfer rules remain complex. For additional discussion regarding privacy, refer to the Cyber Security, Information Security and Privacy Risk section and the Operational Non-Financial Risk – Cyber Security Risk section.

Derivatives Reform – G20 jurisdictions continue to implement new regulations as part of the OTC derivatives regulatory reform program. We continue to monitor and prepare for the impact of OTC derivatives regulatory changes relating to margin, clearing, execution and business conduct rules.

COVID-19 Pandemic – The COVID-19 pandemic has caused unprecedented disruption to global economies. There have been wide-ranging responses to support individuals, businesses and local and national economies through governmental and regulatory actions, emergency orders and regulatory relief. We have been engaged with our regulators around the world on the pandemic response, including our participation in various relief programs. For additional discussion, refer to the General Economic Conditions section, and the Regulatory Capital Developments – COVID-19 Related Modifications section.

The General Counsel and the Chief Compliance Officer regularly report to the Audit and Conduct Review Committee (ACRC) of the Board of Directors and senior management on the effectiveness of our Enterprise Compliance Program. The program uses a risk-based approach to identify, assess and manage compliance with applicable laws and regulations. The program directs operating groups and Corporate Services to maintain policies, procedures and controls that address these laws and regulations. Under the direction of the Chief Compliance Officer, we identify and report on gaps and deficiencies, and we track remedial action plans. The CAMLO also regularly reports to the ACRC.

All BMO employees must regularly complete legal and regulatory training on topics such as anti-corruption, anti-money laundering and privacy policies, standards and procedures. This is done in conjunction with our Code of Conduct training, which tests employees' knowledge and understanding of the behaviour required of employees of BMO.

Caution
This Legal and Regulatory Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Strategic Risk

Strategic risk is the potential for loss or harm due to changes in the external business environment and failure to respond appropriately to these changes as a result of inaction, ineffective strategies or poor implementation of strategies. Strategic risk also includes business risk, which arises from the specific business activities of the enterprise, and the effects these could have on its earnings.

Strategic risk arises from external risks inherent in the business environment within which BMO operates, as well as from the potential for loss if we are unable to address those external risks effectively. While external strategic risks – including economic, geopolitical, regulatory, technological, social and competitive risks – cannot be controlled, the likelihood and magnitude of their impact can be limited through an effective strategic management framework, and certain of these risks, including economic, geopolitical and regulatory risks, can be assessed through stress testing.

BMO's Corporate Strategy team oversees the strategic planning process and works with the lines of business, along with ERPM, Finance and Corporate Services, to identify, monitor and mitigate strategic risk across the enterprise. Our rigorous strategic risk management framework encourages a consistent approach to developing strategies and incorporates information related to financial commitments.

The Corporate Strategy team works with the lines of business and key corporate stakeholders during the strategy development process to promote consistency and adherence to strategic management standards, including a consideration of the results of stress testing as an input into strategic decision-making. The potential impacts of changes in the business environment, including macroeconomic developments, broad industry trends and the actions of existing and new competitors, are considered in this process and inform strategic decisions within each line of business. Enterprise and group strategies are reviewed with the Executive Committee and the Board of Directors annually in interactive sessions that challenge assumptions and strategies in the context of both the current and the potential future business environment.

Business risk, as a component of strategic risk, encompasses the potential causes of earnings volatility that are distinct from credit, market or non-financial risk factors. BMO's profitability, and hence value, may be eroded by changes in the business environment or by failures of strategy or execution due to changing client expectations or relatively ineffective responses to industry changes. Within BMO, each operating group is responsible for controlling its respective business risk by assessing, managing and mitigating any risks arising from changes in its business volumes, cost structures and potential competitor actions, among other factors.

The ability to implement the strategic plans developed by management influences our financial performance. Performance objectives established through the strategic management process are monitored regularly and reported on quarterly, using both leading and lagging indicators of performance, so that strategies can be reviewed and adjusted where necessary. Regular strategic and financial updates are also reviewed closely in order to identify any significant emerging risk issues.

Environmental and Social Risk

Environmental and social risk (E&S risk) is the potential for loss or harm, directly or indirectly, resulting from environmental or social impacts or concerns, including climate change, related to BMO, our customers, suppliers or clients, and our impact on the environment and society.

Environmental and social factors may give rise to the risk of direct and indirect impacts over both the short and long term, including but not limited to: climate change; pollution and waste; energy, water and other resource usage; biodiversity and land use; human rights; diversity, equity and inclusion; labour standards; community health, safety and security; land acquisition and involuntary resettlement; Indigenous peoples' rights and consultation; and cultural heritage. We may be indirectly exposed to the risk of financial loss or reputational harm if our customers, suppliers or clients are affected by environmental or social factors such that they are unable to meet their financial or other obligations to us. Environmental and social factors may also give rise to the risk of reputational harm, for instance if we are perceived to not effectively respond to those factors.

We continue to monitor and respond to the rapidly evolving E&S risk-related regulatory and supervisory frameworks, guidance and consultation, including developments in respect of the assessment, management and disclosure of climate-related financial risk in applicable jurisdictions, among them Canada, the United States, the United Kingdom and the European Union. For further discussion, refer to the Legal and Regulatory Risk section.

Governance

At the Board of Directors level, the Risk Review Committee (RRC) and the Audit and Conduct Review Committee (ACRC) provide oversight of our strategic E&S objectives and risk management. The Board meets with the Chief Sustainability Officer and General Counsel as necessary, to review key sustainability issues and trends as they relate to us and the financial services industry in general. Climate change risk and disclosure training is available to all Board of Directors members, including members of our subsidiaries' boards.

The ACRC charter includes a duty to assess the effectiveness of our governance of sustainability issues. The ACRC meets with the Chief Sustainability Officer and General Counsel to review and discuss key sustainability topics. A key role of the ACRC is to review and approve our Sustainability Report and Public Accountability Statement. The ACRC also provides guidance on the strategy, action plans, performance objectives and targets related to our operational footprint and sustainable finance commitments, and works to ensure management is adequately addressing opportunities associated with the transition to a lower-carbon economy.

The RRC assists the Board of Directors in fulfilling its risk management oversight responsibilities, including overseeing the identification, assessment and management of our E&S risks. Upon recommendation from the RRC, the Board of Directors annually approves our enterprise E&S risk appetite statement and associated key risk metrics.

BMO's General Counsel is responsible for our Sustainability program and sits on BMO's Executive Committee. Our Sustainability Council comprises senior leaders from the lines of business and Corporate Services across the organization, and provides oversight and leadership for our sustainability strategy, including our Net Zero Ambition (described under E&S Risk Management below). The Sustainability team is responsible for coordinating the development and maintenance of an enterprise-wide strategy that meets our overarching environmental and social responsibilities.

The Chief Risk Officer (CRO) reports to the RRC on E&S risk matters, including climate change. Enterprise Risk and Portfolio Management (ERPM) provides risk management oversight, supporting a disciplined approach to risk-taking in independent transaction approval and portfolio management, policy formulation, risk reporting, scenario analysis, modelling and risk education. The CRO and the Risk Management team report to the RRC periodically on E&S risk matters, including climate change.

E&S Risk Management

In recognition of its unique characteristics, E&S risk is classified in BMO's Risk Taxonomy as a transverse risk. As part of our Enterprise-Wide Risk Management Framework and Credit Risk Management Framework, we include provisions for governance and accountabilities, enhanced due diligence, and provisions for escalations and exceptions. We have also developed a qualitative risk appetite statement on E&S risks, including climate change.

Led by BMO's Chief Sustainability Officer, the Sustainability team works in partnership with the lines of business (including the BMO Capital Markets Sustainable Finance team and the BMO Global Asset Management team) and Corporate Services (including Risk Management) to manage E&S risk within our organization and to make progress toward achieving our sustainability goals. BMO's Net Zero Ambition is one of those goals. Our Net Zero Ambition is to be our clients' lead partner in the transition to a net zero world, and is supported by four pillars: Commitment, Capabilities, Client Partnership and Convening for Climate Action. The team reports quarterly to the Sustainability Council on key developments in sustainability and climate change and engages with external stakeholders to better understand the social consequences and environmental impacts of our operations and financing decisions.

BMO is a signatory to the Equator Principles, the United Nations (UN) Principles for Responsible Banking (UNPRB) and the UN Principles for Responsible Investment (UNPRI), and is a member of the Partnership for Carbon Accounting Financials (PCAF), as well as the Net-Zero Banking Alliance (NZBA). These voluntary frameworks may include process and reporting requirements that are intended to be voluntary, or they may adopt a "comply-or-explain" approach. We may also be exposed to reputation risk in the event that we do not fully implement these frameworks, either as a result of our own actions or due to external factors.

- The Equator Principles serve as a common baseline and framework for financial institutions to identify, assess and manage E&S risks that may arise in project financing. We apply this credit risk management framework to identify, assess and manage the E&S risk in these transactions.
- UNPRB provides a framework for a sustainable banking system and is the only sustainability framework for banks that is applicable across the enterprise, providing guidance at the strategic, portfolio and transaction levels across all lines of business. The UNPRB enables any financial institution genuinely committed to sustainable and responsible banking to set targets that are within the context of its capabilities and current financial and operational position.
- UNPRI is a framework that encourages sustainable investing through the integration of environmental, social and governance considerations into investment decision-making and ownership practices.
- PCAF is a global partnership of financial institutions working together to develop and implement a harmonized approach to assessing and disclosing the greenhouse gas (GHG) emissions associated with loans and investments.
- NZBA is an industry-led, UN-convened organization of banks supporting the implementation of decarbonization strategies and the development of an internationally coherent framework and guidelines for banks committed to aligning their lending and investment portfolios with net zero emissions by 2050.

E&S factors continue to be integrated into existing risk management frameworks. We evaluate the E&S risks associated with credit and counterparty transactions and exposures, and we apply enhanced due diligence processes to transactions with clients operating in higher risk sectors. We also avoid doing business with borrowers that have poor track records in E&S risk management. Transactions with significant environmental or social concerns may be escalated to BMO's Reputation Risk Management Committee for consideration.

Our Sustainability team also partners with the Procurement and Corporate Real Estate groups on operational sustainability. Together these groups are responsible for establishing and maintaining an operational environmental management approach, including the application of the framework set out in ISO 14001, and for setting objectives and targets that are intended to align our operations with our sustainability performance goals.

To keep informed of emerging environmental and social risks, we participate in global forums with our peers and maintain an open dialogue with our external stakeholders. BMO is a member of, and actively engaged in, sustainability-focused working groups of the United Nations Environment Programme – Finance Initiative (UNEP-FI), serves on the Steering Committee of the Equator Principles Association, and chairs theCross-Sector Biodiversity Initiative.

Climate Change

We recognize that climate change poses potential risks to our organization, our clients and the communities in which we operate. In response, in March 2021, we announced the establishment of the BMO Climate Institute. It brings together our existing internal capabilities and external experts and provides a platform for collaboration to accelerate progress in our respective areas of work and to develop climate mitigation and adaptation solutions for our clients.

In line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), we recognize that climate change exposes the world to physical risks and transition risks.

Physical risks are risks associated with a changing climate, resulting in both acute and chronic physical effects. These risks may include an increase in the frequency and intensity of weather-related events, such as storms, floods, wildfires and heatwaves, or longer-term changes, such as temperature changes, rising sea levels and changes in soil productivity. To date, key climate change indicators, weather-related events and associated scientific research indicate that global exposure to climate change risks may be accelerating.

Transition risks are risks associated with the shift to a net zero carbon economy. These risks may arise from climate-related policy changes, technological changes and behavioural changes involving carbon-pricing mechanisms or a shift in consumer preferences toward lower-carbon products and services. We continue to closely monitor policy, technological and behavioural changes, some of which may unfold more rapidly than others as consumers, clients, investors, governments and communities act to enhance their resiliency to climate-related risks.

We consider the physical and transition risks arising from climate change to be transverse risk drivers that impact all of the material risks in our Risk Taxonomy, namely credit and counterparty risk, market risk, insurance risk, liquidity and funding risk, operational non-financial risk, legal and regulatory risk, reputation risk and strategic risk. Accordingly, we are integrating climate change considerations into our Enterprise-Wide Risk Management Framework.

To identify, assess and manage specific climate-related risks arising from our customer and client relationships, we follow internal guidelines that outline the scope of E&S risk and establish procedures, including enhanced due diligence, to determine the extent of our exposure to any such risk. Our Environmental and Social Risk Financing Guideline includes direction on developing an understanding of specific climate change impacts on borrowers and their operations, including regulatory and/or legislative changes. To avoid over-exposure to any one sector or geographic region that might be exposed to climate-related risks, we maintain a diversified lending portfolio. We continue to conduct sector-specific reviews across our lending portfolio to assess exposure to climate-sensitive industries. As a signatory to the Equator Principles, we have implemented the EP4 framework, which includes requirements related to climate change for transactions within its scope.

We are developing a climate change scenario analysis program, in line with the TCFD recommendations, analyzing both physical and transition risks for a selection of climate-sensitive lending portfolios. We plan to continue expanding such analyses across sectors and risk types, in line with internal policies and any applicable regulatory requirements. Going forward, this evolving scenario analysis program will inform our process for climate-related risk assessment.

The GHG Protocol Corporate Standard classifies a company's greenhouse gas (GHG) emissions under three scopes. Scope 1 emissions are direct emissions from owned or controlled sources, Scope 2 emissions are indirect emissions from the generation of purchased energy and Scope 3 emissions are indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company. We track and analyze our Scope 1 and Scope 2 emissions, as well as Scope 3 emissions associated with our waste generation and business travel. We also have an ongoing operational approach to GHG emissions quantification and energy efficiency.

We continue to assess the credibility, reliability, comparability and decision-making usefulness of various measurement, assessment and reporting approaches, as well as how they could be incorporated into our climate risk management program and associated disclosures.

Codes of Conduct and Statement on Human Rights

BMO's Board-approved Code of Conduct reflects our commitment to manage our business responsibly. Our Statement on Human Rights describes our approach to human rights in the context of the UN Guiding Principles on Business and Human Rights. We report publicly under the United Kingdom *Modern Slavery Act 2015*, and we have in place a Supplier Code of Conduct, which outlines our standards for integrity, fair dealing and sustainability. We expect our suppliers to be aware of, understand and respect the principles of our Supplier Code of Conduct.

Reporting

We have supported the TCFD since 2018, and we have adopted the framework of the TCFD to guide climate-related financial disclosures, as set out in our Climate Report. Our Sustainability Report is prepared in accordance with the Global Reporting Initiative (GRI) Standards (core option) and the GRI Financial Services Sector Disclosure, and integrates the disclosure frameworks of the TCFD and the Sustainability Accounting Standards Board. This report includes the Public Accountability Statements for Bank of Montreal, Bank of Montreal Mortgage Corporation, BMO Life Assurance Company and BMO Life Insurance Company, outlining certain aspects of Bank of Montreal's contributions, and the contributions of its affiliates with operations in Canada, to the Canadian economy and society. These statements meet the requirements of the Canadian federal government's Public Accountability Statement regulations. Selected environmental and social indicators in the Sustainability Report are assured by the shareholders' auditors.

Caution

This Environmental and Social Risk section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Reputation Risk

Reputation risk is the potential for loss or harm to the BMO brand. It can arise even if other risks are managed effectively.

Our reputation is built on our commitment to high standards of business conduct and is one of our most valuable assets. By protecting and maintaining our reputation, we safeguard our brand, increase shareholder value, reduce our cost of capital, improve employee engagement, and preserve our customers' loyalty and trust.

We manage risks to our reputation by considering the potential reputational impact of all business activities, including strategy development and implementation, transactions and initiatives, product and service offerings, and events or incidents impacting BMO, as well as day-to-day decision-making and conduct. We consider our reputation in everything that we do.

BMO's Code of Conduct is the foundation of our ethical culture and it provides employees with guidance on the behaviour that is expected of them, so that they can make the right choice in decisions that affect our customers and stakeholders. Continual reinforcement of the principles set out in the Code of Conduct minimizes risks to our reputation that may result from poor decisions or behaviour. Recognizing that non-financial risks can have a negative effect that is as significant as the effect of financial risks, we actively promote a culture which encourages employees to raise concerns and supports them in doing so, with zero tolerance for retaliation.

In our corporate governance practices and Enterprise-Wide Risk Management Framework, we have put specific controls in place to manage risks to our reputation. We seek to identify activities or events that could impact our reputation with customers, regulators or other stakeholders. Where we identify a potential risk to our reputation, we take steps to assess and manage that risk. Instances of significant or heightened exposure to reputation risk are escalated to BMO's Reputation Risk Management Committee for review. As misconduct can impact our reputation, the Chief Ethics and Conduct Officer, who is responsible for enterprise-wide reporting on employee conduct, escalates instances of misconduct involving significant reputation risk to BMO's Reputation Risk Management Committee, as appropriate.

Accounting Matters and Disclosure and Internal Control

Critical Accounting Estimates

The most significant assets and liabilities for which we must make estimates include: allowance for credit losses; financial instruments measured at fair value; pension and other employee future benefits; impairment of securities; income taxes and deferred tax assets; goodwill and intangible assets; insurance-related liabilities; and provisions, including legal provisions. We make judgments in assessing whether substantially all risks and rewards have been transferred in respect of transfers of financial assets and whether we control structured entities (SEs). These judgments are discussed in Notes 6 and 7 of the consolidated financial statements. Note 17 of the consolidated financial statements provides further details on the estimates and judgments made in determining the fair value of financial instruments. If actual results were to differ from estimates, the impact would be recorded in future periods.

The extent of the continuing impact of the COVID-19 pandemic on the Canadian and U.S. economies remains uncertain and difficult to predict, including government and regulatory responses to the pandemic, which could vary by country and region. By their very nature, the judgments and estimates that we make for the purposes of preparing financial statements relate to matters that are inherently uncertain. However, we have detailed policies and control procedures that are intended to ensure the judgments made in estimating these amounts are well controlled, independently reviewed and consistently applied from period to period. We believe that the estimates of the value of our assets and liabilities are appropriate.

For a more detailed discussion of the use of estimates, refer to Note 1 of the consolidated financial statements.

Allowance for Credit Losses

The allowance for credit losses consists of allowances on impaired loans, which represent estimated losses related to impaired loans in the portfolio provided for but not yet written off, and allowances on performing loans, which is our best estimate of impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the allowance on performing loans is based on the requirements of IFRS, considering the guideline issued by the Office of the Superintendent of Financial Institutions. Under the IFRS 9 expected credit loss (ECL) methodology, an allowance is recorded for expected credit losses on financial assets regardless of whether there has been actual impairment. ECL is calculated on a probability-weighted basis, based on the economic scenarios described below, and is calculated for each exposure in the portfolio as a function of the probability of default (PD), exposure at default (EAD) and loss given default (LGD), with the timing of the loss also considered. Where there has been a significant increase in credit risk, lifetime ECL is recorded; otherwise 12 months of ECL is generally recorded. The determination of a significant increase in credit risk considers many different factors and will vary by product and risk segment. The main factors considered in making this determination are the change in PD since origination and certain other criteria, such as 30-day past due and watchlist status. We may apply experienced credit judgment to reflect factors not captured in the results produced by the ECL models, as we deem necessary. We applied experienced credit judgment to reflect the continuing impact of the uncertain environment on credit conditions and the economy as a result of the COVID-19 pandemic. We have controls and processes in place to govern the ECL process, including judgments and assumptions used in the determination of the allowance on performing loans. These judgments and assumptions will change over time, and the impact of any such change will be recorded in future periods.

In establishing our allowance on performing loans, we attach probability weightings to three economic scenarios, which are representative of our view of economic and market conditions – a base scenario, which in our view represents the most probable outcome, as well as benign and adverse scenarios, all developed by our Economics group. The adverse scenario is also described below, with the focus on such a scenario, given continued economic uncertainty. The allowance on performing loans is sensitive to changes in economic forecasts and the probability weight assigned to each forecast scenario. When changes in economic performance in the forecasts are measured, we use real GDP as the basis, which acts as the key driver for movements in many of the other economic and market variables used, including the equity volatility index (VIX), corporate BBB credit spreads, unemployment rates, housing price indices and consumer credit. In addition, we also consider industry-specific variables, where applicable. Many of the variables have a high degree of interdependency and, as such, there is no one single factor to which the allowances as a whole are sensitive. Holding all else equal, as economic variables worsen, the allowance on performing loans would increase and conversely, as they improve, the allowance would decrease. In addition, assuming all variables are held constant, an increase in loan balances or a deterioration in the credit quality of the loan portfolio would both drive an increase in the allowance on performing loans.

Our total allowance for credit losses as at October 31, 2021 was $2,958 million ($3,814 million as at October 31, 2020) and comprises an allowance on performing loans of $2,447 million and an allowance on impaired loans of $511 million ($3,075 million and $739 million, respectively, as at October 31, 2020). The allowance on performing loans decreased $628 million year-over-year, primarily driven by an improving economic outlook, positive credit migration and movements in foreign exchange rates, partially offset by the impact of the uncertain environment on future credit conditions, including adoption of a higher adverse scenario weighting as well as a more severe adverse scenario, and portfolio growth.

As at October 31, 2021, our base case scenario depicts a stronger economic forecast in both Canada and the United States. In Canada, annual real GDP growth averages 4.0% over the next 12 months as a result of policy stimulus, easing of pandemic restrictions, and a reduction in supply-chain disruptions, combined with a wave of pent-up demand. Annual real GDP growth is expected to average 3.9% over the following 12 months, as the economic recovery continues and spending returns to more normal levels. The Canadian unemployment rate is forecasted to decline steadily, though remains elevated, averaging 6.6% over the next 12 months and 5.7% over the following year. The U.S. economy is expected to follow a similar trajectory over the next 12 months, albeit with a higher level of growth compared with Canada at 4.8%, given a larger policy stimulus and an initially faster vaccine rollout. Real GDP is expected to grow 2.7% in the following 12 months. The U.S. unemployment rate is forecasted to average 4.7% over the next 12 months and then fall to 3.7% in the following year. Our base case economic forecast as at October 31, 2020 depicted more moderate economic growth in both Canada and the United States over the near-term projection period. If we assume a 100% base case economic forecast and include the impact of loan migration by restaging, with other assumptions held constant, including the application of experienced credit judgment, the allowance on performing loans would be approximately $1,725 million as at October 31, 2021 ($2,375 million as at October 31, 2020), compared with the reported allowance on performing loans of $2,447 million ($3,075 million as at October 31, 2020).

As at October 31, 2021, our adverse case economic forecast depicts a contracting economy, with annual average real GDP declining in both Canada and the United States over the next 12 months by 2.7% and 1.2%, respectively, with both contracting at a rate of 1.1% in the following 12 months. The adverse case scenario assumes a sustained large increase in COVID-19 cases, accompanied by renewed restrictions on a broad range of activities leading to a decline in consumer and business confidence, and prolonged supply-chain disruptions. Unemployment rates remain elevated in both Canada and the United States, increasing from an average of 10.8% over the next 12 months to an average of 12.7% in the following year in Canada, and from 8.5% to 11.0% in the United States over the same period. Despite adopting a more severe adverse scenario during fiscal 2021, the adverse case economic outlook as at October 31, 2020 depicted a more severe economic contraction in Canada and the United States compared with the adverse case as at October 31, 2021, due to the improvement in economic conditions year-over-year. If we assume a 100% adverse economic forecast and include the impact of loan migration by restaging, with other assumptions held constant, including the application of experienced credit judgment, the allowance on performing loans would be approximately $3,825 million as at October 31, 2021 ($4,875 million as at October 31, 2020), compared with the reported allowance on performing loans of $2,447 million ($3,075 million as at October 31, 2020).

The following tables show the key economic variables used to estimate the allowance on performing loans during the forecast period. The values shown represent the national annual average levels or growth rates for the next 12 months and the subsequent 12 months following each reporting period for all scenarios. While the values disclosed below are national variables, we use regional variables in the underlying models where appropriate.

	As at October 31, 2021					
	Benign scenario		Base scenario		Adverse scenario	
All figures are annual average values	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months
Real GDP growth rates (1)						
Canada	**6.3%**	**5.5%**	**4.0%**	**3.9%**	**(2.7)%**	**(1.1)%**
United States	**7.1%**	**4.0%**	**4.8%**	**2.7%**	**(1.2)%**	**(1.1)%**
Corporate BBB 10-year spread						
Canada	**1.4%**	**1.7%**	**1.8%**	**2.0%**	**3.6%**	**4.4%**
United States	**0.9%**	**1.1%**	**1.2%**	**1.5%**	**4.2%**	**4.5%**
Unemployment rates						
Canada	**6.0%**	**4.9%**	**6.6%**	**5.7%**	**10.8%**	**12.7%**
United States	**4.2%**	**3.2%**	**4.7%**	**3.7%**	**8.5%**	**11.0%**
Housing price index (1)						
Canada (2)	**18.2%**	**10.2%**	**15.1%**	**5.2%**	**(6.4)%**	**(18.0)%**
United States (3)	**14.6%**	**6.7%**	**12.3%**	**4.3%**	**(6.1)%**	**(15.5)%**

	As at October 31, 2020					
	Benign scenario		Base scenario		Adverse scenario	
All figures are annual average values	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months
Real GDP growth rates (1)						
Canada	3.7%	6.4%	1.8%	4.2%	(4.4)%	(1.1)%
United States	1.6%	6.0%	(0.4)%	4.0%	(5.1)%	(1.2)%
Corporate BBB 10-year spread						
Canada	1.8%	1.9%	2.2%	2.2%	3.6%	4.5%
United States	1.7%	1.7%	2.0%	2.0%	3.9%	4.1%
Unemployment rates						
Canada	7.4%	6.1%	8.9%	7.5%	12.7%	13.9%
United States	6.4%	4.8%	8.0%	6.0%	11.5%	12.8%
Housing price index (1)						
Canada (2)	10.3%	7.7%	7.2%	2.8%	(1.2)%	(8.7)%
United States (3)	4.6%	4.5%	2.4%	2.1%	(2.4)%	(6.2)%

(1) Real gross domestic product and housing price index are four-quarter averages of year-over-year growth rates.
(2) In Canada, we use the HPI Benchmark Composite.
(3) In the United States, we use the National Case-Shiller House Price Index.

The table below shows our expectations for the real GDP year-over-year growth rates for the base case in Canada and the United States to trend by calendar quarter. In addition, the table includes the real GDP level compared with calendar Q4 2019, which marked the quarterly peak in real GDP prior to the beginning of the pandemic in calendar Q1 2020, expressed as a percentage.

Calendar quarter ended	December 31, 2021	March 31, 2022	June 30, 2022	September 30, 2022	December 31, 2022	March 31, 2023	June 30, 2023	September 30, 2023
Real GDP growth rates year-over-year								
Canada	3.4%	3.4%	5.1%	5.2%	4.4%	3.5%	2.6%	2.1%
United States	5.5%	4.6%	3.7%	3.1%	2.7%	2.5%	2.4%	2.3%
Real GDP level compared to calendar Q4 2019								
Canada	100.2%	101.6%	103.0%	104.0%	104.6%	105.1%	105.6%	106.1%
United States	103.1%	103.8%	104.6%	105.3%	105.9%	106.5%	107.0%	107.6%

The ECL approach requires the recognition of credit losses generally based on 12 months of expected losses for performing loans (Stage 1) and the recognition of lifetime expected losses for performing loans that have experienced a significant increase in credit risk since origination (Stage 2). Under the current probability-weighted scenarios and based on the current risk profile of loan exposures, if all performing loans were in Stage 1, our models would generate an allowance on performing loans of approximately $1,775 million ($2,300 million in 2020), compared with the reported allowance on performing loans of $2,447 million ($3,075 million in 2020).

Information on the Provision for Credit Losses for the years ended October 31, 2021 and 2020 can be found in the Total Provision for Credit Losses section. Additional information on the process and methodology for determining the allowance for credit losses can be found in the discussion of Credit and Counterparty Risk, as well as in Note 4 of the consolidated financial statements.

Financial Instruments Measured at Fair Value

We record assets and liabilities classified as trading, assets and liabilities designated at fair value, derivatives, certain equity and debt securities and securities sold but not yet purchased at fair value. Fair value represents an estimate of the amount we would receive, or would be required to pay in the case of a liability, in an orderly transaction between willing parties at the measurement date. We employ a fair value hierarchy to categorize the inputs we use in valuation techniques to measure fair value. The extent of our use of quoted market prices (Level 1), internal models with observable market information (Level 2) and internal models without observable market information (Level 3) in the valuation of loans, securities, derivative assets and liabilities, and liabilities recorded at fair value as at October 31, 2021, as well as a sensitivity analysis of Level 3 financial instruments, is disclosed in Note 17 of the consolidated financial statements. For instruments that are valued using models, we consider all reasonable available information and maximize the use of observable market data.

Valuation Product Control (VPC), a group independent of the trading lines of business, seeks to ensure that the fair values at which financial instruments are recorded are materially accurate by:

- Developing and maintaining valuation policies, procedures and methodologies in accordance with regulatory requirements and IFRS
- Establishing official rate sources for valuation data inputs, and
- Providing independent review of portfolios for which prices supplied by traders are used for valuation

When VPC determines that adjustments to valuations are needed to better reflect fair value estimates based on data inputs from its official rate sources, the adjustments are subject to review and approval by the Valuation Steering Committee (VSC).

The VSC is our senior management valuation committee. It meets at least monthly to address the more challenging valuation issues related to our portfolios, approves valuation methodology changes as needed to enhance fair value estimates, and acts as a key forum for the discussion of sources of valuation uncertainty and how these have been addressed by management.

As at October 31, 2021, the total valuation adjustments were a net decrease in value of $124 million for financial instruments carried at fair value on the Consolidated Balance Sheet (a net decrease of $117 million as at October 31, 2020).

Pension and Other Employee Future Benefits

Our pension and other employee future benefits expense is calculated by independent actuaries using assumptions determined by management. Differences between actual experience and the assumptions used are recognized in other comprehensive income.

Pension and other employee future benefits expense and the related obligations are sensitive to changes in discount rates. We determine discount rates at each year end for all plans, using high-quality corporate bonds with terms matching the plans' specific cash flows.

Additional information regarding accounting for pension and other employee future benefits, including a sensitivity analysis for key assumptions, is included in Note 21 of the consolidated financial statements.

Impairment of Securities

We have investments in associates and joint ventures, which we review at each quarter-end reporting period in order to identify and evaluate those that show indications of possible impairment. For these investments, a significant or prolonged decline in the fair value of a security to an amount below its cost is objective evidence of impairment.

Debt securities measured at amortized cost or fair value through other comprehensive income (FVOCI) are assessed for impairment using the expected credit loss model. For securities determined to have low credit risk, the allowance for credit losses is measured at a 12-month expected credit loss.

Additional information regarding accounting for debt securities measured at amortized cost or FVOCI, other securities, the related allowance for credit losses and the determination of fair value is included in Note 3 and Note 17 of the consolidated financial statements.

Income Taxes and Deferred Tax Assets

Our approach to tax is guided by our Statement on Tax Principles, elements of which are described below, and governed by our tax risk management framework, which is implemented through internal controls and processes. We operate with due regard to risks, including tax and reputation risks. We actively seek to identify, assess, manage (including mitigation), monitor and report any tax risks that may arise in order to understand our financial exposure. Our intention is to comply fully with tax laws. We consider all applicable laws in connection with commercial activities, and where tax laws change in our business or for our customers, we adapt and make changes accordingly. We monitor applicable tax-related developments, including legislative proposals, case law and guidance from tax authorities. When an interpretation or application of tax laws is not clear, we take well-reasoned positions based on available case law and administrative positions of tax authorities, and we engage external advisors when necessary. We do not engage in tax planning that does not have commercial substance. We do not knowingly work with customers we believe use tax strategies to evade taxes. We are committed to maintaining productive relationships and cooperating with tax authorities on all tax matters. We seek to resolve disputes in a collaborative manner; however, when our interpretation of tax law differs from that of tax authorities, we are prepared to defend our position.

The provision for income taxes is calculated based on the expected tax treatment of transactions recorded in either the Consolidated Statement of Income or the Consolidated Statement of Changes in Equity. In determining the provision for income taxes, we interpret tax legislation, case law and administrative positions in numerous jurisdictions and, based on our judgment, we record the estimate of the amount required to settle tax obligations. We also make assumptions about the expected timing of the reversal of deferred tax assets and liabilities. If the interpretations and assumptions differ from those of tax authorities or if the timing of reversals is not as expected, the provision for income taxes could increase or decrease in future periods. The amount of any such increase or decrease cannot be reasonably estimated.

Deferred tax assets are recognized only when it is probable that sufficient taxable profit will be available in future periods against which deductible temporary differences or unused tax losses and tax credits may be utilized. We are required to assess whether it is probable that deferred income tax assets will be realized. Factors used to assess the probability of realization are past experience of income and capital gains, forecasts of future net income before taxes, and the remaining expiration period of tax loss carry forwards and tax credits. Changes in assessment of these factors could increase or decrease the provision for income taxes in future periods.

If income tax rates increase or decrease in future periods in a jurisdiction, the provision for income taxes for future periods will increase or decrease accordingly. Furthermore, deferred tax assets and liabilities will increase or decrease as income tax rates increase or decrease, respectively, and will result in an income tax impact. For example, an increase in the Canadian or U.S. federal tax rate would increase our respective net deferred tax asset, which would result in one-time corresponding tax benefits to net income. In addition, an increase in the Canadian or U.S federal tax rate would decrease our annual net income. The size of this annual net income decrease and any impact on the respective net deferred tax asset is uncertain at this point and will be dependent on many factors, including the tax rates enacted and their timing, phase-in provisions and details regarding any legislation and its interpretation.

Canadian tax authorities have reassessed us for additional income tax and interest in an amount of approximately $1,210 million, to date, in respect of certain 2011-2016 Canadian corporate dividends. Those reassessments denied certain dividend deductions on the basis that the dividends were received as part of a “dividend rental arrangement”. The tax rules raised by the Canadian tax authorities were prospectively addressed in the 2015 and 2018 Canadian federal budgets. In October 2021, we filed Notices of Appeal with the Tax Court of Canada and the matter is now in litigation. We expect to be reassessed in future years for significant additional income tax for similar activities. We remain of the view that our tax filing positions were appropriate and intend to challenge all reassessments. However, if such challenges are unsuccessful, the additional expense would negatively impact net income.

Additional information regarding accounting for income taxes is included in Note 22 of the consolidated financial statements.

Goodwill and Intangible Assets

Goodwill is assessed for impairment at least annually. This assessment includes a comparison of the carrying value and the recoverable amount of each of our cash-generating units (CGUs) in order to verify that the recoverable amount of the CGU is greater than its carrying value. If the carrying value were to exceed the recoverable amount of the CGU, an impairment calculation would be performed. The recoverable amount of a CGU is the higher of its fair value less costs to sell and its value in use.

Fair value less costs to sell was used to perform the impairment test in all periods. In determining fair value less costs to sell, we employ a discounted cash flow model, consistent with that used when a business is acquired. This model is dependent on assumptions related to revenue growth, discount rates, synergies achieved on acquisition and the availability of comparable acquisition data. Changes in any of these assumptions would affect the determination of fair value for each of our CGUs in a different manner. Management must exercise judgment and make assumptions in determining fair value. In particular, we have considered the impact of the COVID-19 pandemic in the current year by updating key assumptions accordingly, including the estimated cost of capital, discount rates and actual and future business performance of our CGUs. Differences in judgments and assumptions could affect the determination of fair value and any resulting impairment write-down.

During the year, we recognized a goodwill write-down of $779 million ($nil in 2020) due to the implied valuation from the definitive agreement to sell our EMEA Asset Management business (part of our Wealth Management CGU) to Ameriprise and our allocation of goodwill to the business being sold. As at October 31, 2021, no goodwill impairment was recorded for the other CGUs as the estimated fair value of the CGUs was greater than their carrying value.

Intangible assets with definite lives are amortized to income on either a straight-line or an accelerated basis over a period not exceeding 15 years, depending on the nature of the asset. We test intangible assets with definite lives for impairment when circumstances indicate that the carrying value may not be recoverable.

Intangible assets with indefinite lives are tested annually for impairment. If an intangible asset is determined to be impaired, it will be written down to its recoverable amount, the higher of value in use and fair value less costs to sell, when this is less than the carrying value.

Additional information regarding the composition of goodwill and intangible assets is included in Note 11 of the consolidated financial statements.

Insurance-Related Liabilities

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy obligation liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions. The most significant potential impact on the valuation of these liabilities would result from a change in the assumptions for interest rates and equity market values. If the assumed future interest rates were to increase by one percentage point, earnings before tax would increase by approximately $48 million. A reduction of one percentage point would lower earnings before tax by approximately $48 million. If the assumed equity market value increased by 10%, earnings before tax would increase by approximately $22 million. A reduction of 10% would lower earnings before tax by approximately $22 million.

Additional information on insurance-related liabilities is provided in Note 14 of the consolidated financial statements, and information on insurance risk is provided in the Insurance Risk section.

Provisions

A provision is recognized if, as a result of a past event, we have a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are recorded at the best estimate of the amount required to settle any obligation as at the balance sheet date, considering the risks and uncertainties surrounding the obligation. For example, BMO and its subsidiaries are involved in various legal actions in the ordinary course of business. Factors considered in making the estimate for any obligation related to these legal actions include a case-by-case assessment of specific facts and circumstances, past experience and the opinions of legal experts. Management and internal and external experts are involved in estimating any amounts that may be required. Certain provisions also relate to restructuring initiatives that we have undertaken. These restructuring provisions are recorded at management's best estimate of the amounts that will ultimately be paid out.

The actual costs of settling some obligations may be substantially higher or lower than the amount of the provisions.

Additional information regarding provisions is included in the Legal and Regulatory Risk section and in Note 24 of the consolidated financial statements.

Leases

We enter into leases as a lessee for which we recognize a lease liability and a corresponding right-of-use asset. In calculating our lease liability and corresponding right-of-use asset, we assess whether a contract is a lease by determining if we have the right to control the asset based on our ability to make decisions or direct how and for what purpose the asset is used. In accounting for leases, we must evaluate the lease term based on the terms of the lease contract, including any extension or termination options that we are reasonably certain to exercise based on the economic rationale underlying the decision. In addition, for leases where the interest cost is explicitly stated, we must estimate our incremental borrowing rate to discount the related lease liabilities, based on our expected costs of secured borrowing for the lease term.

Additional information on leases is provided in Note 9 of the consolidated financial statements.

Transfer of Financial Assets

We sell Canadian mortgage loans to third-party Canadian securitization programs, including the Canada Mortgage Bond Program, and directly to third-party investors under the National Housing Act Mortgage-Backed Securities program. During 2020, we also participated in programs offered by the Canadian and U.S. governments in response to the COVID-19 pandemic to support businesses facing economic hardship, including the Canada Emergency Business Account (CEBA) program and the Business Development Bank of Canada (BDC) Co-Lending program. We assess whether substantially all of the risks and rewards of the loans have been transferred in order to determine if they qualify for derecognition. Where we continue to be exposed to substantially all of the prepayment, interest rate and/or credit risk associated with the securitized loans, they do not qualify for derecognition. We continue to recognize the loans, and we recognize the related cash proceeds as secured financing on our Consolidated Balance Sheet.

Additional information concerning the transfer of financial assets is included in the Off-Balance Sheet Arrangements section, as well as in Note 6 of the consolidated financial statements.

Consolidation of Structured Entities

In the normal course of business, we enter into arrangements with SEs, using them to secure customer transactions or transfer assets to obtain sources of liquidity by securitizing financial assets, or pass our credit risk to holders of the vehicles' securities. For example, we enter into transactions with SEs where we transfer assets, including mortgage loans, mortgage-backed securities, credit card loans, real estate lines of credit, auto loans and equipment loans, in order to obtain alternate sources of funding, or as part of our trading activities. We are required to consolidate a SE if we control the SE. We control a SE when we have power over the SE, exposure or rights to variable returns as a result of our involvement, and the ability to exercise power to affect the amount of those returns.

Additional information concerning interests in SEs is included in the Off-Balance Sheet Arrangements section, as well as in Note 7 of the consolidated financial statements.

Caution

This Critical Accounting Estimates section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

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Changes in Accounting Policies in 2021

IBOR Reform — Phase 2 amendments

Effective November 1, 2020, we early adopted Phase 2 amendments to IFRS 9, *Financial Instruments,* IAS 39, *Financial Instruments: Recognition and Measurement* (IAS 39), IFRS 7, *Financial Instruments: Disclosures*, and IFRS 4, *Insurance Contracts*, as well as IFRS 16, *Leases*. These amendments address issues that arise from the implementation of IBOR reform, where IBORs are replaced with alternative benchmark rates.

For financial instruments at amortized cost, the amendments introduce a practical expedient such that if a change in the contractual cash flows is as a result of IBOR reform and occurs on an economically equivalent basis, the change will be accounted for by updating the effective interest rate with no immediate gain or loss recognized. The amendments also provide additional temporary relief from the application of specific IAS 39 hedge accounting requirements to hedging relationships affected by IBOR reform. For example, there is an exception from the requirement to discontinue hedge accounting as a result of changes to hedge documentation required solely by IBOR reform. The amendments also require additional disclosure that allows users to understand the impact of IBOR reform on our financial instruments and risk management strategy.

Further details are provided in Note 1 of the consolidated financial statements.

Conceptual Framework

Effective November 1, 2020, we adopted the revised Conceptual Framework (Framework), which sets out the fundamental concepts for financial reporting to ensure consistency in standard-setting decisions and that similar transactions are treated in a similar way, so as to provide useful information to users of financial statements. The revised Framework had no impact on our accounting policies.

Future Changes in Accounting Policies

IFRS 17, *Insurance Contracts* (IFRS 17)

In June 2020, the IASB issued amendments to IFRS 17, *Insurance Contracts* (IFRS 17). The amendments include a deferral of the effective date for IFRS 17, resulting in a new adoption date for the bank of November 1, 2023 instead of November 1, 2022. They also include amendments to simplify and revise certain requirements, and provide additional transition relief. We continue to assess the impact of the standard on our future financial results. Further information on these amendments can be found in Note 1 of the consolidated financial statements.

Caution

This Future Changes in Accounting Policies section contains forward-looking statements. Please refer to the Caution Regarding Forward-Looking Statements.

Transactions with Related Parties

In the ordinary course of business, we provide banking services to key management personnel on the same terms that we offer these services to preferred customers. Key management personnel are defined as those persons having authority and responsibility for planning, directing and/or controlling the activities of an entity, being the directors and the most senior executives of the bank. Banking services are provided to joint ventures and equity-accounted investees on the same terms offered to customers for these services. We also offer employees a subsidy on annual credit card fees.

Details of our investments in joint ventures and associates and the compensation of key management personnel are disclosed in Note 27 of the consolidated financial statements.

Shareholders' Auditors' Services and Fees

Review of Shareholders' Auditors

The Audit and Conduct Review Committee (ACRC) is responsible for the appointment, compensation and oversight of the shareholders' auditors and conducts an annual assessment of the performance and effectiveness of the shareholders' auditors, considering factors such as: the quality of the services provided by the engagement team of the shareholders' auditors during the audit period; the qualifications, experience and geographical reach relevant to serving BMO Financial Group; the quality of communications received from the shareholders' auditors; and the independence, objectivity and professional skepticism of the shareholders' auditors.

The ACRC believes that it has a robust review process in place to monitor audit quality and oversee the work of the shareholders' auditors, including the lead audit partner, which includes:

- Annually reviewing the audit plan in two separate meetings, including a consideration of the impact of business risks on the audit plan and an assessment of the reasonableness of the audit fee
- Reviewing the qualifications of the senior engagement team members
- Monitoring the execution of the audit plan of the shareholders' auditors, with emphasis on the more complex and challenging areas of the audit
- Reviewing and evaluating the audit findings, including in camera sessions
- Evaluating audit quality and performance, including recent Canadian Public Accountability Board (CPAB) and Public Company Accounting Oversight Board (PCAOB) inspection reports on the shareholders' auditors and their peer firms
- At a minimum, holding quarterly meetings with the chair of the ACRC and the lead audit partner to discuss audit-related issues independently of management
- Performing a comprehensive review of the shareholders' auditors every five years, and performing an annual review between these comprehensive reviews, following the guidelines set out by the Chartered Professional Accountants of Canada (CPA Canada) and the CPAB.

In 2021, an annual review of the shareholders' auditors was completed. Input was sought from ACRC members and management on areas such as communication effectiveness, industry insights, audit performance, independence and professional skepticism. In addition, the most recent comprehensive review was completed in 2020, based on the latest recommendations of CPA Canada and CPAB. These reviews focused on: (i) the independence, objectivity and professional skepticism of the shareholders' auditors; (ii) the quality of the engagement team; and (iii) the quality of communications and interactions with the shareholders' auditors. As a result of the review, the ACRC was satisfied with the performance of the shareholders' auditors.

Independence of the shareholders' auditors is overseen by the ACRC in accordance with BMO's Auditor Independence Standard. The ACRC also ensures that the lead audit partner rotates out of that role after five consecutive years and does not return to that role for a further five years.

Pre-Approval Policies and Procedures

As part of BMO Financial Group's corporate governance practices, the ACRC oversees the application of its policy limiting the services provided by the shareholders' auditors that are not related to their role as auditors. All services must comply with our Auditor Independence Standard, as well as professional standards and securities regulations governing auditor independence. The ACRC pre-approves the types of services (permitted services) that can be provided by the shareholders' auditors, as well as the annual audit plan, which includes fees for specific types of services. For permitted services that are not included in the pre-approved annual audit plan, approval to proceed with the engagement is obtained in accordance with our Auditor Independence Standard.

Shareholders' Auditors' Fees

(Canadian $ in millions)

Fees (1)	**2021**	2020
Audit fees	**25.2**	22.3
Audit-related fees (2)	**3.4**	2.9
Tax services fees (3)	**0.1**	0.1
All other fees (4)	**1.3**	1.5
Total	**30.0**	26.8

(1) The classification of fees is based on applicable Canadian securities laws and U.S. Securities and Exchange Commission definitions.
(2) Includes fees paid for specified procedures on BMO's Proxy Circular and other services, and French translation of financial statements, related continuous disclosures and other public documents containing financial information.
(3) Includes fees paid for tax compliance services provided to various BMO-managed investment company complexes.
(4) Includes other fees paid by BMO-managed investment company complexes.

Certain comparative figures have been reclassified to conform with the current year's presentation.

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Management's Annual Report on Disclosure Controls and Procedures and Internal Control over Financial Reporting

Disclosure Controls and Procedures

Disclosure controls and procedures are designed to provide reasonable assurance that all relevant information is gathered and reported to senior management, including the Chief Executive Officer (CEO) and the Chief Financial Officer (CFO), on a timely basis, so that appropriate decisions can be made regarding public disclosure.

As at October 31, 2021, under the supervision of the CEO and the CFO, BMO Financial Group's (BMO) management evaluated the effectiveness of the design and operation of its disclosure controls and procedures, as defined in Canada by *National Instrument 52-109, Certification of Disclosure in Issuers' Annual and Interim Filings*, and in the United States by Rule 13a-15(e) under the *Securities Exchange Act of 1934* (the Exchange Act). Based on this evaluation, the CEO and the CFO have concluded that the bank's disclosure controls and procedures were effective as at October 31, 2021.

Internal Control over Financial Reporting

Internal control over financial reporting is a process designed under the supervision of the bank's CEO and CFO, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements in accordance with IFRS and the requirements of the Securities and Exchange Commission (SEC) in the United States, as applicable. Management is responsible for establishing and maintaining adequate internal control over financial reporting for BMO.

Internal control over financial reporting at BMO includes policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of BMO
- Are designed to provide reasonable assurance that transactions are recorded as necessary to permit preparation of the consolidated financial statements in accordance with IFRS and the requirements of the SEC in the United States, as applicable, and that receipts and expenditures of BMO are being made only in accordance with authorizations by management and directors of BMO, and
- Are designed to provide reasonable assurance that any unauthorized acquisition, use or disposition of BMO's assets that could have a material effect on the consolidated financial statements is prevented or detected in a timely manner

Because of its inherent limitations, internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Furthermore, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the related policies and procedures may deteriorate.

BMO's management, under the supervision of the CEO and the CFO, has evaluated the effectiveness of internal control over financial reporting using the framework and criteria established in *Internal Control – Integrated Framework*, issued by the Committee of Sponsoring Organizations of the Treadway Commission in May 2013 (2013 COSO Framework). Based on this evaluation, management has concluded that internal control over financial reporting was effective as at October 31, 2021.

At the request of BMO's Audit and Conduct Review Committee, KPMG LLP (the shareholders' auditors), an independent registered public accounting firm, has conducted an audit of the effectiveness of our internal control over financial reporting. The audit report states in its conclusion that, in KPMG's opinion, BMO maintained, in all material respects, effective internal control over financial reporting as at October 31, 2021, in accordance with the criteria established in the 2013 COSO Framework.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the year ended October 31, 2021 that have materially affected, or are reasonably likely to materially affect, the adequacy and effectiveness of our internal control over financial reporting.

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SUPPLEMENTAL INFORMATION

Supplemental Information

Certain comparative figures have been reclassified to conform with the current year's presentation and for changes in accounting policies. Refer to Note 1 of the consolidated financial statements.

Certain measures and ratios as provided in this section are non-GAAP as indicated. For further information on non-GAAP measures and ratios, please refer to the Non-GAAP and Other Financial Measures section.

For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms.

Table 1: Shareholder Value and Other Statistical Information

As at or for the year ended October 31	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Market Price per Common Share ($)										
High	**138.67**	104.75	106.51	109.00	104.15	87.92	84.39	85.71	73.90	61.29
Low	**78.82**	55.76	86.25	93.60	83.58	68.65	64.01	67.04	56.74	53.15
Close	**134.37**	79.33	97.50	98.43	98.83	85.36	76.04	81.73	72.62	59.02
Common Share Dividends										
Dividends declared per share ($)	**4.24**	4.24	4.06	3.78	3.56	3.40	3.24	3.08	2.94	2.82
Dividend payout ratio (%) (1)	**36.5**	56.1	46.8	46.1	44.9	49.0	49.2	47.8	47.5	46.0
Dividend yield (%)	**3.2**	5.3	4.2	3.8	3.6	4.0	4.3	3.8	4.0	4.8
Dividends on common shares ($ millions)	**2,746**	2,723	2,594	2,424	2,312	2,191	2,087	1,991	1,904	1,820
Total Shareholder Return (%)										
Five-year average annual return	**14.0**	5.1	7.8	10.5	15.5	12.5	9.5	15.5	17.0	4.2
Three-year average annual return	**15.7**	(3.1)	8.6	13.3	10.9	9.9	13.5	16.7	11.5	10.8
One-year return	**75.9**	(14.6)	3.2	3.3	20.2	17.0	(3.0)	17.1	28.8	5.2
Common Share Information										
Number outstanding (in thousands)										
End of year	**648,136**	645,889	639,232	639,330	647,816	645,761	642,583	649,050	644,130	650,730
Average basic	**647,163**	641,424	638,881	642,930	649,650	644,049	644,916	645,860	648,476	644,407
Average diluted	**648,676**	642,128	640,360	644,913	651,961	646,126	647,141	648,475	649,806	648,615
Book value per share ($)	**80.18**	77.40	71.54	64.73	61.91	59.57	56.31	48.18	43.22	39.41
Market capitalization ($ billions)	**87.1**	51.2	62.3	62.9	64.0	55.1	48.9	53.0	46.8	38.4
Price-to-earnings multiple	**11.6**	10.5	11.3	12.0	12.5	12.3	11.6	12.8	11.8	9.7
Price-to-adjusted earnings multiple	**10.4**	10.3	10.3	10.9	12.1	11.4	10.9	12.4	11.7	9.9
Market-to-book value multiple	**1.68**	1.02	1.36	1.52	1.60	1.43	1.35	1.70	1.66	1.47
Balances ($ millions)										
Total assets	**988,175**	949,261	852,195	773,293	709,604	687,960	641,881	588,659	537,044	524,684
Average assets	**981,140**	942,450	833,252	754,295	722,626	707,122	664,391	593,928	555,431	543,931
Average net loans and acceptances	**463,235**	466,886	433,170	387,005	370,899	356,528	318,823	290,621	263,596	246,129
Average common shareholders' equity (1)	**50,451**	48,235	44,170	39,754	38,962	36,997	34,135	29,680	26,956	24,863
Goodwill and acquisition-related intangible assets	**(5,946)**	(6,750)	(6,714)	(6,628)	(6,818)	(7,101)	(6,720)	(5,303)	(4,097)	(4,066)
Average tangible common equity (1) (2)	**44,505**	41,485	37,456	33,126	32,144	29,896	27,415	24,377	22,859	20,797
Return on Equity and Assets										
Return on equity (%) (1)	**14.9**	10.1	12.6	13.3	13.2	12.1	12.5	14.0	14.9	15.9
Adjusted return on equity (%) (1) (2)	**16.7**	10.3	13.7	14.6	13.6	13.1	13.3	14.4	15.0	15.5
Return on tangible common equity (%) (1) (2)	**17.0**	11.9	15.1	16.2	16.3	15.3	15.8	17.3	17.9	19.4
Adjusted return on tangible common equity (%) (1) (2)	**18.9**	11.9	16.1	17.5	16.4	16.1	16.4	17.4	17.7	18.5
Return on average assets (%) (1)	**0.79**	0.54	0.69	0.72	0.74	0.65	0.66	0.72	0.74	0.75
Adjusted return on average assets (%) (1) (2)	**0.88**	0.55	0.75	0.79	0.76	0.71	0.70	0.74	0.75	0.73
Return on average risk-weighted assets (%) (3)	**2.38**	1.51	1.86	1.97	1.98	1.71	1.84	1.85	1.93	1.96
Adjusted return on average risk-weighted assets (%) (3)	**2.66**	1.54	2.01	2.16	2.04	1.85	1.96	1.91	1.94	1.92
Other Statistical Information										
Employees (4)										
Canada	**30,350**	29,296	30,438	29,982	29,647	29,643	30,669	30,587	30,303	30,797
United States	**12,090**	12,492	13,487	13,943	14,071	14,147	14,316	14,845	14,694	14,963
Other	**1,423**	1,572	1,588	1,529	1,482	1,444	1,368	1,346	634	512
Total	**43,863**	43,360	45,513	45,454	45,200	45,234	46,353	46,778	45,631	46,272
Bank branches										
Canada	**877**	877	891	908	926	942	939	934	933	930
United States	**524**	528	561	571	573	576	592	615	626	638
Other	**4**	4	4	4	4	4	4	4	4	3
Total	**1,405**	1,409	1,456	1,483	1,503	1,522	1,535	1,553	1,563	1,571
Automated banking machines										
Canada	**3,312**	3,268	3,370	3,387	3,315	3,285	3,442	3,016	2,900	2,596
United States	**1,539**	1,552	1,597	1,441	1,416	1,314	1,319	1,322	1,325	1,375
Total	**4,851**	4,820	4,967	4,828	4,731	4,599	4,761	4,338	4,225	3,971

The adoption of new IFRS standards in 2014, 2015, 2018 and 2020 only impacted our results prospectively.

(1) For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms.
(2) These measures are non-GAAP. Further information on the use of non-GAAP measures and ratios is provided in the Non-GAAP and Other Financial Measures section.
(3) Risk-weighted assets are disclosed in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline.
(4) Reflects full-time equivalent number of employees, comprising full-time and part-time employees and adjustments for overtime hours.

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Table 2: Summary Income Statement and Growth Statistics

($ millions, except as noted) For the year ended October 31	2021	2020	2019	2018	2017	5-year CAGR	10-year CAGR
Reported Results							
Revenue	**27,186**	25,186	25,483	22,905	22,107	**5.3**	**6.1**
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**(1,399)**	(1,708)	(2,709)	(1,352)	(1,538)	**(1.9)**	**2.3**
Revenue, net of CCPB (1)	**25,787**	23,478	22,774	21,553	20,569	**5.8**	**6.3**
Provision for credit losses	**(20)**	(2,953)	(872)	(662)	(746)	**nm**	**nm**
Non-interest expense	**(15,509)**	(14,177)	(14,630)	(13,477)	(13,192)	**3.7**	**5.9**
Income before income taxes	**10,258**	6,348	7,272	7,414	6,631	**12.4**	**9.9**
Provision for income taxes	**(2,504)**	(1,251)	(1,514)	(1,961)	(1,292)	**17.9**	**11.1**
Net income	**7,754**	5,097	5,758	5,453	5,339	**10.9**	**9.6**
Attributable to equity holders of the bank	**7,754**	5,097	5,758	5,453	5,337	**10.9**	**9.8**
Attributable to non-controlling interest in subsidiaries	**–**	–	–	–	2	**nm**	**nm**
Net income	**7,754**	5,097	5,758	5,453	5,339	**10.9**	**9.8**
Adjusting Items impacting Revenue (Pre-tax)							
Impact of divestitures	**29**	–	–	–	–	**na**	**na**
Adjusting Items impacting Provision for Credit Losses (Pre-tax)							
Decrease in the collective allowance for credit losses	**–**	–	–	–	76	**na**	**na**
Adjusting Items impacting CCPB (Pre-tax)							
Reinsurance adjustment	**–**	–	(25)	–	–	**na**	**na**
Adjusting Items impacting Non-Interest Expense (Pre-tax)							
Acquisition integration costs	**(9)**	(14)	(13)	(34)	(87)	**na**	**na**
Amortization of acquisition-related intangible assets	**(88)**	(121)	(128)	(116)	(149)	**na**	**na**
Impact of divestitures	**(886)**	–	–	–	–	**na**	**na**
Restructuring (costs) reversals	**24**	–	(484)	(260)	(59)	**na**	**na**
Benefit from the remeasurement of an employee benefit liability	**–**	–	–	277	–	**na**	**na**
Adjusting items included in reported pre-tax income	**(930)**	(135)	(650)	(133)	(219)	**na**	**na**
Impact on tax of adjusting items	**33**	31	159	(396)	61	**na**	**na**
Total of adjusting items included in reported net income after tax	**(897)**	(104)	(491)	(529)	(158)	**na**	**na**
Impact on diluted EPS ($)	**(1.38)**	(0.16)	(0.77)	(0.82)	(0.25)	**na**	**na**
Adjusted Results (1)							
Revenue	**27,157**	25,186	25,483	22,905	22,107	**5.2**	**6.2**
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**(1,399)**	(1,708)	(2,684)	(1,352)	(1,538)	**(1.9)**	**2.3**
Revenue, net of CCPB	**25,758**	23,478	22,799	21,553	20,569	**5.7**	**6.5**
Provision for credit losses	**(20)**	(2,953)	(872)	(662)	(822)	**nm**	**nm**
Non-interest expense	**(14,550)**	(14,042)	(14,005)	(13,344)	(12,897)	**3.1**	**5.6**
Income before income taxes	**11,188**	6,483	7,922	7,547	6,850	**12.3**	**10.3**
Provision for income taxes	**(2,537)**	(1,282)	(1,673)	(1,565)	(1,353)	**15.2**	**10.8**
Net income	**8,651**	5,201	6,249	5,982	5,497	**11.5**	**10.2**
Attributable to equity holders of the bank	**8,651**	5,201	6,249	5,982	5,495	**11.5**	**10.2**
Attributable to non-controlling interest in subsidiaries	**–**	–	–	–	2	**nm**	**nm**
Adjusted net income	**8,651**	5,201	6,249	5,982	5,497	**11.5**	**10.2**
Earnings per Share (EPS) ($)							
Basic	**11.60**	7.56	8.68	8.19	7.93	**10.8**	**9.0**
Diluted	**11.58**	7.55	8.66	8.17	7.90	**10.8**	**9.1**
Adjusted diluted (1)	**12.96**	7.71	9.43	8.99	8.15	**11.5**	**9.8**
Year-over-Year Growth-Based Statistical Information (%)							
Net income growth	**52.1**	(11.5)	5.6	2.1	15.3	**na**	**na**
Adjusted net income growth (1)	**66.3**	(16.8)	4.5	8.8	9.5	**na**	**na**
Diluted EPS growth	**53.3**	(12.8)	6.0	3.3	14.3	**na**	**na**
Adjusted diluted EPS growth (1)	**68.0**	(18.2)	4.9	10.3	8.3	**na**	**na**

Five-year and ten-year CAGR based on CGAAP in 2011 and IFRS in 2016 and 2021.

The adoption of new IFRS standards in 2018 and 2020 only impacted our results prospectively.

(1) These measures are non-GAAP. Further information on the use of non-GAAP measures and ratios is provided in the Non-GAAP and Other Financial Measures section.

nm – not meaningful

na – not applicable

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Table 3: Revenue and Revenue Growth

($ millions, except as noted) For the year ended October 31	2021	2020	2019	2018	2017	5-year CAGR	10-year CAGR
Net Interest Income	**14,310**	13,971	12,888	11,438	11,275	**5.5**	**6.7**
Year-over-year growth (%)	**2.4**	8.4	12.7	1.4	3.0	**na**	**na**
Net Interest Margin (1)							
Average earning assets	**897,302**	853,336	759,395	682,991	646,799	**7.6**	**8.3**
Net interest margin (%)	**1.59**	1.64	1.70	1.67	1.74	**na**	**na**
Non-Interest Revenue							
Securities commissions and fees	**1,107**	1,036	1,023	1,025	964	**3.8**	**(0.9)**
Deposit and payment service charges	**1,243**	1,221	1,204	1,134	1,109	**3.1**	**4.1**
Trading revenues	**296**	15	298	705	84	**20.2**	**(6.0)**
Lending fees	**1,391**	1,295	1,192	997	917	**10.1**	**8.9**
Card fees	**442**	358	437	428	329	**2.2**	**(4.3)**
Investment management and custodial fees	**1,982**	1,807	1,747	1,749	1,627	**4.9**	**14.9**
Mutual fund revenues	**1,595**	1,417	1,419	1,473	1,411	**3.2**	**9.7**
Underwriting and advisory fees	**1,421**	1,070	975	943	1,044	**11.5**	**10.7**
Securities gains, other than trading	**591**	124	249	239	171	**47.8**	**12.1**
Foreign exchange, other than trading	**167**	127	166	182	191	**0.6**	**2.6**
Insurance revenue	**1,941**	2,178	3,183	1,879	2,070	**(0.8)**	**3.3**
Investments in associates and joint ventures	**248**	161	151	167	386	**12.1**	**nm**
Other revenues	**452**	406	551	546	529	**(1.7)**	**2.6**
Total Non-Interest Revenue	**12,876**	11,215	12,595	11,467	10,832	**5.2**	**5.4**
Year-over-year non-interest revenue growth (%)	**14.8**	(11.0)	9.8	5.9	8.2	**na**	**na**
Non-interest revenue as a % of total revenue	**47.4**	44.5	49.4	50.1	49.0	**na**	**na**
Adjusted Non-Interest Revenue (2)	**12,847**	11,215	12,595	11,467	10,832	**4.9**	**5.4**
Year-over-year adjusted non-interest revenue growth (%)	**14.5**	(11.0)	9.8	5.9	7.3	**na**	**na**
Adjusted non-interest revenue as a % of total adjusted revenue (2)	**47.3**	44.5	49.4	50.1	49.0	**na**	**na**
Total Revenue	**27,186**	25,186	25,483	22,905	22,107	**5.3**	**6.1**
Year-over-year total revenue growth (%)	**7.9**	(1.2)	11.3	3.6	5.5	**na**	**na**
Total Revenue, net of CCPB (2)	**25,787**	23,478	22,774	21,553	20,569	**5.8**	**6.3**
Year-over-year total revenue growth, net of CCPB (%) (2)	**9.8**	3.1	5.7	4.8	5.9	**na**	**na**
Total Adjusted Revenue (2)	**27,157**	25,186	25,483	22,905	22,107	**5.2**	**6.2**
Year-over-year total adjusted revenue growth (%) (2)	**7.8**	(1.2)	11.3	3.6	5.1	**na**	**na**
Total Adjusted Revenue, net of CCPB (2)	**25,758**	23,478	22,799	21,553	20,569	**5.7**	**6.5**
Year-over-year total adjusted revenue growth, net of CCPB (%) (2)	**9.7**	3.0	5.8	4.8	5.5	**na**	**na**

Five-year and ten-year CAGR based on CGAAP in 2011 and IFRS in 2016 and 2021.

The adoption of new IFRS standards in 2018 and 2020 only impacted our results prospectively.

(1) Net interest margin is calculated based on average earning assets, which represents the daily average balance of deposits at central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans, over a one-year period.

(2) These measures are non-GAAP. Further information on the use of non-GAAP measures is provided in the Non-GAAP and Other Financial Measures section.

na – not applicable

nm – not meaningful

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Table 4: Non-Interest Expense, Expense-to-Revenue Ratio and Provision for Income Taxes and Other Taxes

($ millions, except as noted) For the year ended October 31	2021	2020	2019	2018	2017	5-year CAGR	10-year CAGR
Non-Interest Expense (1)							
Employee compensation							
Salaries	**4,041**	4,163	4,762	4,176	3,996	**(0.2)**	**4.3**
Performance-based compensation	**3,152**	2,632	2,610	2,510	2,386	**6.7**	**7.3**
Employee benefits	**1,129**	1,149	1,051	775	1,086	**2.0**	**6.2**
Total employee compensation	**8,322**	7,944	8,423	7,461	7,468	**2.4**	**5.6**
Premises and equipment (2)							
Rental of real estate	**231**	225	595	526	494	**(13.9)**	**(4.4)**
Premises, furniture and fixtures	**794**	771	283	345	282	**18.7**	**9.9**
Property taxes	**36**	42	37	38	39	**(3.0)**	**1.9**
Computers and equipment	**2,335**	2,164	2,073	1,844	1,676	**8.9**	**10.3**
Total premises and equipment	**3,396**	3,202	2,988	2,753	2,491	**7.3**	**8.0**
Other expenses							
Travel and business development	**397**	384	545	519	540	**(4.9)**	**0.4**
Communications	**264**	304	296	282	286	**(2.1)**	**0.2**
Professional fees	**607**	555	568	572	569	**2.8**	**(0.3)**
Other	**1,889**	1,168	1,256	1,387	1,353	**6.7**	**8.0**
Total other expenses	**3,157**	2,411	2,665	2,760	2,748	**3.2**	**4.0**
Amortization of intangible assets	**634**	620	554	503	485	**7.4**	**10.6**
Total Non-Interest Expense	**15,509**	14,177	14,630	13,477	13,192	**3.7**	**5.9**
Year-over-year total non-interest expense growth (%)	**9.4**	(3.1)	8.6	2.2	2.1	**na**	**na**
Total Adjusted Non-Interest Expense (3)	**14,550**	14,042	14,005	13,344	12,897	**3.1**	**5.6**
Year-over-year total adjusted non-interest expense growth (%)	**3.6**	0.3	5.0	3.5	3.5	**na**	**na**
Non-interest expense-to-revenue ratio (Efficiency ratio) (%) (4)	**57.0**	56.3	57.4	58.8	59.7	**na**	**na**
Adjusted non-interest expense-to-revenue ratio (Adjusted efficiency ratio) (%) (3) (4)	**53.6**	55.8	55.0	58.3	58.3	**na**	**na**
Efficiency ratio, net of CCPB (%) (3) (4)	**60.1**	60.4	64.2	62.5	64.1	**na**	**na**
Adjusted efficiency ratio, net of CCPB (%) (3) (4)	**56.5**	59.8	61.4	61.9	62.7	**na**	**na**
Provision for Income Taxes and Other Taxes							
Payroll levies	**355**	362	354	328	322	**1.9**	**5.7**
Property taxes	**36**	42	37	38	39	**(3.0)**	**1.9**
Provincial capital taxes	**36**	33	35	29	29	**3.3**	**(2.1)**
Business taxes	**10**	9	9	8	8	**6.9**	**4.0**
Harmonized sales tax, GST, VAT and other sales taxes	**382**	397	384	350	330	**3.8**	**5.0**
Sundry taxes	**1**	1	1	1	1	**nm**	**nm**
Total government levies other than income taxes (other taxes) (1)	**820**	844	820	754	729	**2.5**	**4.6**
Provision for income taxes	**2,504**	1,251	1,514	1,961	1,292	**17.9**	**11.1**
Provision for Income Taxes and Other Taxes	**3,324**	2,095	2,334	2,715	2,021	**12.7**	**9.0**
Provision for income taxes and other taxes as a % of income before total government levies and taxes (1) (3)	**30.0**	29.1	28.8	33.3	27.5	**na**	**na**
Effective tax rate (%)	**24.4**	19.7	20.8	26.5	19.5	**na**	**na**
Adjusted effective tax rate (%) (3)	**22.7**	19.8	21.1	20.7	19.8	**na**	**na**

Five-year and ten-year CAGR based on CGAAP in 2011 and IFRS in 2016 and 2021.

The adoption of new IFRS standards in 2018 and 2020 only impacted our results prospectively.

(1) Other taxes are included in various non-interest expense categories. Total provision for income taxes and other taxes is a non-GAAP financial measure. Information regarding the usefulness of this measure is provided in the Provision for Income and Other Taxes section of the annual MD&A.

(2) Effective 2020, the bank adopted IFRS 16. Prior periods have not been restated. Depreciation on the right-of-use assets has been recorded in premises, furniture and fixtures. Previously most of our real estate leases were classified as operating leases, with rent expense recorded in rental of real estate.

(3) These measures and ratios are non-GAAP. Further information is provided in the Non-GAAP and Other Financial Measures section. A quantitative reconciliation of revenue net of CCPB and all adjusted results for all years presented is provided in Table 2.

(4) For further information regarding the composition of non-GAAP and other financial measures, including supplementary financial measures, refer to the Glossary of Financial Terms.

na – not applicable

nm – not meaningful

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Table 5: Average Assets, Liabilities and Interest Rates

($ millions, except as noted) For the year ended October 31	2021 Average balances	2021 Average interest rate (%)	2021 Interest income/ expense	2020 Average balances	2020 Average interest rate (%)	2020 Interest income/ expense	2019 Average balances	2019 Average interest rate (%)	2019 Interest income/ expense
Assets									
Canadian Dollar									
Deposits with other banks and other interest bearing assets	**34,255**	**0.23**	**79**	13,605	0.33	45	2,972	2.03	60
Securities	**90,140**	**1.79**	**1,618**	94,343	2.32	2,186	83,042	2.66	2,210
Securities borrowed or purchased under resale agreements	**43,375**	**0.44**	**190**	44,460	1.05	468	39,074	2.10	820
Loans									
Residential mortgages	**122,661**	**2.58**	**3,168**	114,374	2.88	3,296	109,289	3.04	3,317
Non-residential mortgages	**5,368**	**3.19**	**171**	5,556	3.38	188	5,637	3.43	194
Personal and credit cards	**66,247**	**4.26**	**2,823**	62,920	4.95	3,116	60,680	5.49	3,333
Business and government	**82,858**	**3.37**	**2,796**	73,596	3.79	2,787	62,965	4.10	2,580
Total loans	**277,134**	**3.23**	**8,958**	256,446	3.66	9,387	238,571	3.95	9,424
Total Canadian dollar	**444,904**	**2.44**	**10,845**	408,854	2.96	12,086	363,659	3.44	12,514
U.S. Dollar and Other Currencies									
Deposits with other banks and other interest bearing assets	**68,612**	**0.18**	**124**	61,050	0.62	376	47,001	1.72	808
Securities	**145,504**	**1.61**	**2,345**	124,567	2.24	2,794	109,072	3.05	3,331
Securities borrowed or purchased under resale agreements	**62,250**	**0.39**	**245**	66,109	0.85	560	65,943	2.11	1,391
Loans									
Residential mortgages	**8,055**	**3.02**	**243**	10,499	3.35	352	11,554	3.67	424
Non-residential mortgages	**10,684**	**3.18**	**339**	10,792	3.71	401	9,356	4.75	445
Personal and credit cards	**13,344**	**3.86**	**516**	13,659	4.37	597	11,907	4.91	585
Business and government	**141,003**	**3.71**	**5,230**	155,229	3.96	6,149	139,192	4.78	6,654
Total loans	**173,086**	**3.66**	**6,328**	190,179	3.94	7,499	172,009	4.71	8,108
Total U.S. dollar and other currencies	**449,452**	**2.01**	**9,042**	441,905	2.54	11,229	394,025	3.46	13,638
Other non-interest bearing assets	**86,784**			91,691			75,568		
Total All Currencies									
Total assets and interest income	**981,140**	**2.03**	**19,887**	942,450	2.47	23,315	833,252	3.14	26,152
Liabilities									
Canadian Dollar									
Deposits									
Banks	**9,616**	**0.35**	**33**	11,715	0.68	80	4,905	1.02	50
Business and government	**157,226**	**0.69**	**1,091**	136,976	1.24	1,704	113,502	1.88	2,133
Individuals	**142,833**	**0.44**	**622**	135,175	0.87	1,181	120,852	1.05	1,269
Total deposits	**309,675**	**0.56**	**1,746**	283,866	1.04	2,965	239,259	1.44	3,452
Securities sold but not yet purchased and securities lent or sold under repurchase agreements (1)	**55,415**	**0.91**	**506**	49,676	1.50	747	44,815	2.56	1,146
Subordinated debt and other interest bearing liabilities	**26,704**	**2.23**	**597**	26,387	2.69	711	25,099	2.70	677
Total Canadian dollar	**391,794**	**0.73**	**2,849**	359,929	1.23	4,423	309,173	1.71	5,275
U.S. Dollar and Other Currencies									
Deposits									
Banks	**24,200**	**0.33**	**80**	22,856	1.05	241	24,534	2.41	592
Business and government	**272,380**	**0.45**	**1,234**	244,449	0.99	2,424	211,970	1.79	3,802
Individuals	**71,795**	**0.22**	**160**	77,930	0.78	609	71,005	1.08	770
Total deposits	**368,375**	**0.40**	**1,474**	345,235	0.95	3,274	307,509	1.68	5,164
Securities sold but not yet purchased and securities lent or sold under repurchase agreements (1)	**74,376**	**1.35**	**1,005**	80,656	1.54	1,243	76,889	2.91	2,235
Subordinated debt and other interest bearing liabilities	**13,593**	**1.83**	**249**	18,207	2.22	404	19,896	2.96	590
Total U.S. dollar and other currencies	**456,344**	**0.60**	**2,728**	444,098	1.11	4,921	404,294	1.98	7,989
Other non-interest bearing liabilities	**76,708**			84,683			70,916		
Total All Currencies									
Total liabilities and interest expense	**924,846**	**0.60**	**5,577**	888,710	1.05	9,344	784,383	1.69	13,264
Shareholders' equity	**56,294**			53,740			48,869		
Total Liabilities, Interest Expense and Shareholders' Equity	**981,140**	**0.57**	**5,577**	942,450	0.99	9,344	833,252	1.59	13,264
Net interest margin									
– based on earning assets		**1.59**			1.64			1.70	
– based on total assets		**1.46**			1.48			1.55	
Net interest income			**14,310**			13,971			12,888

(1) For the years ended October 31, 2021, 2020 and 2019, the maximum amount of securities lent or sold under repurchase agreements at any month end amounted to $102,567 million, $106,695 million and $96,399 million, respectively.

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Table 6: Volume/Rate Analysis of Changes in Net Interest Income

($ millions) For the year ended October 31	2021/2020 Increase (decrease) due to change in Average balance	Average rate	Total	2020/2019 Increase (decrease) due to change in Average balance	Average rate	Total
Assets						
Canadian Dollar						
Deposits with other banks and other interest bearing assets	**69**	**(35)**	**34**	216	(231)	(15)
Securities	**(98)**	**(470)**	**(568)**	301	(325)	(24)
Securities borrowed or purchased under resale agreements	**(11)**	**(267)**	**(278)**	113	(465)	(352)
Loans						
Residential mortgages	**239**	**(367)**	**(128)**	154	(175)	(21)
Non-residential mortgages	**(6)**	**(11)**	**(17)**	(3)	(3)	(6)
Personal and credit cards	**165**	**(458)**	**(293)**	123	(340)	(217)
Business and government	**350**	**(341)**	**9**	436	(229)	207
Total loans	**748**	**(1,177)**	**(429)**	710	(747)	(37)
Change in Canadian dollar interest income	**708**	**(1,949)**	**(1,241)**	1,340	(1,768)	(428)
U.S. Dollar and Other Currencies						
Deposits with other banks and other interest bearing assets	**46**	**(298)**	**(252)**	242	(674)	(432)
Securities	**469**	**(918)**	**(449)**	473	(1,010)	(537)
Securities borrowed or purchased under resale agreements	**(32)**	**(283)**	**(315)**	3	(834)	(831)
Loans						
Residential mortgages	**(82)**	**(27)**	**(109)**	(39)	(33)	(72)
Non-residential mortgages	**(4)**	**(58)**	**(62)**	68	(112)	(44)
Personal and credit cards	**(13)**	**(68)**	**(81)**	86	(74)	12
Business and government	**(564)**	**(355)**	**(919)**	767	(1,272)	(505)
Total loans	**(663)**	**(508)**	**(1,171)**	882	(1,491)	(609)
Change in U.S. dollar and other currencies interest income	**(180)**	**(2,007)**	**(2,187)**	1,600	(4,009)	(2,409)
Total All Currencies						
Change in total interest income (a)	**528**	**(3,956)**	**(3,428)**	2,940	(5,777)	(2,837)
Liabilities						
Canadian Dollar						
Deposits						
Banks	**(15)**	**(32)**	**(47)**	70	(40)	30
Business and government	**252**	**(865)**	**(613)**	441	(870)	(429)
Individuals	**67**	**(626)**	**(559)**	150	(238)	(88)
Total deposits	**304**	**(1,523)**	**(1,219)**	661	(1,148)	(487)
Securities sold but not yet purchased and securities lent or sold under repurchase agreements	**86**	**(327)**	**(241)**	125	(524)	(399)
Subordinated debt and other interest bearing liabilities	**9**	**(123)**	**(114)**	35	(1)	34
Change in Canadian dollar interest expense	**399**	**(1,973)**	**(1,574)**	821	(1,673)	(852)
U.S. Dollar and Other Currencies						
Deposits						
Banks	**14**	**(175)**	**(161)**	(40)	(311)	(351)
Business and government	**277**	**(1,467)**	**(1,190)**	582	(1,960)	(1,378)
Individuals	**(48)**	**(401)**	**(449)**	75	(236)	(161)
Total deposits	**243**	**(2,043)**	**(1,800)**	617	(2,507)	(1,890)
Securities sold but not yet purchased and securities lent or sold under repurchase agreements	**(97)**	**(141)**	**(238)**	109	(1,101)	(992)
Subordinated debt and other interest bearing liabilities	**(102)**	**(53)**	**(155)**	(50)	(136)	(186)
Change in U.S. dollar and other currencies interest expense	**44**	**(2,237)**	**(2,193)**	676	(3,744)	(3,068)
Total All Currencies						
Change in total interest expense (b)	**443**	**(4,210)**	**(3,767)**	1,497	(5,417)	(3,920)
Change in total net interest income (a – b)	**85**	**254**	**339**	1,443	(360)	1,083

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Table 7: Net Loans and Acceptances – Segmented Information (1) (2)

($ millions)	Canada					United States					Other countries				
As at October 31	**2021**	2020	2019	2018	2017	**2021**	2020	2019	2018	2017	**2021**	2020	2019	2018	2017
Consumer															
Residential mortgages	**128,020**	117,886	112,448	107,956	106,647	**7,718**	9,122	11,275	11,645	8,587	**–**	–	–	–	–
Credit cards	**7,642**	7,391	8,289	7,788	7,550	**461**	498	570	541	521	**–**	–	–	–	–
Consumer instalment and other personal loans	**63,841**	57,288	55,311	52,706	51,637	**13,232**	12,286	11,752	9,918	9,798	**–**	469	537	458	373
Total consumer	**199,503**	182,565	176,048	168,450	165,834	**21,411**	21,906	23,597	22,104	18,906	**–**	469	537	458	373
Total business and government	**113,895**	107,408	106,020	92,927	82,632	**132,087**	139,573	135,550	110,934	97,478	**7,453**	11,568	10,212	9,153	11,270
Total loans and acceptances, net of allowance for credit losses on impaired loans	**313,398**	289,973	282,068	261,377	248,466	**153,498**	161,479	159,147	133,038	116,384	**7,453**	12,037	10,749	9,611	11,643
Allowance for credit losses on performing loans (3)	**(1,143)**	(1,323)	(740)	(689)	(799)	**(910)**	(1,225)	(630)	(574)	(641)	**(13)**	(28)	(17)	(6)	–
Total net loans and acceptances	**312,255**	288,650	281,328	260,688	247,667	**152,588**	160,254	158,517	132,464	115,743	**7,440**	12,009	10,732	9,605	11,643

Table 8: Net Impaired Loans and Acceptances (NIL) – Segmented Information (2) (4)

($ millions, except as noted)	Canada					United States					Other countries				
As at October 31	**2021**	2020	2019	2018	2017	**2021**	2020	2019	2018	2017	**2021**	2020	2019	2018	2017
Consumer															
Residential mortgages	**216**	225	233	185	206	**123**	168	164	171	161	**–**	–	–	–	–
Consumer instalment and other personal loans	**83**	89	138	126	127	**113**	146	194	252	293	**–**	–	–	–	–
Total consumer	**299**	314	371	311	333	**236**	314	358	423	454	**–**	–	–	–	–
Business and government	**551**	726	336	235	248	**585**	1,487	1,101	597	762	**–**	70	–	–	30
Total impaired loans and acceptances, net of allowance for credit losses on impaired loans	**850**	1,040	707	546	581	**821**	1,801	1,459	1,020	1,216	**–**	70	–	–	30
Condition Ratios (1)															
NIL as a % of net loans and acceptances	**0.27**	0.36	0.25	0.21	0.23	**0.54**	1.12	0.92	0.77	1.05	**–**	0.58	–	–	0.26
NIL as a % of net loans and acceptances															
Consumer	**0.15**	0.17	0.21	0.18	0.20	**1.10**	1.43	1.52	1.91	2.40	**–**	–	–	–	–
Business and government	**0.48**	0.68	0.32	0.25	0.30	**0.44**	1.07	0.81	0.54	0.78	**–**	0.61	–	–	0.27

(1) Aggregate Net Loans and Acceptances balances are net of allowance for credit losses on performing loans and impaired loans (excluding those related to off-balance sheet instruments and undrawn commitments). The Consumer and Business and government Net Loans and Acceptances balances are net of allowance for credit losses on impaired loans only (excluding those related to off-balance sheet instruments and undrawn commitments).
(2) Segmented credit information by geographic area is based upon the country of ultimate risk.
(3) Prior periods have not been restated to reflect the adoption of IFRS 9 in 2018. IFRS 9 has been applied prospectively.
(4) Net Impaired Loans and Acceptances are net of allowance for credit losses on impaired loans (excluding those related to off-balance sheet instruments and undrawn commitments).

Total				
2021	2020	2019	2018	2017
135,738	127,008	123,723	119,601	115,234
8,103	7,889	8,859	8,329	8,071
77,073	70,043	67,600	63,082	61,808
220,914	204,940	200,182	191,012	185,113
253,435	258,549	251,782	213,014	191,380
474,349	463,489	451,964	404,026	376,493
(2,066)	(2,576)	(1,387)	(1,269)	(1,440)
472,283	460,913	450,577	402,757	375,053

Total				
2021	2020	2019	2018	2017
339	393	397	356	367
196	235	332	378	420
535	628	729	734	787
1,136	2,283	1,437	832	1,040
1,671	2,911	2,166	1,566	1,827
0.35	0.63	0.48	0.39	0.49
0.24	0.31	0.36	0.38	0.43
0.45	0.88	0.57	0.39	0.54

Table 9: Net Loans and Acceptances – Segmented Information (1) (2) (3)

($ millions)

As at October 31	**2021**	2020	2019	2018	2017
Net Loans and Acceptances by Province					
Atlantic provinces	**15,996**	15,105	14,601	13,925	13,686
Quebec	**48,090**	43,859	42,985	40,177	38,802
Ontario	**136,638**	124,526	119,629	109,575	103,152
Prairie provinces	**51,460**	50,634	51,639	48,634	46,853
British Columbia and territories	**60,071**	54,526	52,474	48,377	45,174
Total net loans and acceptances in Canada	**312,255**	288,650	281,328	260,688	247,667
Net Business and Government Loans by Industry					
Commercial real estate	**43,259**	39,990	36,707	31,028	26,479
Construction (non-real estate)	**4,367**	4,799	4,943	3,916	3,916
Retail trade	**16,924**	20,480	23,085	20,403	18,496
Wholesale trade	**14,727**	15,715	16,939	14,814	11,612
Agriculture	**13,739**	13,549	13,268	12,321	11,114
Communications	**787**	771	840	729	625
Financing products	**1,084**	3,927	4,124	4,439	5,060
Manufacturing	**28,034**	28,171	27,334	22,870	19,824
Mining	**1,832**	2,496	2,524	1,936	1,344
Oil and gas	**5,905**	9,445	10,051	7,227	6,551
Transportation	**12,952**	12,921	12,390	10,973	10,496
Utilities	**7,263**	8,496	8,153	5,958	4,392
Forest products	**780**	1,012	1,152	840	835
Service industries	**45,019**	47,769	45,730	38,348	33,705
Financial	**52,531**	44,986	40,880	32,463	32,265
Government	**1,720**	2,121	1,801	1,460	1,470
Other	**2,512**	1,901	1,861	3,289	3,196
	253,435	258,549	251,782	213,014	191,380

Table 10: Net Impaired Loans and Acceptances – Segmented Information (3) (4)

($ millions)

As at October 31	**2021**	2020	2019	2018	2017
Net Impaired Business and Government Loans					
Commercial real estate	**56**	78	49	45	45
Construction (non-real estate)	**58**	86	21	18	39
Retail trade	**143**	407	56	50	36
Wholesale trade	**38**	69	76	42	97
Agriculture	**190**	313	291	193	238
Communications	**1**	9	6	–	–
Financing products	**–**	147	–	–	–
Manufacturing	**130**	225	191	77	70
Mining	**2**	30	–	1	1
Oil and gas	**63**	366	356	57	143
Transportation	**73**	112	119	90	156
Utilities	**2**	1	2	2	6
Forest products	**2**	7	2	–	2
Service industries	**344**	387	240	191	181
Financial	**12**	41	28	66	2
Government	**2**	3	–	–	3
Other	**20**	2	–	–	21
	1,136	2,283	1,437	832	1,040

(1) Aggregate Net Loans and Acceptances are net of allowance for credit losses on performing loans and impaired loans (excluding those related to off-balance sheet instruments and undrawn commitments). The Consumer and Business and government Net Loans and Acceptances balances are net of allowance for credit losses on impaired loans only (excluding those related to off-balance sheet instruments and undrawn commitments).
(2) Segmented credit information by geographic area is based upon the country of ultimate risk.
(3) Prior period information for certain sectors has been adjusted to align with the current year's presentation, which better classifies the realigned sectors.
(4) Net Impaired Loans and Acceptances are net of allowance for credit losses on impaired loans (excluding those related to off-balance sheet instruments and undrawn commitments).

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Table 11: Changes in Gross Impaired Loans – Segmented Information (1) (2)

($ millions, except as noted)	Canada					United States					Other countries				
As at October 31	**2021**	2020	2019	2018	2017	**2021**	2020	2019	2018	2017	**2021**	2020	2019	2018	2017
Gross impaired loans and acceptances (GIL), beginning of year															
Consumer	**414**	497	426	439	407	**335**	385	470	508	585	**–**	–	–	–	–
Business and government	**929**	417	309	354	380	**1,876**	1,330	731	869	1,009	**84**	–	–	50	2
Total GIL, beginning of year	**1,343**	914	735	793	787	**2,211**	1,715	1,201	1,377	1,594	**84**	–	–	50	2
Additions to impaired loans and acceptances															
Consumer	**712**	723	895	836	697	**134**	165	244	274	360	**–**	–	–	–	–
Business and government	**616**	1,097	323	321	281	**313**	2,571	1,224	647	799	**–**	93	–	–	56
Total additions	**1,328**	1,820	1,218	1,157	978	**447**	2,736	1,468	921	1,159	**–**	93	–	–	56
Reductions to impaired loans and acceptances (3)															
Consumer	**(547)**	(554)	(586)	(628)	(479)	**(162)**	(136)	(242)	(212)	(301)	**–**	–	–	–	–
Business and government	**(636)**	(366)	(171)	(282)	(259)	**(1,231)**	(1,528)	(466)	(573)	(692)	**(84)**	(9)	–	(49)	(7)
Total reductions due to net repayments and other	**(1,183)**	(920)	(757)	(910)	(738)	**(1,393)**	(1,664)	(708)	(785)	(993)	**(84)**	(9)	–	(49)	(7)
Write-offs (4)															
Consumer	**(197)**	(252)	(238)	(221)	(186)	**(51)**	(79)	(87)	(100)	(136)	**–**	–	–	–	–
Business and government	**(96)**	(219)	(44)	(84)	(48)	**(240)**	(497)	(159)	(212)	(247)	**–**	–	–	(1)	(1)
Total write-offs	**(293)**	(471)	(282)	(305)	(234)	**(291)**	(576)	(246)	(312)	(383)	**–**	–	–	(1)	(1)
Gross impaired loans and acceptances, end of year															
Consumer	**382**	414	497	426	439	**256**	335	385	470	508	**–**	–	–	–	–
Business and government	**813**	929	417	309	354	**718**	1,876	1,330	731	869	**–**	84	–	–	50
Total GIL, end of year	**1,195**	1,343	914	735	793	**974**	2,211	1,715	1,201	1,377	**–**	84	–	–	50
Condition Ratios															
GIL as a % of Gross Loans															
Consumer	**0.19**	0.23	0.28	0.25	0.26	**1.19**	1.53	1.63	2.12	2.69	**–**	–	–	–	–
Business and government	**0.71**	0.86	0.39	0.33	0.43	**0.54**	1.34	0.98	0.67	0.89	**–**	0.73	–	–	0.44
Total Loans and Acceptances	**0.38**	0.46	0.32	0.28	0.32	**0.63**	1.37	1.08	0.91	1.18	**–**	0.70	–	–	0.43

(1) GIL excludes Purchased Credit Impaired Loans.
(2) Segmented credit information by geographic area is based upon the country of ultimate risk.
(3) Includes amounts returning to performing status, sales, repayments, the impact of foreign exchange, and offsets for consumer write-offs that are not recognized as formations.
(4) Excludes certain loans that are written off directly and not classified as new formations.

Total				
2021	2020	2019	2018	2017
749	882	896	947	992
2,889	1,747	1,040	1,273	1,391
3,638	2,629	1,936	2,220	2,383
846	888	1,139	1,110	1,057
929	3,761	1,547	968	1,136
1,775	4,649	2,686	2,078	2,193
(709)	(690)	(828)	(840)	(780)
(1,951)	(1,903)	(637)	(904)	(958)
(2,660)	(2,593)	(1,465)	(1,744)	(1,738)
(248)	(331)	(325)	(321)	(322)
(336)	(716)	(203)	(297)	(296)
(584)	(1,047)	(528)	(618)	(618)
638	749	882	896	947
1,531	2,889	1,747	1,040	1,273
2,169	3,638	2,629	1,936	2,220
0.29	0.37	0.44	0.47	0.51
0.60	1.11	0.69	0.49	0.66
0.46	0.78	0.58	0.48	0.59

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Table 12: Changes in Allowance for Credit Losses – Segmented Information (1) (2)

($ millions, except as noted)	Canada					United States					Other countries				
As at October 31	**2021**	2020	2019	2018	2017	**2021**	2020	2019	2018	2017	**2021**	2020	2019	2018	2017
Allowance for credit losses (ACL), beginning of year															
Consumer	**1,073**	749	725	705	595	**217**	200	230	301	254	**–**	–	–	–	–
Business and government	**782**	303	255	317	471	**1,696**	821	648	566	793	**46**	21	12	29	1
Total ACL, beginning of year	**1,855**	1,052	980	1,022	1,066	**1,913**	1,021	878	867	1,047	**46**	21	12	29	1
Provision for credit losses (3)															
Consumer	**201**	801	470	416	394	**(48)**	86	1	(9)	74	**–**	–	–	–	–
Business and government	**117**	685	93	28	37	**(211)**	1,336	302	243	220	**(32)**	29	9	(21)	21
Total provision for credit losses	**318**	1,486	563	444	431	**(259)**	1,422	303	234	294	**(32)**	29	9	(21)	21
Recoveries															
Consumer	**127**	117	120	127	134	**64**	63	104	75	81	**–**	–	–	–	–
Business and government	**23**	20	4	5	10	**19**	52	62	51	40	**–**	–	–	3	–
Total recoveries	**150**	137	124	132	144	**83**	115	166	126	121	**–**	–	–	3	–
Write-offs															
Consumer	**(442)**	(556)	(551)	(515)	(501)	**(72)**	(108)	(113)	(125)	(157)	**–**	–	–	–	–
Business and government	**(96)**	(219)	(44)	(84)	(48)	**(240)**	(497)	(159)	(212)	(247)	**–**	–	–	(1)	(1)
Total write-offs	**(538)**	(775)	(595)	(599)	(549)	**(312)**	(605)	(272)	(337)	(404)	**–**	–	–	(1)	(1)
Other, including foreign exchange rate changes															
Consumer	**(52)**	(38)	(15)	(8)	(10)	**(28)**	(24)	(22)	(12)	(23)	**–**	–	–	–	–
Business and government	**(34)**	(7)	(5)	(11)	(27)	**(153)**	(16)	(32)	–	(114)	**1**	(4)	–	2	(1)
Total Other, including foreign exchange rate changes	**(86)**	(45)	(20)	(19)	(37)	**(181)**	(40)	(54)	(12)	(137)	**1**	(4)	–	2	(1)
ACL, end of year															
Consumer	**907**	1,073	749	725	612	**133**	217	200	230	229	**–**	–	–	–	–
Business and government	**792**	782	303	255	443	**1,111**	1,696	821	648	692	**15**	46	21	12	20
Total ACL, end of year	**1,699**	1,855	1,052	980	1,055	**1,244**	1,913	1,021	878	921	**15**	46	21	12	20
Net write-offs as a % of average loans and acceptances (4)	**un**	un	un	un	un	**un**	un	un	un	un	**un**	un	un	un	un

Table 13: Allocation of Allowance for Credit Losses – Segmented Information (1) (5)

($ millions, except as noted)	Canada					United States					Other countries				
As at October 31	**2021**	2020	2019	2018	2017	**2021**	2020	2019	2018	2017	**2021**	2020	2019	2018	2017
Consumer															
Residential mortgages	**7**	11	10	9	12	**5**	5	7	10	12	**–**	–	–	–	–
Consumer instalment and other personal loans	**76**	89	116	106	94	**15**	16	20	37	42	**–**	–	–	–	–
Total consumer	**83**	100	126	115	106	**20**	21	27	47	54	**–**	–	–	–	–
Business and government	**262**	203	81	74	106	**133**	389	229	134	107	**–**	14	–	–	20
Total allowance for credit losses on impaired loans	**345**	303	207	189	212	**153**	410	256	181	161	**–**	14	–	–	20
Allowance for credit losses on performing loans (3)	**1,143**	1,323	740	689	799	**910**	1,225	630	574	641	**13**	28	17	6	–
Allowance for credit losses	**1,488**	1,626	947	878	1,011	**1,063**	1,635	886	755	802	**13**	42	17	6	20
Coverage Ratios															
Allowance for credit losses on impaired loans as a % of gross impaired loans and acceptances															
Total	**28.9**	22.6	22.6	25.7	26.7	**15.7**	18.5	14.9	15.1	11.7	**–**	16.7	–	–	40.0
Consumer	**21.7**	24.2	25.4	27.0	24.1	**7.8**	6.3	7.0	10.0	10.6	**–**	–	–	–	–
Business and government	**32.2**	21.9	19.4	23.9	29.9	**18.5**	20.7	17.2	18.3	12.3	**–**	16.7	–	–	40.0

(1) Segmented credit information by geographic area is based upon country of ultimate risk.
(2) Prior periods have not been restated to reflect the adoption of IFRS 9 in 2018. IFRS 9 has been applied prospectively.
(3) Excludes provision for credit losses on other assets.
(4) Aggregate Net Loans and Acceptances balances are net of allowance for credit losses on performing loans and impaired loans (excluding those related to off-balance sheet instruments).
(5) Amounts exclude allowance for credit losses included in Other Liabilities.

un – unavailable

Total				
2021	2020	2019	2018	2017
1,290	949	955	1,006	849
2,524	1,145	915	912	1,265
3,814	2,094	1,870	1,918	2,114
153	887	471	407	468
(126)	2,050	404	250	278
27	2,937	875	657	746
191	180	224	202	215
42	72	66	59	50
233	252	290	261	265
(514)	(664)	(664)	(640)	(658)
(336)	(716)	(203)	(297)	(296)
(850)	(1,380)	(867)	(937)	(954)
(80)	(62)	(37)	(20)	(33)
(186)	(27)	(37)	(9)	(142)
(266)	(89)	(74)	(29)	(175)
1,040	1,290	949	955	841
1,918	2,524	1,145	915	1,155
2,958	3,814	2,094	1,870	1,996
0.13	0.24	0.13	0.17	0.19

Total				
2021	2020	2019	2018	2017
12	16	17	19	24
91	105	136	143	136
103	121	153	162	160
395	606	310	208	233
498	727	463	370	393
2,066	2,576	1,387	1,269	1,440
2,564	3,303	1,850	1,639	1,833
23.0	20.0	17.6	19.1	17.7
16.1	16.2	17.3	18.1	16.9
25.8	21.0	17.7	20.0	18.3

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Table 14: Allowance for Credit Losses on Impaired Loans – Segmented Information

($ millions)

As at October 31	2021	2020	2019	2018	2017
Business and Government					
Allowance for Credit Losses on Impaired Loans by Industry					
Commercial real estate	**11**	11	9	8	15
Construction (non-real estate)	**9**	18	8	16	14
Retail trade	**90**	53	11	17	14
Wholesale trade	**36**	35	52	23	17
Agriculture	**23**	36	22	16	11
Communications	**5**	8	7	–	–
Financing products	**–**	–	–	–	–
Manufacturing	**47**	67	35	20	51
Mining	**–**	10	–	–	–
Oil and gas	**77**	184	48	17	42
Transportation	**17**	32	30	31	13
Utilities	**1**	–	–	–	2
Forest products	**2**	5	–	1	1
Service industries	**73**	132	79	46	51
Financial	**3**	7	3	1	2
Government	**–**	1	1	–	–
Other	**1**	7	5	12	–
Total business and government (1)	**395**	606	310	208	233

Table 15: Provision for Credit Losses – Segmented Information (2)

($ millions)

For the year ended October 31	2021	2020	2019	2018	2017
Consumer					
Residential mortgages	**16**	17	16	19	11
Cards	**194**	261	246	216	232
Consumer instalment and other personal loans	**158**	226	201	231	232
Total consumer	**368**	504	463	466	475
Business and Government					
Commercial real estate	**7**	6	5	(2)	(4)
Construction (non-real estate)	**3**	70	1	–	25
Retail trade	**38**	73	(2)	10	29
Wholesale trade	**18**	22	54	18	24
Agriculture	**2**	30	27	37	31
Communications	**(2)**	1	7	–	(1)
Financing products	**–**	–	–	–	–
Manufacturing	**41**	128	25	20	28
Mining	**(9)**	10	–	–	–
Oil and gas	**18**	293	51	(24)	9
Transportation	**11**	116	67	74	108
Utilities	**1**	1	1	(3)	–
Forest products	**2**	6	–	(1)	–
Service industries	**30**	243	68	87	102
Financial	**(4)**	(6)	(35)	(4)	(3)
Government	**–**	–	1	–	–
Other	**1**	25	18	22	(1)
Total business and government	**157**	1,018	288	234	347
Total provision for credit losses on impaired loans	**525**	1,522	751	700	822
Provision for credit losses on performing loans (3)	**(505)**	1,431	121	(38)	(76)
	20	2,953	872	662	746
Performance Ratios (%)					
PCL-to-average net loans and acceptances	**0.00**	0.63	0.20	0.17	0.20
PCL on impaired loans to segmented average net loans and acceptances					
Consumer	**0.17**	0.25	0.24	0.25	0.26
Business and government	**0.06**	0.39	0.12	0.12	0.18
PCL on impaired loans-to-average net loans and acceptances	**0.11**	0.33	0.17	0.18	0.22

(1) Amounts exclude allowance for credit losses included in Other Liabilities.
(2) Prior period information for certain sectors has been adjusted to align with the current year's presentation, which better classifies the realigned sectors.
(3) Prior periods have not been restated to reflect the adoption of IFRS 9 in 2018. IFRS 9 has been applied prospectively.

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Table 16: Average Deposits

($ millions, except as noted)	2021 Average balance	2021 Average rate paid (%)	2020 Average balance	2020 Average rate paid (%)	2019 Average balance	2019 Average rate paid (%)
Deposits Booked in Canada						
Demand deposits – interest bearing	**48,372**	**0.58**	35,643	0.82	24,211	1.18
Demand deposits – non-interest bearing	**74,505**	**–**	56,936	–	47,849	–
Payable after notice	**122,916**	**0.20**	101,870	0.63	86,531	1.24
Payable on a fixed date	**173,030**	**1.31**	194,456	1.86	173,337	2.33
Total deposits booked in Canada	**418,823**	**0.67**	388,905	1.17	331,928	1.63
Deposits Booked in the United States and Other Countries						
Banks located in the United States and other countries (1)	**21,237**	**0.36**	20,927	1.07	23,563	2.41
Governments and institutions in the United States and other countries	**8,705**	**0.16**	8,852	0.91	12,253	1.97
Other demand deposits	**17,778**	**0.08**	16,321	0.27	14,484	0.86
Other deposits payable after notice or on a fixed date	**211,507**	**0.15**	194,096	0.69	164,540	1.38
Total deposits booked in the United States and other countries	**259,227**	**0.16**	240,196	0.70	214,840	1.49
Total average deposits	**678,050**	**0.47**	629,101	0.99	546,768	1.58

As at October 31, 2021, 2020 and 2019, deposits by foreign depositors in our Canadian bank offices amounted to $58,396 million, $52,433 million and $46,766 million, respectively.

(1) Net interest margin is calculated based on average earning assets, which represents the daily average balance of deposits at central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans, over a one-year period.

Glossary of Financial Terms

Adjusted Earnings and Measures

- *Adjusted Revenue* – calculated as revenue excluding the impact of certain non-recurring items, as set out in the Non-GAAP and Other Financial Measures section.
- *Adjusted Non-Interest Expense* – calculated as non-interest expense excluding the impact of certain non-recurring items, as set out in the Non-GAAP and Other Financial Measures section.
- *Adjusted Net Income* – calculated as net income excluding the impact of certain non-recurring items, as set out in the Non-GAAP and Other Financial Measures section.

Management considers both reported and adjusted results to be useful in assessing underlying ongoing business performance.

Adjusted Effective Tax Rate is calculated as adjusted provision for income taxes divided by adjusted income before provision for income taxes.

Allowance for Credit Losses represents an amount deemed appropriate by management to absorb credit-related losses on loans and acceptances and other credit instruments, in accordance with applicable accounting standards. *Allowance on Performing Loans* is maintained to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. *Allowance on Impaired Loans* is maintained to reduce the carrying value of individually identified impaired loans to the expected recoverable amount.

Assets under Administration and Assets under Management refers to assets administered or managed by a financial institution that are beneficially owned by clients and therefore not reported on the balance sheet of the administering or managing financial institution.

Asset-Backed Commercial Paper (ABCP) is a short-term investment. The commercial paper is backed by assets such as trade receivables, and is generally used for short-term financing needs.

Average annual total shareholder return (TSR) represents the average annual total return earned on an investment in BMO common shares made at the beginning of a fixed period. The return includes the change in share price and assumes dividends received were reinvested in additional common shares.

Average Earning Assets represents the daily average balance of deposits at central banks, deposits with other banks, securities borrowed or purchased under resale agreements, securities, and loans over a one-year period.

Bail-In Debt is senior unsecured debt subject to the Canadian Bail-In Regime. Bail-in debt includes senior unsecured debt issued directly by the bank on or after September 23, 2018, which has an original term greater than 400 days and is marketable, subject to certain exceptions. Some or all of this debt may be statutorily converted into common shares of the bank under the Bail-In Regime if the bank enters resolution.

Bankers' Acceptances (BAs) are bills of exchange or negotiable instruments drawn by a borrower for payment at maturity and accepted by a bank. BAs constitute a guarantee of payment by the bank and can be traded in the money market. The bank earns a "stamping fee" for providing this guarantee.

Basis Point is one one-hundredth of a percentage point.

Common Equity Tier 1 (CET1) Capital comprises common shareholders' equity less deductions for goodwill, intangible assets, pension assets, certain deferred tax assets and other items, which may include a portion of expected credit loss provisions.

Common Equity Tier 1 (CET1) Ratio is calculated as CET1 Capital, which comprises common shareholders' equity, net of deductions for goodwill, intangible assets, pension assets, certain deferred tax assets and other items, which may include a portion of expected credit loss provisions, divided by risk-weighted assets. The CET1 Ratio is calculated in accordance with OSFI's Capital Adequacy Requirements (CAR) Guideline.

Common Shareholders' Equity is the most permanent form of capital. For regulatory capital purposes, common shareholders' equity comprises common shareholders' equity, net of capital deductions.

Corporate Services consists of Corporate Units and Technology and Operations (T&O). Corporate Units provide enterprise-wide expertise, governance and support in a variety of areas, including strategic planning, risk management, finance, legal and regulatory compliance, human resources, communications, marketing, real estate and procurement. T&O develops, monitors, manages and maintains governance of information technology, including data and analytics, and also provides cyber security and operations services.

Credit and Counterparty Risk is the potential for credit loss due to the failure of an obligor (i.e., a borrower, endorser, guarantor or counterparty) to repay a loan or honour another predetermined financial obligation.

Derivatives are contracts with a value that is derived from movements in underlying interest or foreign exchange rates, equity or commodity prices or other indices. Derivatives allow for the transfer, modification or reduction of current or expected risks from changes in rates and prices.

Dividend Payout Ratio represents common share dividends as a percentage of net income available to common shareholders. It is computed by dividing dividends per share by basic earnings per share. Adjusted dividend payout ratio is calculated in the same manner, using adjusted net income.

Earnings per Share (EPS) is calculated by dividing net income, after deducting preferred share dividends and distributions on other equity instruments, by the average number of common shares outstanding. Adjusted EPS is calculated in the same manner, using adjusted net income. Diluted EPS, which is BMO's basis for measuring performance, adjusts for possible conversions of financial instruments into common shares if those conversions would reduce EPS, and is more fully explained in Note 23 of the consolidated financial statements.

Earnings Sensitivity is a measure of the impact of potential changes in interest rates on the projected 12-month pre-tax net income of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

Economic Capital is an expression of the enterprise's capital demand requirement relative to its view of the economic risks in its underlying business activities. It represents management's estimation of the likely magnitude of economic losses that could occur should severely adverse situations arise. Economic capital is calculated for various types of risk, including credit, market (trading and non-trading), operational non-financial, business and insurance, based on a one-year time horizon using a defined confidence level.

Economic Value Sensitivity is a measure of the impact of potential changes in interest rates on the market value of a portfolio of assets, liabilities and off-balance sheet positions in response to prescribed parallel interest rate movements, with interest rates floored at zero.

Efficiency Ratio (or Expense-to-Revenue Ratio) is a measure of productivity. It is calculated as non-interest expense divided by total revenue, expressed as a percentage. The adjusted efficiency ratio is calculated in the same manner, utilizing adjusted total revenue and non-interest expense.

Efficiency Ratio, net of CCPB, is calculated as non-interest expense divided by total revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB), expressed as a percentage. The adjusted efficiency ratio, net of CCPB, is calculated in the same manner, utilizing adjusted total revenue, net of CCPB, and non-interest expense.

Environmental and Social Risk (E&S risk) is the potential for loss or harm, directly or indirectly, resulting from environmental or social impacts or concerns, including climate change, related to BMO, our customers, suppliers or clients, and our impact on the environment and society.

Fair Value is the amount of consideration that would be agreed upon in an arm's- length transaction between knowledgeable, willing parties who are under no compulsion to act in an orderly market transaction.

Forwards and Futures are contractual agreements to either buy or sell a specified amount of a currency, commodity, interest-rate-sensitive financial instrument or security at a specified price and date in the future. Forwards are customized contracts transacted in the over-the-counter market. Futures are transacted in standardized amounts on regulated exchanges and are subject to daily cash margin requirements.

Gross impaired loans and acceptances(GIL) are calculated as the credit impaired balance of loans and customers' liability under acceptances, excluding purchased credit impaired loans.

Hedging is a risk management technique used to neutralize, manage or offset interest rate, foreign currency, equity, commodity or credit risk exposures arising from normal banking activities.

Impaired Loans are loans for which there is no longer reasonable assurance of the timely collection of principal or interest.

Incremental Risk Charge (IRC) complements the VaR and SVaR metrics and represents an estimate of the default and migration risks of non-securitization products held in the trading book with exposure to interest rate risk, measured over a one-year horizon at a 99.9% confidence level.

Insurance Risk is the potential for loss as a result of actual experience differing from that assumed when an insurance product was designed and priced, and comprises claims risk, policyholder behaviour risk and expense risk.

Insurance Revenue, net of CCPB, is insurance revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB).

Legal and Regulatory Risk is the potential for loss or harm resulting from a failure to comply with laws or satisfy contractual obligations or regulatory requirements. This includes the risk of failure to: comply with the law (in letter or in spirit) or maintain standards of care; implement legal or regulatory requirements; enforce or comply with contractual terms; assert non-contractual rights; effectively manage disputes; or act in a manner so as to maintain our reputation.

Leverage Exposures (LE) consist of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

Leverage Ratio reflects Tier 1 Capital divided by LE.

Liquidity and Funding Risk is the potential for loss if we are unable to meet our financial commitments in a timely manner at reasonable prices as they become due. Financial commitments include liabilities to depositors and suppliers, and lending, investment and pledging commitments.

Liquidity Coverage Ratio (LCR) is a Basel III regulatory metric calculated as the ratio of high-quality liquid assets to total net stressed cash outflows over a thirty-day period under a stress scenario prescribed by OSFI.

Market Risk is the potential for adverse changes in the value of our assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity and commodity prices and their implied volatilities, and credit spreads, and includes the risk of credit migration and default in our trading book.

Mark-to-Market represents the valuation of financial instruments at fair value (as defined above) as of the balance sheet date.

Model Risk is the potential for adverse consequences resulting from decisions that are based on incorrect or misused model results. These adverse consequences can include financial loss, poor business decision-making and damage to reputation.

Net Interest Income comprises earnings on assets, such as loans and securities, including interest and certain dividend income, less interest expense paid on liabilities, such as deposits. Net interest income excluding trading, is on a basis that excludes trading-related interest income and earning assets.

Net Interest Margin is the ratio of net interest income to average earning assets, expressed as a percentage or in basis points. Net interest margin is sometimes computed using average total assets. Net interest margin excluding trading, is computed in the same manner excluding trading related interest income and earning assets.

Net Non-Interest Revenue is non-interest revenue, net of insurance claims, commissions and changes in policy benefit liabilities (CCPB).

Notional Amount refers to the principal amount used to calculate interest and other payments under derivative contracts. The principal amount does not change hands under the terms of a derivative contract, except in the case of cross-currency swaps.

Off-Balance Sheet Financial Instruments consist of a variety of financial arrangements offered to clients, which include credit derivatives, written put options, backstop liquidity facilities, standby letters of credit, performance guarantees, credit enhancements, commitments to extend credit, securities lending, documentary and commercial letters of credit, and other indemnifications.

Office of the Superintendent of Financial Institutions Canada (OSFI) is the government agency responsible for regulating banks, insurance companies, trust companies, loan companies and pension plans in Canada.

Operating Leverage is the difference between revenue and expense growth rates. Adjusted operating leverage is the difference between adjusted revenue and adjusted expense growth rates.

Operating Leverage, net of CCPB, is the difference between revenue, net of CCPB (net revenue), and expense growth rates. Adjusted net operating leverage is the difference between adjusted revenue, net of CCPB, and adjusted expense growth rates.

Operational Non-Financial Risk (ONFR) encompasses a wide range of non-financial risks, including those related to business change, customer trust, reputation and data that can result in financial loss. These losses can stem from inadequate or failed internal processes or systems, human error or misconduct, and external events that may directly or indirectly impact our credit or investment portfolios. These risks include technology risk, fraud risk, business continuity risk and human resources risk, but exclude legal and regulatory risk, credit risk, market risk, liquidity risk and other types of financial risk.

Options are contractual agreements that convey to the purchaser the right but not the obligation to either buy or sell a specified amount of a currency, commodity, interest-rate-sensitive financial instrument or security at a fixed future date or at any time within a fixed future period.

Pre-Provision, Pre-Tax Earnings (PPPT) is calculated as income before income taxes and provision for credit losses. We use PPPT on both a reported and adjusted basis to assess our ability to generate sustained earnings growth excluding credit losses, which are impacted by the cyclical nature of a credit cycle.

Provision for Credit Losses (PCL) is a charge to income that represents an amount deemed adequate by management to fully provide for impairment in a portfolio of loans and acceptances and other credit instruments, given the composition of the portfolio, the probability of default, the economic environment and the allowance for credit losses already established. PCL can comprise both a provision for credit losses on impaired loans and a provision for credit losses on performing loans. For more information, refer to the Provision for Credit Losses and Allowance for Credit Losses sections and Note 4 of the consolidated financial statements.

Reputation Risk is the potential for loss or harm to the BMO brand. It can arise even if other risks are managed effectively.

Return on Equity or Return on Common Shareholders' Equity (ROE) is calculated as net income, less preferred dividends and distributions on other equity instruments, as a percentage of average common shareholders' equity. Common shareholders' equity comprises common share capital, contributed surplus, accumulated other comprehensive income (loss) and retained earnings. Adjusted ROE is calculated using adjusted net income rather than net income.

Return on Tangible Common Equity (ROTCE) is calculated as net income available to common shareholders, adjusted for the amortization of acquisition-related intangible assets, as a percentage of average tangible common equity. Adjusted ROTCE is calculated using adjusted net income rather than net income.

Risk-Weighted Assets (RWA) are defined as on-balance sheet and off-balance sheet exposures that are risk-weighted based on guidelines established by OSFI. The measure is used for capital management and regulatory reporting purposes.

Securities Borrowed or Purchased under Resale Agreements are low-cost, low-risk instruments, often supported by the pledge of cash collateral, which arise from transactions that involve the borrowing or purchasing of securities.

Securities Lent or Sold under Repurchase Agreements are low-cost, low-risk liabilities, often supported by cash collateral, which arise from transactions that involve the lending or selling of securities.

Securitization is the practice of selling pools of contractual debts, such as residential mortgages, auto loans and credit card debt obligations, to third parties or trusts, which then typically issue a series of asset-backed securities to investors to fund the purchase of the contractual debts.

Strategic Risk is the potential for loss or harm due to changes in the external business environment and failure to respond appropriately to these changes as a result of inaction, ineffective strategies or poor implementation of strategies. Strategic risk also includes business risk, which arises from the specific business activities of the enterprise, and the effects these could have on its earnings.

Stressed Value at Risk (SVaR) measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period, with model inputs calibrated to historical data from a period of significant financial stress. SVaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

Structured Entities (SEs) include entities for which voting or similar rights are not the dominant factor in determining control of the entity. BMO is required to consolidate a SE if it controls the entity by having power over the entity, exposure to variable returns as a result of its involvement and the ability to exercise power to affect the amount of those returns.

Structural (Non-Trading) Market Risk comprises interest rate risk arising from banking activities (loans and deposits) and foreign exchange risk arising from foreign currency operations and exposures.

Swaps are contractual agreements between two parties to exchange a series of cash flows. The various swap agreements that BMO enters into are as follows:

- *Commodity swaps* – counterparties generally exchange fixed-rate and floating-rate payments based on a notional value of a single commodity.
- *Credit default swaps* – one counterparty pays the other a fee in exchange for an agreement by the other counterparty to make a payment if a credit event occurs, such as bankruptcy or failure to pay.
- *Cross-currency interest rate swaps* – fixed-rate and floating-rate interest payments and principal amounts are exchanged in different currencies.
- *Cross-currency swaps* – fixed-rate interest payments and principal amounts are exchanged in different currencies.
- *Equity swaps* – counterparties exchange the return on an equity security or a group of equity securities for a return based on a fixed or floating interest rate or the return on another equity security or group of equity securities.
- *Interest rate swaps* – counterparties generally exchange fixed-rate and floating-rate interest payments based on a notional value in a single currency.
- *Total return swaps* – one counterparty agrees to pay or receive from the other cash amounts based on changes in the value of a reference asset or group of assets, including any returns such as interest earned on these assets, in exchange for amounts that are based on prevailing market funding rates.

Tangible Common Equity is calculated as common shareholders' equity, less goodwill and acquisition-related intangible assets, net of related deferred tax liabilities.

Taxable Equivalent Basis (teb): Revenues of operating groups are presented in the MD&A on a taxable equivalent basis (teb). Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent pre-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. The effective tax rate is also analyzed on a teb basis for consistency of approach, with the offset to operating segment adjustments recorded in Corporate Services.

Tier 1 Capital comprises CET1 Capital and **Additional Tier 1 (AT1) Capital**. AT1 Capital consists of preferred shares and other AT1 Capital instruments, less regulatory deductions.

Tier 1 Capital Ratio reflects Tier 1 Capital divided by risk-weighted assets.

Tier 2 Capital comprises subordinated debentures and may include certain credit loss provisions, less regulatory deductions.

Total Capital includes Tier 1 and Tier 2 Capital.

Total Capital Ratio reflects Total Capital divided by risk-weighted assets.

Total Loss Absorbing Capacity (TLAC) comprises Total Capital and senior unsecured debt subject to the Canadian Bail-In Regime, less regulatory deductions. The largest Canadian banks are required to meet the minimum TLAC Ratio and TLAC Leverage Ratio effective November 1, 2021, as calculated under OSFI's TLAC Guideline.

Total Loss Absorbing Capacity (TLAC) Ratio reflects TLAC divided by risk-weighted assets.

Total Loss Absorbing Capacity (TLAC) Leverage Ratio reflects TLAC divided by leverage exposures.

Total Shareholder Return: The three-year and five-year average annual total shareholder return (TSR) represents the average annual total return earned on an investment in BMO common shares made at the beginning of a three-year and five-year period, respectively. The return includes the change in share price and assumes dividends received were reinvested in additional common shares. The one-year TSR also assumes that dividends were reinvested in shares.

Trading and Underwriting Market Risk is associated with buying and selling financial products in the course of meeting customer requirements, including market-making and related financing activities, and assisting clients to raise funds by way of securities issuance.

Trading-Related Revenue includes net interest income and non-interest revenue earned from on-balance sheet and off-balance sheet positions undertaken for trading purposes. The management of these positions typically includes marking them to market on a daily basis. Trading-related revenue also includes income (expense) and gains (losses) from both on-balance sheet instruments and interest rate, foreign exchange (including spot positions), equity, commodity and credit contracts.

Value-at-Risk (VaR) measures the maximum loss likely to be experienced in the trading and underwriting portfolios, measured at a 99% confidence level over a one-day holding period. VaR is calculated for specific classes of risk in BMO's trading and underwriting activities related to interest rates, foreign exchange rates, credit spreads, equity and commodity prices and their implied volatilities.

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Statement of Management's Responsibility for Financial Information

Management of Bank of Montreal (the bank) is responsible for the preparation and presentation of the annual consolidated financial statements, Management's Discussion and Analysis (MD&A) and all other information in the Annual Report.

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board and meet the applicable requirements of the Canadian Securities Administrators (CSA) and the Securities and Exchange Commission (SEC) in the United States. The financial statements also comply with the provisions of the *Bank Act (Canada)* and related regulations, including interpretations of IFRS by our regulator, the Office of the Superintendent of Financial Institutions Canada. The MD&A has been prepared in accordance with the requirements of securities regulators, including National Instrument 51-102 *Continuous Disclosure Obligations* of the CSA.

The consolidated financial statements and information in the MD&A necessarily include amounts based on informed judgments and estimates of the expected effects of current events and transactions with appropriate consideration to materiality. In addition, in preparing the financial information we must interpret the requirements described above, make determinations as to the relevancy of information to be included, and make estimates and assumptions that affect reported information. The MD&A also includes information regarding the impact of current transactions and events, sources of liquidity and capital resources, operating trends, risks and uncertainties. Actual results in the future may differ materially from our present assessment of this information because events and circumstances in the future may not occur as expected.

The financial information presented in the bank's Annual Report is consistent with that in the consolidated financial statements.

In meeting our responsibility for the reliability and timeliness of financial information, we maintain and rely on a comprehensive system of internal controls, including organizational and procedural controls, disclosure controls and procedures, and internal control over financial reporting. Our system of internal controls includes written communication of our policies and procedures governing corporate conduct and risk management; comprehensive business planning; effective segregation of duties; delegation of authority and personal accountability; escalation of relevant information for decisions regarding public disclosure; careful selection and training of personnel; and accounting policies that we regularly update. Our internal controls are designed to provide reasonable assurance that transactions are authorized, assets are safeguarded and proper records are maintained and that we are in compliance with all regulatory requirements. The system of internal controls is further supported by a compliance function, which is designed to ensure that we and our employees comply with securities legislation and conflict of interest rules, and by an internal audit staff, which conducts periodic audits of all aspects of our operations.

As of October 31, 2021, we, as the bank's Chief Executive Officer and Chief Financial Officer, have determined that the bank's internal control over financial reporting is effective. We have certified Bank of Montreal's annual filings with the CSA and with the SEC pursuant to National Instrument 52-109, *Certification of Disclosure in Issuers' Annual and Interim Filings* and the *Securities Exchange Act of 1934*.

In order to provide their audit opinions on our consolidated financial statements and on the bank's internal control over financial reporting, the Shareholders' Auditors audit our system of internal controls over financial reporting and conduct work to the extent that they consider appropriate. Their audit opinion on the bank's internal control over financial reporting as of October 31, 2021 is set forth on page 145.

The Board of Directors, based on recommendations from its Audit and Conduct Review Committee, reviews and approves the financial information contained in the Annual Report, including the MD&A. The Board of Directors and its relevant committees oversee management's responsibilities for the preparation and presentation of financial information, maintenance of appropriate internal controls, compliance with legal and regulatory requirements, management and control of major risk areas, and assessment of significant and related party transactions.

The Audit and Conduct Review Committee, which is comprised entirely of independent directors, is also responsible for selecting the Shareholders' Auditors and reviewing the qualifications, independence and performance of both the Shareholders' Auditors and internal audit. The Shareholders' Auditors and the bank's Chief Auditor have full and free access to the Board of Directors, its Audit and Conduct Review Committee and other relevant committees to discuss audit, financial reporting and related matters.

The Office of the Superintendent of Financial Institutions Canada conducts examinations and inquiries into the affairs of the bank as are deemed necessary to ensure that the provisions of the *Bank Act,* with respect to the safety of the depositors, are being duly observed and that the bank is in sound financial condition.



Darryl White
Chief Executive Officer



Tayfun Tuzun
Chief Financial Officer

Toronto, Canada
December 3, 2021

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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Bank of Montreal

Opinion on the Consolidated Financial Statements
We have audited the accompanying consolidated balance sheets of Bank of Montreal (the Bank) as at October 31, 2021 and 2020, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended October 31, 2021, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Bank as at October 31, 2021 and 2020, and its financial performance and its cash flows for each of the years in the three-year period ended October 31, 2021, in conformity with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Bank's internal control over financial reporting as of October 31, 2021, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated December 3, 2021 expressed an unqualified opinion on the effectiveness of the Bank's internal control over financial reporting.

Basis for Opinion
These consolidated financial statements are the responsibility of the Bank's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Bank in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters
The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the Audit and Conduct Review Committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Assessment of the Allowances for Credit Losses for Loans
As discussed in Notes 1 and 4 to the consolidated financial statements, the Bank's allowance for credit losses (ACL) as at October 31, 2021 was $2,958 million. The Bank's ACL consists of allowances for impaired loans and allowances for performing loans (APL), both calculated under the IFRS 9 Financial Instruments expected credit losses framework. APL is calculated for each exposure in the loan portfolio as a function of the key modeled inputs being probability of default (PD), exposure at default (EAD) and loss given default (LGD). In establishing APL, the Bank's methodology attaches probability weightings to three economic scenarios, which represent the Bank's judgment about a range of forecast economic variables – a base case scenario being the Bank's view of the most probable outcome, as well as benign and adverse scenarios. Where there has been a significant increase in credit risk, lifetime APL is recorded; otherwise 12 months of APL is generally recorded. The Bank's methodology for determining significant increase in credit risk is based on the change in PD between the origination date and reporting date and is assessed using probability weighted scenarios. The Bank uses experienced credit judgment (ECJ) to reflect factors not captured in the results produced by the APL models.

We identified the assessment of the ACL for loans as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the Bank's key modeled inputs, methodology and judgments and their resulting impact on the APL, as described above, including impacts of the COVID-19 pandemic. Assessing the APL also required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's APL process, with the involvement of credit risk, economics, and information technology professionals with specialized skills, industry knowledge and relevant experience. This included internal controls related to (1) monitoring and periodic validation of the models used to derive the key modeled inputs, (2) monitoring of the methodology for identifying significant increase in credit risk, and (3) review of the economic variables, probability weighting of scenarios and ECJ. We also tested the controls over the Bank's APL process related to loan reviews for determination of loan risk grades for wholesale loans. We involved credit risk and economics professionals with specialized skills, industry knowledge and relevant experience, who assisted in evaluating the (1) key modeled inputs and APL methodology including the determination of significant increases in credit risk by evaluating the methodology for compliance with IFRS 9 and re-calculating model monitoring tests in respect of the key modeled inputs and thresholds used for significant increases in credit risk, (2) economic variables and probability weighting of scenarios used in the models by assessing the variables and scenarios against external economic data, and (3) ECJ overlays to the APL used by the Bank by applying our knowledge of the industry and credit judgment to assess management's judgments. For a selection of wholesale loans, we developed an independent estimate of the loan risk grades using the Bank's borrower risk rating scale, and compared that to the Bank's assigned loan risk grade.

Assessment of the Measurement of the Fair Value of Certain Securities
As discussed in Notes 1, 3 and 17 to the consolidated financial statements, the Bank's securities portfolio included $181,744 million of securities as at October 31, 2021 that are measured at fair value. Included in these amounts are certain securities for which the Bank determines fair value using models and third-party net asset valuations (NAVs) that use significant unobservable market information. Unobservable inputs require the use of significant judgment. Certain of the significant unobservable inputs used in the valuation of such securities are NAVs and prepayment rates.

We identified the assessment of the measurement of the fair value of certain securities as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the significant unobservable inputs. Significant auditor attention and complex auditor judgment was required to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's process to determine the fair value of certain securities with the involvement of valuation and information technology professionals with specialized skills, industry knowledge and relevant experience. This included controls related to (1) the assessment of rate sources used in independent price verification, and (2) segregation of duties and access controls. We also evaluated the design and tested the operating effectiveness of the controls related to the 1) review of third-party NAVs, and 2) independent price verification. We tested, with involvement of valuation professionals with specialized skills, industry knowledge and relevant experience, the fair value of a selection of securities, for which prepayment rates are used in valuation, by developing an independent estimate of fair value and comparing it to the fair value determined by the Bank. For a selection of securities, we compared the NAVs to external information.

Assessment of Income Tax Uncertainties
As discussed in Notes 1 and 22 to the consolidated financial statements, in determining the provision for income taxes, the Bank interprets tax legislation, case law and administrative positions, and, based on its judgment, records a provision for an estimate of the amount required to settle tax obligations.

We identified the assessment of income tax uncertainties as a critical audit matter. Significant auditor judgment was required because there was a high degree of subjectivity in assessing the need to record a provision, based on interpretation of tax legislation, case law and administrative positions, for these uncertainties and estimating the amount of such provision, if necessary. This required significant auditor attention and complex auditor judgment to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Bank's process for evaluating income tax uncertainties with the involvement of tax professionals with specialized skills, industry knowledge and relevant experience. This included controls related to the 1) identification of tax uncertainties based on interpretation of tax legislation, case law and administrative positions, and 2) determination of the best estimate of the provision required, if any, to settle these uncertainties. We involved tax professionals with specialized skills, industry knowledge and relevant experience, who assisted in 1) evaluating, based on their knowledge and experience, the Bank's interpretations of tax legislation, case law and administrative positions and the assessment of certain tax uncertainties and expected outcomes, including, if applicable, the measurement thereof, 2) reading advice obtained by the Bank from external specialists and evaluating its impact on the Bank's provision, if necessary, and 3) reading correspondence with taxation authorities and evaluating its impact on the Bank's provision, if necessary.

Assessment of Insurance-Related Liabilities
As discussed in Notes 1 and 14 to the consolidated financial statements, the Bank's insurance-related liabilities as at October 31, 2021 were $12,845 million. The Bank determines the liabilities for life insurance contracts by applying the Canadian Asset Liability Method for Insurance Contracts, which incorporates best-estimate assumptions. Certain significant assumptions include mortality, policy lapses and future investment yields.

We identified the assessment of insurance-related liabilities as a critical audit matter. Significant auditor judgment was required because there was a high degree of measurement uncertainty in the significant assumptions. Significant and complex auditor judgment was required to evaluate the results of audit procedures. Further, specialized skills and knowledge, including experience in the industry, were required to apply audit procedures and evaluate the results of those audit procedures.

The following are the primary procedures we performed to address this critical audit matter. With the assistance of actuarial professionals with specialized skills, industry knowledge and relevant experience, we evaluated the design and tested the operating effectiveness of internal controls over assessment of the significant assumptions. We involved these actuarial professionals also in testing the significant assumptions by examining the Bank's internal and external experience studies for policy lapses and mortality, and examining management's calculations and comparing certain inputs into the future investment yields to externally available data.



Chartered Professional Accountants, Licensed Public Accountants
We have served as the Bank's auditor since 2004 and as joint auditor for the prior 14 years.

Toronto, Canada
December 3, 2021

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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Bank of Montreal

Opinion on Internal Control over Financial Reporting

We have audited Bank of Montreal's internal control over financial reporting as of October 31, 2021, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, Bank of Montreal (the Bank) maintained, in all material respects, effective internal control over financial reporting as of October 31, 2021, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Bank as at October 31, 2021 and 2020, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended October 31, 2021, and the related notes (collectively, the consolidated financial statements) and our report dated December 3, 2021 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Bank's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Disclosure Controls and Procedures and Internal Control over Financial Reporting, on page 121 of Management's Discussion and Analysis. Our responsibility is to express an opinion on the Bank's internal control over financial reporting based on our audit.

We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Bank in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.



Chartered Professional Accountants, Licensed Public Accountants
Toronto, Canada
December 3, 2021

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Income

For the Year Ended October 31 (Canadian $ in millions, except as noted)	2021	2020	2019
Interest, Dividend and Fee Income			
Loans	**$ 15,727**	$ 17,945	$ 19,824
Securities (Note 3) (1)	**3,963**	4,980	5,541
Deposits with banks	**197**	390	787
	19,887	23,315	26,152
Interest Expense			
Deposits	**3,220**	6,239	8,616
Subordinated debt	**195**	265	279
Other liabilities (Note 14)	**2,162**	2,840	4,369
	5,577	9,344	13,264
Net Interest Income	**14,310**	13,971	12,888
Non-Interest Revenue			
Securities commissions and fees	**1,107**	1,036	1,023
Deposit and payment service charges	**1,243**	1,221	1,204
Trading revenues (Note 17)	**296**	15	298
Lending fees	**1,391**	1,295	1,192
Card fees	**442**	358	437
Investment management and custodial fees	**1,982**	1,807	1,747
Mutual fund revenues	**1,595**	1,417	1,419
Underwriting and advisory fees	**1,421**	1,070	975
Securities gains, other than trading (Note 3)	**591**	124	249
Foreign exchange gains, other than trading	**167**	127	166
Insurance revenue	**1,941**	2,178	3,183
Investments in associates and joint ventures	**248**	161	151
Other	**452**	406	551
	12,876	11,215	12,595
Total Revenue	**27,186**	25,186	25,483
Provision for Credit Losses (Note 4)	**20**	2,953	872
Insurance Claims, Commissions and Changes in Policy Benefit Liabilities (Note 14)	**1,399**	1,708	2,709
Non-Interest Expense			
Employee compensation (Notes 20 and 21)	**8,322**	7,944	8,423
Premises and equipment (Note 9)	**3,396**	3,202	2,988
Amortization of intangible assets (Note 11)	**634**	620	554
Travel and business development	**397**	384	545
Communications	**264**	304	296
Professional fees	**607**	555	568
Other (Note 10)	**1,889**	1,168	1,256
	15,509	14,177	14,630
Income Before Provision for Income Taxes	**10,258**	6,348	7,272
Provision for income taxes (Note 22)	**2,504**	1,251	1,514
Net Income	**$ 7,754**	$ 5,097	$ 5,758
Earnings Per Common Share (Canadian $) (Note 23)			
Basic	**$ 11.60**	$ 7.56	$ 8.68
Diluted	**11.58**	7.55	8.66
Dividends per common share	**4.24**	4.24	4.06

(1) Includes interest income on securities measured at fair value through other comprehensive income and amortized cost, calculated using the effective interest rate method, of $89 million for the year ended October 31, 2021 ($1,532 million in 2020 and $1,853 million in 2019).

The accompanying notes are an integral part of these consolidated financial statements.

Certain comparative figures have been reclassified to conform with the current year's presentation.



Darryl White
Chief Executive Officer



Jan Babiak
Chair, Audit and Conduct Review Committee

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Consolidated Statement of Comprehensive Income

For the Year Ended October 31 (Canadian $ in millions)	2021	2020	2019
Net Income	**$ 7,754**	$ 5,097	$ 5,758
Other Comprehensive Income (Loss), net of taxes (Note 22)			
Items that may subsequently be reclassified to net income			
Net change in unrealized gains (losses) on fair value through OCI debt securities			
Unrealized gains (losses) on fair value through OCI debt securities arising during the year	(161)	410	412
Reclassification to earnings of (gains) in the year	**(43)**	(81)	(72)
	(204)	329	340
Net change in unrealized gains (losses) on cash flow hedges			
Gains (losses) on derivatives designated as cash flow hedges arising during the year	**(1,380)**	1,513	1,444
Reclassification to earnings of (gains) losses on derivatives designated as cash flow hedges	**(414)**	(47)	143
	(1,794)	1,466	1,587
Net gains (losses) on translation of net foreign operations			
Unrealized gains (losses) on translation of net foreign operations	**(2,207)**	373	(11)
Unrealized gains (losses) on hedges of net foreign operations	**496**	(96)	(13)
	(1,711)	277	(24)
Items that will not be reclassified to net income			
Unrealized gains on fair value through OCI equity securities arising during the year	**20**	–	1
Gains (losses) on remeasurement of pension and other employee future benefit plans	**923**	(255)	(552)
Gains (losses) on remeasurement of own credit risk on financial liabilities designated at fair value	**(196)**	(28)	75
	747	(283)	(476)
Other Comprehensive Income (Loss), net of taxes (Note 22)	**(2,962)**	1,789	1,427
Total Comprehensive Income	**$ 4,792**	$ 6,886	$ 7,185

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Balance Sheet

As at October 31 (Canadian $ in millions)		2021		2020
Assets				
Cash and Cash Equivalents (Note 2)	**$**	**93,261**	$	57,408
Interest Bearing Deposits with Banks (Note 2)		**8,303**		9,035
Securities (Note 3)				
Trading		**104,411**		97,834
Fair value through profit or loss		**14,210**		13,568
Fair value through other comprehensive income		**63,123**		73,407
Debt securities at amortized cost		**49,970**		48,466
Investments in associates and joint ventures		**1,135**		985
		232,849		234,260
Securities Borrowed or Purchased Under Resale Agreements (Note 4)		**107,382**		111,878
Loans (Notes 4 and 6)				
Residential mortgages		**135,750**		127,024
Consumer instalment and other personal		**77,164**		70,148
Credit cards		**8,103**		7,889
Business and government		**239,809**		245,662
		460,826		450,723
Allowance for credit losses (Note 4)		**(2,564)**		(3,303)
		458,262		447,420
Other Assets				
Derivative instruments (Note 8)		**36,713**		36,815
Customers' liability under acceptances (Note 12)		**14,021**		13,493
Premises and equipment (Notes 1 and 9)		**4,454**		4,183
Goodwill (Note 11)		**5,378**		6,535
Intangible assets (Note 11)		**2,266**		2,442
Current tax assets		**1,588**		1,260
Deferred tax assets (Note 22)		**1,287**		1,473
Other (Note 12)		**22,411**		23,059
		88,118		89,260
Total Assets	**$**	**988,175**	$	949,261
Liabilities and Equity				
Deposits (Note 13)	**$**	**685,631**	$	659,034
Other Liabilities				
Derivative instruments (Note 8)		**30,815**		30,375
Acceptances (Note 14)		**14,021**		13,493
Securities sold but not yet purchased (Note 14)		**32,073**		29,376
Securities lent or sold under repurchase agreements (Note 6)		**97,556**		88,658
Securitization and structured entities' liabilities (Notes 6 and 7)		**25,486**		26,889
Current tax liabilities		**221**		126
Deferred tax liabilities (Note 22)		**192**		108
Other (Notes 1 and 14)		**37,764**		36,193
		238,128		225,218
Subordinated Debt (Note 15)		**6,893**		8,416
Total Liabilities		**930,652**		892,668
Equity				
Preferred shares and other equity instruments (Note 16)		5,558		6,598
Common shares (Note 16)		**13,599**		13,430
Contributed surplus		**313**		302
Retained earnings (Note 1)		**35,497**		30,745
Accumulated other comprehensive income		**2,556**		5,518
Total Equity		**57,523**		56,593
Total Liabilities and Equity	**$**	**988,175**	$	949,261

The accompanying notes are an integral part of these consolidated financial statements.
Certain comparative figures have been reclassified to conform with the current year's presentation.

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Consolidated Statement of Changes in Equity

For the Year Ended October 31 (Canadian $ in millions)	2021	2020	2019
Preferred Shares and Other Equity Instruments (Note 16)			
Balance at beginning of year	$ 6,598	$ 5,348	$ 4,340
Issued during the year	–	1,250	1,008
Redeemed during the year	(1,040)	–	–
Balance at End of Year	5,558	6,598	5,348
Common Shares (Note 16)			
Balance at beginning of year	13,430	12,971	12,929
Issued under the Shareholder Dividend Reinvestment and Share Purchase Plan	–	471	–
Issued under the Stock Option Plan	122	40	62
Repurchased for cancellation and/or treasury shares sold/purchased	47	(52)	(20)
Balance at End of Year	13,599	13,430	12,971
Contributed Surplus			
Balance at beginning of year	302	303	300
Stock option expense, net of options exercised (Note 20)	10	(1)	–
Other	1	–	3
Balance at End of Year	313	302	303
Retained Earnings			
Balance at beginning of year	30,745	28,725	25,850
Impact from adopting IFRS 16 (Note 1)	–	(59)	na
Net income	7,754	5,097	5,758
Dividends on preferred shares and distributions payable on other equity instruments (Note 16)	(244)	(247)	(211)
Dividends on common shares (Note 16)	(2,746)	(2,723)	(2,594)
Equity issue expense and premium paid on redemption of preferred shares	(6)	(3)	(8)
Common shares repurchased for cancellation (Note 16)	–	–	(70)
Net discount on sale of treasury shares	(6)	(45)	–
Balance at End of Year	35,497	30,745	28,725
Accumulated Other Comprehensive Income on Fair Value through OCI Securities, net of taxes (Note 22)			
Balance at beginning of year	355	26	(315)
Unrealized gains (losses) on fair value through OCI debt securities arising during the year	(161)	410	412
Unrealized gains on fair value through OCI equity securities arising during the year	20	–	1
Reclassification to earnings of (gains) during the year	(43)	(81)	(72)
Balance at End of Year	171	355	26
Accumulated Other Comprehensive Income on Cash Flow Hedges, net of taxes (Note 22)			
Balance at beginning of year	1,979	513	(1,074)
Gains (losses) on derivatives designated as cash flow hedges arising during the year (Note 8)	(1,380)	1,513	1,444
Reclassification to earnings of (gains) losses on derivatives designated as cash flow hedges in the year	(414)	(47)	143
Balance at End of Year	185	1,979	513
Accumulated Other Comprehensive Income on Translation of Net Foreign Operations, net of taxes (Note 22)			
Balance at beginning of year	3,980	3,703	3,727
Unrealized gains (losses) on translation of net foreign operations	(2,207)	373	(11)
Unrealized gains (losses) on hedges of net foreign operations	496	(96)	(13)
Balance at End of Year	2,269	3,980	3,703
Accumulated Other Comprehensive Income (Loss) on Pension and Other Employee Future Benefit Plans, net of taxes (Note 22)			
Balance at beginning of year	(638)	(383)	169
Gains (losses) on remeasurement of pension and other employee future benefit plans (Note 21)	923	(255)	(552)
Balance at End of Year	285	(638)	(383)
Accumulated Other Comprehensive (Loss) on Own Credit Risk on Financial Liabilities Designated at Fair Value, net of taxes (Note 22)			
Balance at beginning of year	(158)	(130)	(205)
Gains (losses) on remeasurement of own credit risk on financial liabilities designated at fair value	(196)	(28)	75
Balance at End of Year	(354)	(158)	(130)
Total Accumulated Other Comprehensive Income	2,556	5,518	3,729
Total Equity	$ 57,523	$ 56,593	$ 51,076

na – not applicable due to IFRS 16 adoption on November 1, 2019.

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Cash Flows

For the Year Ended October 31 (Canadian $ in millions)	2021	2020	2019
Cash Flows from Operating Activities			
Net Income	**$ 7,754**	$ 5,097	$ 5,758
Adjustments to determine net cash flows provided by (used in) operating activities			
Provision on securities, other than trading (Note 3)	**1**	2	1
Net (gain) on securities, other than trading (Note 3)	**(592)**	(126)	(250)
Net (increase) decrease in trading securities	**(10,447)**	(10,276)	13,816
Provision for credit losses (Note 4)	**20**	2,953	872
Change in derivative instruments – (Increase) decrease in derivative asset	**542**	(12,229)	6,902
– Increase (decrease) in derivative liability	**529**	5,614	(3,774)
Amortization of premises and equipment (Note 9)	**791**	801	435
Amortization of other assets	140	197	216
Amortization of intangible assets (Note 11)	**634**	620	554
Write-down of goodwill (Notes 10 and 11)	**779**	–	–
Net decrease in deferred tax asset (Note 22)	**127**	111	483
Net increase (decrease) in deferred tax liability (Note 22)	**85**	26	(15)
Net (increase) decrease in current tax asset	**(539)**	(55)	354
Net increase in current tax liability	**143**	62	6
Change in accrued interest – (Increase) decrease in interest receivable	**75**	178	(299)
– Increase (decrease) in interest payable	**(366)**	(352)	313
Changes in other items and accruals, net	**723**	(4,501)	(1,255)
Net increase in deposits	**52,244**	88,341	48,009
Net (increase) in loans	**(23,748)**	(21,941)	(43,381)
Net increase (decrease) in securities sold but not yet purchased	**3,545**	2,972	(2,524)
Net increase in securities lent or sold under repurchase agreements	**12,866**	824	20,358
Net (increase) in securities borrowed or purchased under resale agreements	**(289)**	(7,104)	(19,396)
Net increase (decrease) in securitization and structured entities' liabilities	**(968)**	(378)	2,120
Net Cash Provided by Operating Activities	**44,049**	50,836	29,303
Cash Flows from Financing Activities			
Net increase (decrease) in liabilities of subsidiaries	**–**	(8,113)	(1,227)
Proceeds from issuance of covered bonds (Note 13)	**4,396**	4,425	4,168
Redemption/buyback of covered bonds (Note 13)	**(4,074)**	(6,231)	(3,765)
Proceeds from issuance of subordinated debt (Note 15)	**1,000**	1,250	1,000
Repayment of subordinated debt (Note 15)	**(2,250)**	–	(1,000)
Proceeds from issuance of preferred shares and other equity instruments net of issuance cost (Note 16)	**–**	1,247	1,000
Redemption of preferred shares (Note 16)	**(1,046)**	–	–
Net proceeds from issuance (repurchase) of common shares and sale (purchase) of treasury shares	**159**	(76)	54
Common shares repurchased for cancellation (Note 16)	**–**	–	(90)
Cash dividends and distributions paid	**(2,980)**	(2,475)	(2,752)
Repayment of lease liabilities (1)	**(327)**	(331)	na
Net Cash (Used in) Financing Activities	**(5,122)**	(10,304)	(2,612)
Cash Flows from Investing Activities			
Net (increase) decrease in interest bearing deposits with banks	**144**	(979)	329
Purchases of securities, other than trading	**(49,620)**	(86,659)	(63,496)
Maturities of securities, other than trading	**27,377**	19,982	13,154
Proceeds from sales of securities, other than trading	**22,720**	36,900	31,561
Premises and equipment – net (purchases) (Note 9)	**(484)**	(399)	(478)
Purchased and developed software – net (purchases) (Note 11)	**(499)**	(633)	(650)
Acquisitions (Note 10)	**–**	(186)	–
Net proceeds from divestitures (Note 10)	63	–	–
Net Cash (Used in) Investing Activities	**(299)**	(31,974)	(19,580)
Effect of Exchange Rate Changes on Cash and Cash Equivalents	**(2,775)**	47	(450)
Net increase in Cash and Cash Equivalents	**35,853**	8,605	6,661
Cash and Cash Equivalents at Beginning of Year	**57,408**	48,803	42,142
Cash and Cash Equivalents at End of Year (Note 2)	**$ 93,261**	$ 57,408	$ 48,803
Supplemental Disclosure of Cash Flow Information			
Net cash provided by operating activities includes:			
Interest paid in the year (2)	**$ 5,864**	$ 9,679	$ 12,956
Income taxes paid in the year	**$ 2,167**	$ 1,537	$ 1,209
Interest received in the year	**$ 18,323**	$ 21,576	$ 23,966
Dividends received in the year	**$ 1,732**	$ 1,856	$ 1,740

(1) Prior to adoption of IFRS 16, repayments of lease liabilities were included in Net Cash Provided by Operating Activities.
(2) Includes dividends paid on securities sold but not yet purchased.
na – not applicable

The accompanying notes are an integral part of these consolidated financial statements.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Note 1: Basis of Presentation

Bank of Montreal (the bank or BMO) is a chartered bank under the *Bank Act (Canada)* and is a public company incorporated in Canada. We are a highly diversified financial services company, providing a broad range of personal and commercial banking, wealth management and investment banking products and services. The bank's head office is at 129 rue Saint-Jacques, Montreal, Quebec. Our executive offices are at 100 King Street West, 1 First Canadian Place, Toronto, Ontario. Our common shares are listed on the Toronto Stock Exchange (TSX) and the New York Stock Exchange.

We have prepared these consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). We also comply with interpretations of IFRS by our regulator, the Office of the Superintendent of Financial Institutions of Canada (OSFI).

Our consolidated financial statements have been prepared on a historic cost basis, except for the revaluation of the following items: assets and liabilities held for trading; financial assets and liabilities measured or designated at fair value through profit or loss (FVTPL); financial assets measured or designated at fair value through other comprehensive income (FVOCI); financial assets and financial liabilities designated as hedged items in qualifying fair value hedge relationships; cash-settled share-based payment liabilities; defined benefit pension and other employee future benefit liabilities; and insurance-related liabilities.

These consolidated financial statements were authorized for issue by the Board of Directors on December 3, 2021.

Basis of Consolidation

These consolidated financial statements are inclusive of the financial statements of our subsidiaries as at October 31, 2021. We conduct business through a variety of corporate structures, including subsidiaries, structured entities (SEs), associates and joint ventures. Subsidiaries are those entities where we exercise control through our ownership of the majority of the voting shares. We also hold interests in SEs, which we consolidate when we control the SEs. These are more fully described in Note 7. All of the assets, liabilities, revenues and expenses of our subsidiaries and consolidated SEs are included in our consolidated financial statements. All intercompany transactions and balances are eliminated on consolidation.

We hold investments in associates where we exert significant influence over operating and financing decisions (generally companies in which we own between 20% and 50% of the voting shares). These are accounted for using the equity method. The equity method is also applied to our investments in joint ventures, which are entities where we exercise joint control through an agreement with other shareholders. Under the equity method of accounting, investments are initially recorded at cost, and the carrying amount is increased or decreased to recognize our share of investee net income or loss, including other comprehensive income or loss. Additional information regarding accounting for investments in associates and joint ventures is included in Note 3.

Significant Accounting Policies

To facilitate a better understanding of our consolidated financial statements, we have disclosed our significant accounting policies throughout the following notes with the related financial disclosures by major caption:

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Translation of Foreign Currencies

We conduct business in a variety of foreign currencies and present our consolidated financial statements in Canadian dollars, which is our functional currency. Monetary assets and liabilities, as well as non-monetary assets and liabilities measured at fair value that are denominated in foreign currencies, are translated into Canadian dollars at the exchange rate in effect at the balance sheet date. Non-monetary assets and liabilities not measured at fair value are translated into Canadian dollars at historical rates. Revenues and expenses denominated in foreign currencies are translated using the average exchange rate for the year.

Unrealized gains and losses arising from translating our net investment in foreign operations into Canadian dollars, net of related hedging activities and applicable income taxes, are included in our Consolidated Statement of Comprehensive Income within net gains (losses) on translation of net foreign operations. When we dispose of a foreign operation such that control, significant influence or joint control is lost, the cumulative amount of the translation gain (loss) and any applicable hedging activities and related income taxes is reclassified to our Consolidated Statement of Income as part of the gain or loss on disposition.

Foreign currency translation gains and losses on equity securities measured at FVOCI that are denominated in foreign currencies are included in accumulated other comprehensive income on FVOCI equity securities, net of taxes, in our Consolidated Statement of Changes in Equity. All other foreign currency translation gains and losses are included in foreign exchange gains, other than trading, in our Consolidated Statement of Income as they arise.

From time to time, we enter into foreign exchange hedge contracts to reduce our exposure to changes in the value of foreign currencies. Realized and unrealized gains and losses that arise on the mark-to-market of foreign exchange contracts related to economic hedges are included in non-interest revenue in our Consolidated Statement of Income. Changes in the fair value of derivative contracts that qualify as accounting hedges are recorded in our Consolidated Statement of Comprehensive Income within net change in unrealized gains (losses) on derivatives designated as cash flow hedges, with the spot/forward differential (the difference between the foreign currency exchange rate at the inception of the contract and the rate at the end of the contract) recorded in interest income (expense) over the term of the hedge.

Revenue

Dividend Income

Dividend income is recognized when the right to receive payment is established. This is the ex-dividend date for listed equity securities.

Fee Income

Securities commissions and fees are earned in BMO Wealth Management and BMO Capital Markets on brokerage transactions executed for customers, generally as a fixed fee per share traded, and the commissions and related clearing expense are recognized on trade date. There are also fees based on a percentage of the customer's portfolio holdings that entitle clients to investment advice and a certain number of trades which are recorded over the period to which they relate.

Deposit and payment service charges are primarily earned in Personal and Commercial Banking and include monthly account maintenance fees and other activity-based fees earned on deposit and cash management services. Fees are recognized over time when account maintenance and cash management services are provided, or at a point in time when an income-generating activity is performed.

Card fees arise in Personal and Commercial Banking and primarily include interchange income, late fees and annual fees. Card fees are recorded when the related services are provided, except for annual fees, which are recorded evenly throughout the year. Interchange income is calculated as a percentage of the transaction amount and/or a fixed price per transaction, as established by the payment network, and is recognized when the card transaction is settled. Reward costs for our cards are recorded as a reduction in card fees.

Investment management and custodial fees are earned in BMO Wealth Management and are based primarily on the balance of assets under management or assets under administration, as at the period end, for investment management, custodial, estate and trustee services provided. Fees are recorded over the period the services are performed.

Mutual fund revenues arise in BMO Wealth Management and are earned on fund management services which are primarily calculated and recorded based on a percentage of the fund's net asset value. The fees are recorded over the period the services are performed.

Underwriting and advisory fees are earned in BMO Capital Markets and arise from securities offerings in which we act as an underwriter or agent, structuring and administering loan syndications, and fees earned from providing merger-and-acquisition services and structuring advice. Underwriting and advisory fees are generally recognized when the services are completed.

Leases

We are lessors in both financing leases and operating leases. Leases are classified as financing leases if they transfer substantially all the risks and rewards incidental to ownership of the leased asset to the lessee. Otherwise they are classified as operating leases, as we retain substantially all the risks and rewards of asset ownership.

As lessor in a financing lease, a loan is recognized equal to the investment in the lease, which is calculated as the present value of the minimum payments to be received from the lessee, discounted at the interest rate implicit in the lease, plus any unguaranteed residual value we expect to recover at the end of the lease. Finance lease income is recognized in interest, dividend and fee income, loans, in our Consolidated Statement of Income.

Assets under operating leases are recorded in other assets in our Consolidated Balance Sheet. Rental income is recognized on a straight-line basis over the term of the lease in non-interest revenue, other, in our Consolidated Statement of Income. Depreciation on these assets is recognized on a straight-line basis over the life of the lease in non-interest expense, other, in our Consolidated Statement of Income.

Refer to Note 9 for our policy on lessee accounting.

Assets Held-for-Sale

Non-current non-financial assets classified as held-for-sale are measured at the lower of their carrying amount and fair value less costs to sell and are presented within other assets in our Consolidated Balance Sheet. Subsequent to its initial classification, a non-current asset is no longer depreciated or amortized, and any subsequent write-down in fair value less costs to sell is recognized in non-interest revenue, other, in our Consolidated Statement of Income.

Changes in Accounting Policies

Interbank Offered Rate (IBOR) Reform – Phase 2 Amendments

Effective November 1, 2020, we early adopted the IASB's IBOR Phase 2 amendments to IFRS 9 *Financial Instruments* (IFRS 9), IAS 39 *Financial Instruments: Recognition and Measurement* (IAS 39), IFRS 7 *Financial Instruments: Disclosures* (IFRS 7) and IFRS 4 *Insurance Contracts*, as well as IFRS 16 *Leases.* These amendments address issues that arise from implementation of IBOR reform, where IBORs will be replaced with alternative benchmark rates.

For financial instruments at amortized cost, the amendments introduce a practical expedient such that if a change in the contractual cash flows is as a direct consequence of IBOR reform and occurs on an economically equivalent basis, the change will be accounted for by updating the effective interest rate with no immediate gain or loss recognized. The amendments also provide additional temporary relief from applying specific IAS 39 hedge accounting requirements to hedging relationships affected by IBOR reform. For example, there is an exemption from the requirement to discontinue hedge accounting when changes to hedge documentation are solely the result of IBOR reform.

With the cessation dates for London Interbank Offered Rate (LIBOR) determined and the transition from IBORs to alternative reference rates (ARRs) well underway, and as both a holder and an issuer of IBOR-based instruments, BMO is exposed to increased financial, operational, legal and regulatory, and reputational risks. Additionally, other IBORs may be subject to discontinuance, changes in methodology, increased volatility or decreased liquidity. These risks arise principally from updating systems and processes to capture new ARRs, amending contracts or existing fallback clauses for new ARRs, managing the client transition to ARRs and the resulting impact on economic risk management, as well as updating hedge designations as the new ARRs emerge. In order to manage those risks, an enterprise IBOR Transition Office (ITO) has been established to coordinate and oversee the transition from IBORs to ARRs, with a focus on managing and mitigating internal risks, as well as managing our client relationships. The ITO, sponsored and supported by senior management, is responsible for running the enterprise-wide program, covering all of BMO's lines of business and corporate areas. The ITO has a global mandate to ensure that we properly prepare for the discontinuation or unavailability of LIBOR and other IBORs. As part of its mandate, the ITO continues to address the bank's industry and regulatory engagement, client and financial contract changes, internal and external communications, technology and operations modifications, introduction of new products, migration of existing clients, program strategy and governance, and to evaluate financial reporting impacts, including impacts on hedge accounting. In addition, the ITO continues to monitor the development and usage of ARRs across the industry, including the Alternative Reference Rate Committee's formal recommendation of the CME Group's forward-looking Secured Overnight Financing Rate (SOFR) Term Rates. As the market continues to develop, we have added and will continue to add ARR-based products to our suite of offerings.

We adhered to the International Swaps and Derivatives Association Fallbacks Protocol (ISDA Protocol), which took effect on January 25, 2021. The ISDA Protocol provides specific fallbacks depending on whether the relevant IBOR (for example, USD LIBOR or GBP LIBOR) has been permanently discontinued or is temporarily unavailable. It provides an efficient amendment mechanism that allows mutually adhering counterparties to incorporate these fallback provisions into legacy derivative contracts. Also, we continue to incorporate contractual fallback provisions in new IBOR-based cash products in order to ensure there is an alternative benchmark rate at the time of the relevant IBOR cessation.

The table below presents quantitative information for financial instruments that referenced certain IBORs as at November 1, 2020, the date of adoption for Phase 2 relief, and either were due to mature after December 31, 2021 or are demand facilities that will be subject to remediation to amend the benchmark interest rate. Financial instruments that reference rates in multi-rate jurisdictions, including the Canadian Dollar Offered Rate (CDOR), the EURO Interbank Offered Rate and Australian Bank Bill Swap Rate, are excluded from both tables below. In the case of CDOR, financial instruments indexed to 6-month and 12-month CDOR tenors were discontinued on May 17, 2021, while other tenors of CDOR will continue as a benchmark rate. As at November 1, 2020, we did not hold any material positions in either of these CDOR tenors.

(Canadian $ in millions)	November 1, 2020		
	USD LIBOR	GBP LIBOR	Other (1)
Non-derivative assets (2)	100,521	868	1,225
Non-derivative liabilities (2)	7,435	692	–
Derivative notional amounts (3)(4)	1,570,534	20,972	6,702
Authorized and committed loan commitments (5)(6)	68,449	194	23,633

(1) Includes CHF LIBOR, EONIA and JPY LIBOR.
(2) All amounts are presented based on contractual amounts outstanding with the exception of securities, recorded innon-derivative assets, which are presented based on carrying value.
(3) Notionals amounts represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under the contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in our Consolidated Balance Sheet.
(4) Includes certain cross-currency swap positions where both the pay and receive legs currently reference an IBOR. For those derivatives, the table above includes the notional amounts for both the pay and receive legs in the relevant columns aligning with the IBOR exposure.
(5) Excludes personal lines of credit and credit cards that are unconditionally cancellable at our discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.
(6) Other includes loan commitments where our customers have the option to draw from their facility in multiple currencies. Amounts drawn will be subject to prevailing IBORs for the foreign currency, including those that are in scope of IBOR reform.

On March 5, 2021, the Financial Conduct Authority (FCA) confirmed that LIBOR settings will cease to be provided by any administrator immediately after December 31, 2021 for all sterling, euro, Swiss franc and Japanese yen settings as well as the 1-week and 2-month USD LIBOR settings. The remaining USD LIBOR settings will cease to be provided immediately after June 30, 2023. U.S. prudential regulators have issued supervisory guidance that the extension of these certain USD LIBOR settings to June 30, 2023 applies only to legacy contracts; new issuances of LIBOR-based instruments must cease by December 31, 2021. The ITO adjusted all impacted project plans to align with these extended timelines. As a result of the extension of the cessation date for certain USD LIBOR settings, more contracts will expire prior to cessation and therefore the number and value of contracts that will be subject to remediation efforts have been reduced.

On November 16, 2021, the FCA confirmed that it will allow the temporary use of synthetic sterling and yen LIBOR rates in all legacy LIBOR contracts, excluding cleared derivatives, that have not been changed before December 31, 2021. We are still in the process of remediating our contracts but do not expect any material exposure to synthetic LIBOR rates at this time.

The following table presents quantitative information for financial instruments that referenced certain IBORs as at October 31, 2021, which were either due to mature after June 30, 2023 for USD LIBOR settings other than 1-week and 2-month US LIBOR, or after December 31, 2021 for all other in-scope IBORs, or are demand facilities with no maturity date. Changes in our exposures during fiscal 2021 did not result in significant changes to the risks arising from transition since adoption of these Phase 2 amendments. In the normal course of business, our exposures may continue to fluctuate with no significant impact expected on our IBOR conversion plans.

(Canadian $ in millions)	October 31, 2021		
	USD LIBOR	GBP LIBOR	Other (1)
Non-derivative assets (2)	**91,991**	**730**	**844**
Non-derivative liabilities (2)	**3,043**	**678**	**–**
Derivative notional amounts (3)(4)	**1,340,121**	**28,385**	**4,898**
Authorized and committed loan commitments (5)(6)(7)	**62,174**	**241**	**15,047**

(1) Includes CHF LIBOR, EONIA and JPY LIBOR.
(2) All amounts are presented based on contractual amounts outstanding with the exception of securities, recorded innon-derivative assets, which are presented based on carrying value.
(3) Notional amounts represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under the contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in our Consolidated Balance Sheet.
(4) Includes certain cross-currency swap positions where both the pay and receive legs currently reference an IBOR. For those derivatives, the table above includes the notional amounts for both the pay and receive legs in the relevant columns aligning with the IBOR exposure.
(5) Excludes personal lines of credit and credit cards that are unconditionally cancellable at our discretion. A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.
(6) Other includes loan commitments where our customers have the option to draw from their facility in multiple currencies. Amounts drawn will be subject to prevailing IBORs for the foreign currency, including those that are in scope of IBOR reform.
(7) Commitments also include backstop liquidity facilities provided by the bank to external parties.

Conceptual Framework

Effective November 1, 2020, we adopted the revised Conceptual Framework (Framework), which sets out the fundamental concepts for financial reporting to ensure consistency in standard-setting decisions and that similar transactions are treated in a similar way, so as to provide useful information to users of financial statements. The revised Framework had no impact on our accounting policies.

Leases

Effective November 1, 2019, we adopted IFRS 16 *Leases* (IFRS 16), whereby lessees are required to recognize a liability for the present value of future lease payments and record a corresponding asset on the balance sheet for most leases. There were minimal changes to the accounting from the lessor's perspective.

The main impact for the bank is that leases related to real estate are now recorded on the balance sheet. Previously, most of our real estate leases were classified as operating leases, and we recorded the lease expense over the lease term with no asset or liability recorded on the balance sheet other than related leasehold improvements.

On transition, we calculated the right-of-use asset as if we had always applied IFRS 16 for a selection of leases; for the remaining leases, we set theright-of-use asset equal to the lease liability. We will continue to record lease expense for low dollar value leases over the lease term with no corresponding right-of-use asset or lease liability. In addition, we combined lease and non-lease components (for example maintenance and utilities that have fixed payments) in the calculation of right-of-use assets and lease liabilities when applicable. We elected to exclude intangibles from the scope of lease accounting.

On transition, we recognized the cumulative effect of adopting IFRS 16 in opening retained earnings as at November 1, 2019 with no changes to prior periods. The impact to the Consolidated Balance Sheet as at November 1, 2019 was an increase in premises and equipment of $1,965 million, an increase in other liabilities of $2,024 million, and a decrease in retained earnings of $80 million ($59 million after tax).

The following table sets out a reconciliation of our operating lease commitments as disclosed under IAS 17 *Leases* as at October 31, 2019, which were used to derive the lease liabilities as at November 1, 2019.

(Canadian $ in millions)	November 1, 2019
Operating lease commitments at October 31, 2019 as disclosed in our consolidated financial statements	3,800
Discounted using the incremental borrowing rate at November 1, 2019	(310)
Finance lease liabilities recognized as at October 31, 2019	41
Exemption for low-value asset leases	(13)
Extension and termination options reasonably certain to be exercised	37
Executory costs not included in the lease liability	(166)
Leases signed but not yet started	(1,222)
Lease liabilities recognized at November 1, 2019	2,167

When measuring lease liabilities, we discounted lease payments using our incremental borrowing rate at November 1, 2019. The weighted-average rate applied was 2.52%.

Uncertainty Over Income Tax Treatments

Effective November 1, 2019, we adopted IFRIC 23 *Uncertainty Over Income Tax Treatments*. The interpretation clarifies the recognition and measurement requirements in IAS 12 *Income Taxes* when there is uncertainty over income tax treatments. The interpretation had no impact on our financial results on adoption.

Revenue

Effective November 1, 2018, we adopted IFRS 15 *Revenue from Contracts with Customers* (IFRS 15). We elected to retrospectively present prior periods as if IFRS 15 had always been applied. Under IFRS 15, the primary impact is the reclassification of amounts within the Consolidated Statement of Income. As a result, loyalty rewards and cash promotion costs on cards previously recorded in non-interest expense are presented as a reduction in non-interest revenue. In addition, when customers reimburse us for certain out-of-pocket expenses incurred on their behalf, we now record the

reimbursement in non-interest revenue. Previously, these reimbursements were recorded as a reduction in the related expense. There is minimal impact to net income as IFRS 15 does not require discounting of loyalty reward liabilities and we now amortize the costs to obtain card customers, which were previously expensed as incurred.

Use of Estimates and Judgments

The preparation of the consolidated financial statements requires management to use estimates and assumptions that affect the carrying amounts of certain assets and liabilities, certain amounts reported in net income and other related disclosures.

The most significant assets and liabilities for which we must make estimates and judgments include the allowance for credit losses; financial instruments measured at fair value; pension and other employee future benefits; impairment of securities; income taxes and deferred tax assets; goodwill and intangible assets; insurance-related liabilities; provisions, including legal proceedings and restructuring charges; transfers of financial assets and consolidation of structured entities; and leases. We make judgments in assessing the business model for financial assets as well as whether substantially all risks and rewards have been transferred in respect of transfers of financial assets and whether we control SEs, as discussed in Notes 6 and 7, respectively. If actual results were to differ from the estimates, the impact would be recorded in future periods.

The extent of the continuing impact of the COVID-19 pandemic on the Canadian and U.S. economies remains uncertain and difficult to predict, including government and regulatory responses to the pandemic, which could vary by country and region. The pandemic's impact on BMO's business, results of operations, reputation, financial performance and condition, including the potential for credit, counterparty and mark-to-market losses, its credit ratings and regulatory capital and liquidity ratios, as well as impacts to its customers and competitors, will depend on future developments, which remain uncertain. By their very nature, the judgments and estimates we make for the purposes of preparing our financial statements relate to matters that are inherently uncertain. However, we have detailed policies and internal controls that are intended to ensure that these judgments and estimates are well controlled and independently reviewed, and that our policies are consistently applied from period to period. We believe that our estimates of the value of our assets and liabilities are appropriate as at October 31, 2021.

Allowance for Credit Losses

The expected credit loss (ECL) model requires the recognition of credit losses generally based on 12 months of expected losses for performing loans and the recognition of lifetime losses on performing loans that have experienced a significant increase in credit risk since origination.

The determination of a significant increase in credit risk takes into account many different factors and varies by product and risk segment. The bank's methodology for determining significant increase in credit risk is based on the change in probability of default (PD) between origination and reporting date, assessed using probability-weighted scenarios as well as certain other criteria, such as 30-day past due and watchlist status. The assessment of a significant increase in credit risk requires experienced credit judgment.

In determining whether there has been a significant increase in credit risk and in calculating the amount of expected credit losses, we must rely on estimates and exercise judgment regarding matters for which the ultimate outcome is unknown. These judgments include changes in circumstances that may cause future assessments of credit risk to be materially different from current assessments, which could require an increase or decrease in the allowance for credit losses. The calculation of expected credit losses includes the explicit incorporation of forecasts of future economic conditions. We have developed models incorporating specific macroeconomic variables that are relevant to each portfolio. Key economic variables for our retail portfolios include primary operating markets of Canada, the United States (U.S.) and regional markets where considered significant. Forecasts are developed internally by our Economics group, considering external data and our view of future economic conditions. We exercise experienced credit judgment to incorporate multiple economic forecasts which are probability-weighted in the determination of the final expected credit loss. The allowance is sensitive to changes in both economic forecasts and the probability weight assigned to each forecast scenario.

Additional information regarding the allowance for credit losses is included in Note 4.

Financial Instruments Measured at Fair Value

Fair value measurement techniques are used to value various financial assets and financial liabilities, and are also used in performing impairment testing on certain non-financial assets.

Additional information regarding our fair value measurement techniques is included in Note 17.

Pension and Other Employee Future Benefits

Our pension and other employee future benefit expense is calculated by our independent actuaries using assumptions determined by management. If actual experience were to differ from the assumptions used, we would recognize this difference in other comprehensive income.

Pension and other employee future benefit expense, plan assets and defined benefit obligations are also sensitive to changes in discount rates. We determine discount rates for all of our plans using high-quality AA rated corporate bond yields with terms matching the plans' specific cash flows.

Additional information regarding our accounting for pension and other employee future benefits is included in Note 21.

Impairment of Securities

We review investments in associates and joint ventures at each quarter-end reporting period to identify and evaluate investments that show indications of possible impairment. For these equity securities, a significant or prolonged decline in the fair value of a security below its cost is objective evidence of impairment.

Debt securities measured at amortized cost or FVOCI are assessed for impairment using the expected credit loss model. For securities determined to have low credit risk, the allowance for credit losses is measured at a 12-month expected credit loss.

Additional information regarding our accounting for debt securities measured at amortized cost or FVOCI and investments in associates and joint ventures, allowance for credit losses and the determination of fair value is included in Notes 3 and 17.

Income Taxes and Deferred Tax Assets

The provision for income taxes is calculated based on the expected tax treatment of transactions recorded in either our Consolidated Statement of Income or Consolidated Statement of Changes in Equity. In determining the provision for income taxes, we interpret tax legislation, case law and administrative positions in numerous jurisdictions and, based on our judgment, record our estimate of the amount required to settle tax obligations. We also make assumptions about the expected timing of the reversal of deferred tax assets and liabilities. If our interpretations and assumptions

differ from those of tax authorities or if the timing of reversals is not as expected, our provision for income taxes could increase or decrease in future periods. The amount of any such increase or decrease cannot be reasonably estimated.

Deferred tax assets are recognized only when it is probable that sufficient taxable profit will be available in future periods against which deductible temporary differences or unused tax losses and tax credits may be utilized. We are required to assess whether it is probable that our deferred tax assets will be realized. The factors used to assess the probability of realization are our past experience of income and capital gains, our forecast of future net income before taxes, and the remaining expiration period of tax loss carryforwards and tax credits. Changes in our assessment of these factors could increase or decrease our provision for income taxes in future periods.

Additional information regarding our accounting for income taxes is included in Note 22.

Goodwill and Intangible Assets

For the purpose of impairment testing, goodwill is allocated to our groups of cash-generating units (CGUs), which represent the lowest level within the bank at which goodwill is monitored for internal management purposes. Impairment testing is performed at least annually, by comparing the carrying values and the recoverable amounts of the CGUs to which goodwill has been allocated to determine whether the recoverable amount of each group is greater than its carrying value. If the carrying value of the group were to exceed its recoverable amount, an impairment calculation would be performed. The recoverable amount of a CGU is the higher of its fair value less costs to sell and value in use.

In determining fair value less costs to sell, we employ a discounted cash flow model consistent with those used when we acquire businesses. This model is dependent on assumptions related to revenue growth, discount rates, synergies achieved on acquisition and the availability of comparable acquisition data. Changes in any of these assumptions would affect the determination of fair value for each of the business units in a different manner. Management must exercise judgment and make assumptions in determining fair value less costs to sell, and differences in judgment and assumptions could affect the determination of fair value and any resulting impairment write-down.

Intangible assets with a definite life are amortized to income on either a straight-line or an accelerated basis over a period not exceeding 15 years, depending on the nature of the asset. We test definite-life intangible assets for impairment when circumstances indicate the carrying value may not be recoverable. Indefinite-life intangible assets are tested annually for impairment. If any intangible assets are determined to be impaired, we write them down to their recoverable amount, the higher of value in use and fair value less costs to sell, when this is less than the carrying value.

Additional information regarding goodwill and intangible assets is included in Note 11.

Insurance-Related Liabilities

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy benefit liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions. The most significant impact on the valuation of a liability would result from a change in the assumption for future investment yields.

Additional information regarding insurance-related liabilities is included in Note 14.

Provisions

A provision, including for legal proceedings and restructuring charges, is recognized if, as a result of a past event, the bank has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are recorded at the best estimate of the amounts required to settle the obligation as at the balance sheet date, taking into account the risks and uncertainties associated with the obligation. Management and external experts are involved in estimating any provision, as necessary. The actual costs of settling some obligations may be substantially higher or lower than the amounts of the provisions.

Additional information regarding provisions is included in Note 24.

Transfer of Assets and Consolidation of Structured Entities

We enter into transactions in which we transfer assets, typically mortgage loans, mortgage-backed securities, and credit card loans, to a structured entity or third party to obtain alternate sources of funding or as part of our trading activities. We assess whether substantially all of the risks and rewards of or control over the assets have been transferred to determine if they qualify for derecognition. Where we continue to be exposed to substantially all of the repayment, interest rate and/or credit risk associated with the securitized assets, they do not qualify for derecognition. We continue to recognize the assets and the related cash proceeds as secured financings in our Consolidated Balance Sheet.

For securitization vehicles sponsored by the bank, the vehicles typically have limited decision-making authority. The structure of these vehicles limits the activities they can undertake, the types of assets they can hold and the funding of their activities. We control and consolidate these vehicles when we have the key decision-making powers necessary to obtain the majority of the benefits from their activities.

For certain investments in limited partnerships, we exercise judgment in determining whether we control an entity. Based on an assessment of our interests and rights, we have determined that we do not control certain entities, even though we may have an ownership interest greater than 50%. This may be the case when we are not the general partner in an arrangement and the general partner's rights most significantly affect the returns of the entity. Additionally, we have determined that we control certain entities despite having an ownership interest of less than 50%. This may be the case when we are the general partner in an arrangement and the general partner's rights most significantly affect the returns of the entity.

Transferred assets are discussed in greater detail in Note 6 and structured entities are discussed in greater detail in Notes 7 and 20.

Leases

We enter into leases as a lessee for which we recognize a lease liability and a corresponding right-of-use asset. In calculating our lease liability and corresponding right-of-use asset, we assess whether a contract is a lease by determining if we have the right to control the asset based on our ability to make decisions or direct how and for what purpose the asset is used. We evaluate the lease term based on the terms of the lease contract, including any extension or termination options that we are reasonably certain to exercise based on the economic rationale underlying the decision. We make estimates in determining the incremental borrowing rate that is used to discount lease liabilities, based on our expected costs of secured borrowing for the lease term.

Future Changes in IFRS

Insurance Contracts

In June 2020, the IASB issued amendments to IFRS 17 *Insurance Contracts* (IFRS 17), which included a deferral of the effective date, resulting in a new adoption date for the bank of November 1, 2023 instead of November 1, 2022. The amendments also simplify some requirements, such as excluding certain credit cards from the scope of IFRS 17 and providing a policy choice to exclude certain loan contracts from IFRS 17, allowing us to continue accounting for them as we do today. We continue to assess the impact of the standard on our future financial results.

Note 2: Cash and Interest Bearing Deposits with Banks

Cash and Cash Equivalents

(Canadian $ in millions)	2021	2020
Cash and deposits with banks (1)	**91,377**	55,926
Cheques and other items in transit, net	**1,884**	1,482
Total cash and cash equivalents	**93,261**	57,408

(1) Includes deposits with the Bank of Canada, the U.S. Federal Reserve and other central banks.

Cheques and Other Items in Transit, Net

Cheques and other items in transit are recorded at cost and represent the net position of the uncleared cheques and other items in transit between us and other banks.

Cash Restrictions

Certain of our foreign operations are required to maintain reserves or minimum balances with central banks in their respective countries of operation, totalling $110 million as at October 31, 2021 ($111 million as at October 31, 2020).

Interest Bearing Deposits with Banks

Deposits with banks are recorded at amortized cost and include acceptances we have purchased that were issued by other banks. Interest income earned on these deposits is recorded on an accrual basis.

Note 3: Securities

Securities are divided into six types, each with a different purpose and accounting treatment. The types of securities we hold are as follows:

Trading securities are securities purchased for resale over a short period of time. Trading securities are recorded at fair value through profit or loss. Transaction costs and changes in fair value are recorded in our Consolidated Statement of Income in trading revenues.

Fair value through profit or loss securities are measured at fair value, with changes in fair value and related transaction costs recorded in our Consolidated Statement of Income in securities gains, other than trading, except as noted below. This category includes the following:

Securities Designated at FVTPL

In order to qualify for this designation, the security must have a reliably measurable fair value, and the designation eliminates or significantly reduces the inconsistent treatment that would otherwise arise from measuring the gains and losses on a different basis. Securities must be designated on initial recognition, and the designation is irrevocable. If these securities were not designated at FVTPL, they would be accounted for at either FVOCI or amortized cost.

We designate certain securities held by our insurance subsidiaries that support our insurance liabilities at fair value through profit or loss, since the actuarial calculation of insurance liabilities is based on the fair value of the investments supporting them. This designation aligns the accounting result with the way the portfolio is managed on a fair value basis. The change in fair value of the securities is recorded in non-interest revenue, insurance revenue, and the change in fair value of the liabilities is recorded in insurance claims, commissions and changes in policy benefit liabilities. The fair value of these investments of $11,172 million as at October 31, 2021 ($11,148 million as at October 31, 2020) is recorded in securities in our Consolidated Balance Sheet. The impact of recording these investments at fair value through profit or loss was a decrease of $202 million in non-interest revenue, insurance revenue, for the year ended October 31, 2021 (an increase of $281 million and an increase of $1,006 million in 2020 and 2019, respectively).

Securities Mandatorily Measured at FVTPL

Securities managed on a fair value basis, but not held for trading, or debt securities with cash flows that do not represent solely payments of principal and interest and equity securities not held for trading or designated at FVOCI are classified as FVTPL. The fair value of these investments of $3,038 million as at October 31, 2021 ($2,420 million as at October 31, 2020) is recorded in securities in our Consolidated Balance Sheet.

Debt securities at FVOCI are debt securities purchased with the objective of both collecting contractual cash flows and selling the securities. The securities' cash flows represent solely payments of principal and interest. These securities may be sold in response to or in anticipation of changes in interest rates and any resulting prepayment risk, changes in credit risk, changes in foreign currency risk or changes in funding sources or terms, or in order to meet liquidity needs.

Debt securities measured at FVOCI are initially recorded at fair value plus transaction costs. They are subsequently measured at fair value, with unrealized gains and losses recorded in our Consolidated Statement of Comprehensive Income until the security is sold or impaired. Gains and losses on disposal and impairment losses (recoveries) are recorded in our Consolidated Statement of Income in non-interest revenue, securities gains, other than trading. Interest income earned is recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities, using the effective interest method.

Equity securities at FVOCI are equity securities for which we have elected to record changes in the fair value of the instrument in other comprehensive income as opposed to fair value through profit or loss. Gains or losses recorded on these instruments will never be recognized in profit or loss. Equity securities measured at FVOCI are not subject to an impairment assessment.

Debt securities at amortized cost are debt securities purchased with the objective of collecting contractual cash flows, and those cash flows represent solely payments of principal and interest. These securities are initially recorded at fair value plus transaction costs and are subsequently measured at amortized cost using the effective interest method. Impairment losses (recoveries) are recorded in our Consolidated Statement of Income in non-interest revenue, securities gains, other than trading. Interest income earned and amortization of premiums, discounts and transaction costs are recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities.

Investments in associates and joint ventures are accounted for using the equity method of accounting. Investments in associates are those in which we exert significant influence over operating and financing decisions; generally companies in which we own between 20% and 50% of the voting shares. Investments in joint ventures are where we have joint control. Our share of the net income or loss, including any impairment losses, is recorded in non-interest revenue, investments in associates and joint ventures in our Consolidated Statement of Income. Any other comprehensive income amounts are reflected in the relevant sections of our Consolidated Statement of Comprehensive Income.

We account for all of our securities transactions using settlement date accounting in our Consolidated Balance Sheet. Changes in fair value between the trade date and settlement date are recorded in net income, except for those related to securities measured at FVOCI, which are recorded in other comprehensive income.

Impairment Review

Debt securities at amortized cost or FVOCI are assessed for impairment using the ECL model, with the exception of those determined to have low credit risk, where the allowance for credit losses is measured at a 12-month expected credit loss. A debt security is considered to have low credit risk if it has a low risk of default, the borrower has a strong capacity to meet its contractual cash flow obligations in the near term and adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfill its contractual cash flow obligations.

Debt securities at amortized cost totalling $49,970 million as at October 31, 2021 ($48,466 million as at October 31, 2020) are net of allowances for credit losses of $2 million as at October 31, 2021 ($1 million as at October 31, 2020).

Debt securities at FVOCI totalling $62,991 million as at October 31, 2021 ($73,314 million as at October 31, 2020) are net of allowances for credit losses of $2 million as at October 31, 2021 ($4 million as at October 31, 2020).

Fair Value Measurement

For traded securities, quoted market value is considered to be fair value. Quoted market value is based on bid or ask prices, depending on which is the most appropriate to measure fair value. Where market quotes are not available, we use estimation techniques to determine fair value. Additional information regarding fair value measurement techniques is included in Note 17.

Remaining Term to Maturity of Securities

The following table shows the remaining term to maturities of securities.

(Canadian $ in millions, except as noted)	Term to maturity						2021	2020
	Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	No maturity	Total	Total
Trading Securities								
Issued or guaranteed by:								
Canadian federal government	1,292	2,039	1,669	1,603	993	–	7,596	10,900
Canadian provincial and municipal governments	894	843	583	701	2,817	–	5,838	8,335
U.S. federal government	1,733	3,620	1,849	1,803	577	–	9,582	8,418
U.S. states, municipalities and agencies	259	24	11	106	58	–	458	503
Other governments	525	520	534	247	72	–	1,898	2,516
NHA MBS, U.S. agency MBS and CMO (1)	23	140	183	243	13,465	–	14,054	12,297
Corporate debt	1,940	1,955	2,245	2,695	1,059	–	9,894	11,041
Trading loans	–	87	35	38	–	–	160	67
Corporate equity	–	–	–	–	–	54,931	54,931	43,757
Total trading securities	6,666	9,228	7,109	7,436	19,041	54,931	104,411	97,834
FVTPL Securities								
Issued or guaranteed by:								
Canadian federal government	679	28	–	10	146	–	863	601
Canadian provincial and municipal governments	–	47	5	84	1,244	–	1,380	1,429
U.S. federal government	38	–	–	–	–	–	38	44
Other governments	–	66	26	–	–	–	92	94
NHA MBS, U.S. agency MBS and CMO (1)	–	–	–	9	–	–	9	3
Corporate debt	226	67	310	969	6,132	–	7,704	7,897
Corporate equity	–	–	–	–	–	4,124	4,124	3,500
Total FVTPL securities	943	208	341	1,072	7,522	4,124	14,210	13,568
FVOCI Securities								
Issued or guaranteed by:								
Canadian federal government								
Amortized cost	4,073	4,714	4,175	75	50	–	13,087	22,240
Fair value	4,073	4,740	4,131	73	48	–	13,065	22,450
Yield (%)	1.40	1.71	1.29	1.10	1.60	–	1.48	1.44
Canadian provincial and municipal governments								
Amortized cost	1,329	1,168	166	300	10	–	2,973	4,628
Fair value	1,334	1,189	163	291	10	–	2,987	4,747
Yield (%)	1.02	1.82	1.28	1.95	2.75	–	1.45	1.46
U.S. federal government								
Amortized cost	997	1,458	3,817	12,827	1,942	–	21,041	16,881
Fair value	1,008	1,477	3,951	12,652	1,938	–	21,026	17,694
Yield (%)	2.16	1.94	2.08	1.12	1.95	–	1.48	1.73
U.S. states, municipalities and agencies								
Amortized cost	635	1,144	784	707	764	–	4,034	5,132
Fair value	640	1,171	806	724	773	–	4,114	5,276
Yield (%)	2.06	2.05	2.08	2.03	1.28	–	1.91	1.96
Other governments								
Amortized cost	2,807	2,406	735	528	–	–	6,476	7,222
Fair value	2,814	2,443	728	517	–	–	6,502	7,381
Yield (%)	0.89	1.48	0.93	1.85	–	–	1.19	1.63
NHA MBS (1)								
Amortized cost	87	411	603	–	21	–	1,122	1,583
Fair value	87	415	602	–	21	–	1,125	1,629
Yield (%)	1.18	1.74	0.88	–	1.56	–	1.23	1.79
U.S. agency MBS and CMO (1)								
Amortized cost	43	135	527	2,040	8,149	–	10,894	10,600
Fair value	44	139	555	2,082	8,191	–	11,011	10,903
Yield (%)	2.28	2.56	3.04	1.66	0.96	–	1.22	1.62
Corporate debt								
Amortized cost	1,231	683	907	268	58	–	3,147	3,153
Fair value	1,234	706	901	264	56	–	3,161	3,234
Yield (%)	0.85	2.26	1.04	2.14	3.35	–	1.37	1.72
Corporate equity								
Cost	–	–	–	–	–	103	103	90
Fair value	–	–	–	–	–	132	132	93
Total cost or amortized cost	11,202	12,119	11,714	16,745	10,994	103	62,877	71,529
Total fair value	11,234	12,280	11,837	16,603	11,037	132	63,123	73,407
Yield (%)	1.27	1.78	1.62	1.28	1.18	–	1.42	1.61
Amortized Cost Securities								
Issued or guaranteed by:								
Canadian federal government								
Amortized cost	277	4,781	1,966	60	–	–	7,084	6,238
Fair value	283	4,799	1,981	57	–	–	7,120	6,260
Canadian provincial and municipal governments								
Amortized cost	527	1,644	2,230	1,241	–	–	5,642	5,650
Fair value	539	1,654	2,304	1,226	–	–	5,723	5,706
U.S. federal government								
Amortized cost	851	2,278	1,613	891	–	–	5,633	8,785
Fair value	857	2,261	1,576	895	–	–	5,589	8,805
Other governments								
Amortized cost	375	689	283	66	–	–	1,413	1,480
Fair value	388	690	278	64	–	–	1,420	1,485
NHA MBS, U.S. agency MBS and CMO (1)								
Amortized cost	90	740	2,665	4,031	21,031	–	28,557	24,769
Fair value	93	752	2,657	4,044	20,761	–	28,307	25,198
Corporate debt								
Amortized cost	256	603	588	145	49	–	1,641	1,544
Fair value	257	608	591	146	49	–	1,651	1,555
Total amortized cost	2,376	10,735	9,345	6,434	21,080	–	49,970	48,466
Total fair value	2,417	10,764	9,387	6,432	20,810	–	49,810	49,009
Investments in associates and joint ventures								
Carrying value	–	–	–	–	–	1,135	1,135	985
Total carrying value or amortized cost of securities	21,187	32,290	28,509	31,687	58,637	60,293	232,603	232,382
Total carrying value of securities	21,219	32,451	28,632	31,545	58,680	60,322	232,849	234,260
Total by Currency (in Canadian $ equivalent)								
Canadian dollar	10,341	15,845	13,510	6,225	12,351	27,661	85,933	100,544
U.S. dollar	9,034	16,268	14,775	25,034	46,207	29,104	140,422	125,795
Other currencies	1,844	338	347	286	122	3,557	6,494	7,921
Total securities	21,219	32,451	28,632	31,545	58,680	60,322	232,849	234,260

(1) These amounts are supported by insured mortgages or issued by U.S. agencies and government-sponsored enterprises. NHA refers to the National Housing Act, MBS refers to mortgage-backed securities and CMO refers to collateralized mortgage obligations.

Yields in the table above are calculated using the cost of the security and the contractual interest rate associated with each security, adjusted for any amortization of premiums and discounts. Tax effects are not taken into consideration. The term to maturity included in the table above is based on the contractual maturity date of the security. Actual maturities could differ, as issuers may have the right to call or prepay obligations.

Unrealized Gains and Losses on FVOCI Securities

The following table summarizes unrealized gains and losses:

(Canadian $ in millions)	2021				2020			
	Cost or amortized cost	**Gross unrealized gains**	**Gross unrealized losses**	**Fair value**	Cost or amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Issued or guaranteed by:								
Canadian federal government	**13,087**	**62**	**84**	**13,065**	22,240	211	1	22,450
Canadian provincial and municipal governments	**2,973**	**29**	**15**	**2,987**	4,628	119	–	4,747
U.S. federal government	**21,041**	**282**	**297**	**21,026**	16,881	844	31	17,694
U.S. states, municipalities and agencies	**4,034**	**85**	**5**	**4,114**	5,132	147	3	5,276
Other governments	**6,476**	**55**	**29**	**6,502**	7,222	168	9	7,381
NHA MBS	**1,122**	**6**	**3**	**1,125**	1,583	46	–	1,629
U.S. agency MBS and CMO	**10,894**	**151**	**34**	**11,011**	10,600	307	4	10,903
Corporate debt	**3,147**	**34**	**20**	**3,161**	3,153	91	10	3,234
Corporate equity	**103**	**29**	**–**	**132**	90	3	–	93
Total	**62,877**	**733**	**487**	**63,123**	71,529	1,936	58	73,407

Unrealized gains (losses) may be offset by related (losses) gains on hedge contracts.

Interest, Dividend and Fee Income

Interest, dividend and fee income has been included in our Consolidated Statement of Income as follows, excluding investments in associates and joint ventures and trading securities. Related income for trading securities is included under Trading-Related Revenue in Note 17.

(Canadian $ in millions)	**2021**	2020	2019
FVTPL	**22**	17	34
FVOCI	**470**	959	1,585
Amortized cost	**419**	573	268
Total	**911**	1,549	1,887

Non-Interest Revenue

Net gains and losses from securities, excluding gains and losses on trading securities, have been included in our Consolidated Statement of Income as follows:

(Canadian $ in millions)	**2021**	2020	2019
FVTPL securities	**535**	30	164
FVOCI securities (1)			
Gross realized gains	**170**	109	209
Gross realized (losses)	**(113)**	(13)	(123)
Impairment losses	**(1)**	(2)	(1)
Securities gains, other than trading (2)	**591**	124	249

(1) Gains (losses) are net of (losses) gains on hedge contracts.

(2) The following amounts of income related to our insurance operations were included in non-interest revenue, insurance revenue, in our Consolidated Statement of Income: Interest, dividend and fee income of $379 million, $416 million and $407 million for the years ended October 31, 2021, 2020 and 2019, respectively; securities gains, other than trading, from FVOCI securities of $3 million, $19 million and $11 million for the years ended October 31, 2021, 2020 and 2019, respectively; and securities gains (losses), other than trading, from securities designated at FVTPL of $(202) million, $281 million and $1,006 million for the years ended October 31, 2021, 2020 and 2019, respectively.

Gains and losses on trading securities are included in trading-related revenue in Note 17.

Note 4: Loans and Allowance for Credit Losses

Loans

Loans are initially measured at fair value plus directly attributable costs, and are subsequently measured at amortized cost using the effective interest method where the cash flows of those loans represent solely payments of principal and interest, otherwise those loans are measured at FVTPL. Where the loans are held with the objective of both collecting contractual cash flows and selling the loans, and the cash flows represent solely payments of principal and interest, these loans are measured at FVOCI. The effective interest method allocates interest income over the expected term of the loan by applying the effective interest rate to the carrying amount of the loan. The effective interest rate is defined as the rate that exactly discounts estimated future cash receipts through the expected term of the loan to the net carrying amount of the loan. Under the effective interest method, the amount recognized in interest, dividend and fee income, loans, varies over the term of the loan based on the principal outstanding. The treatment of interest income for impaired loans is described below.

Securities Borrowed or Purchased Under Resale Agreements

Securities borrowed or purchased under resale agreements represent the amounts we will receive as a result of our commitment to return or resell securities that we have borrowed or purchased, back to the original lender or seller, on a specified date at a specified price. We account for these instruments as if they were loans.

Lending Fees

Lending fees primarily arise in Personal and Commercial Banking and BMO Capital Markets. The accounting treatment for lending fees varies depending on the transaction. Some loan origination, restructuring and renegotiation fees are recorded as interest income over the term of the loan, while other lending fees are taken into income at the time of loan origination. Commitment fees are calculated as a percentage of the facility balance at the end of each period. The fees are recorded as interest income over the term of the loan, unless we believe the loan commitment will not be used. In the latter case, commitment fees are recorded as lending fees earned over the commitment period. Loan syndication fees are payable and included in lending fees at the time the syndication is completed, unless the yield on any loans we retain is less than that of other comparable lenders involved in the financing. In the latter case, an appropriate portion of the syndication fee is recorded as interest income over the term of the loan.

Impaired Loans

We classify a loan as impaired (Stage 3) when one or more loss events have occurred, such as bankruptcy, payment default or when collection of the full amount of principal and interest is no longer reasonably assured. Generally, consumer loans in both Canada and the U.S. are classified as impaired when payment is contractually 90 days past due, or one year past due for residential mortgages if guaranteed by the Government of Canada. Credit card loans are immediately written off when principal or interest payments are 180 days past due, and are not reported as impaired. In Canada, consumer instalment loans, other personal loans and some small business loans are normally written off when they are one year past due. In the U.S., all consumer loans are generally written off when they are 180 days past due, except for non-real estate term loans, which are generally written off when they are 120 days past due. For the purpose of measuring the amount to be written off, the determination of the recoverable amount includes an estimate of future recoveries.

Corporate and commercial loans are classified as impaired when we determine there is no longer reasonable assurance that principal or interest will be collected in their entirety on a timely basis. Generally, we consider corporate and commercial loans to be impaired when payments are 90 days past due. Corporate and commercial loans are written off following a review on an individual loan basis that confirms all reasonable recovery attempts have been exhausted.

A loan will be reclassified to performing status when we determine that there is reasonable assurance of full and timely repayment of interest and principal in accordance with the terms and conditions of the loan, and that none of the criteria for classification of the loan as impaired continues to apply.

Loans are in default when the borrower is unlikely to pay its credit obligations in full without recourse by the bank, such as realizing security, or when the borrower's payments are more than 90 days past due (180 days for credit card loans). Overdrafts are considered to be past due once the customer has breached an advised limit or has been advised of a limit lower than currently outstanding or, in the case of retail overdrafts, has not brought the overdraft down to a $nil balance within a specified time period.

Once a loan is identified as impaired, we continue to recognize interest income based on the original effective interest rate on the loan amount net of its related allowance. In the periods following the recognition of impairment, adjustments to the allowance for these loans reflecting the time value of money are recognized as interest income. Interest income on impaired loans of $71 million was recognized for the year ended October 31, 2021 ($96 million in 2020 and $80 million in 2019).

During the year ended October 31, 2021, we recorded a net loss of $10 million before tax (loss of $46 million in 2020 and gain of $11 million in 2019) on the sale of impaired and written off loans.

Allowance for Credit Losses (ACL)

The allowance for credit losses recorded in our Consolidated Balance Sheet is maintained at a level that we consider adequate to absorb credit-related losses on our loans and other credit instruments. The allowance for credit losses amounted to $2,958 million as at October 31, 2021 ($3,814 million in 2020), of which $2,564 million ($3,303 million in 2020) was recorded in loans and $394 million ($511 million in 2020) was recorded in other liabilities in our Consolidated Balance Sheet.

Significant changes in the gross balances, including originations, maturities and repayments in the normal course of operations, impact the allowance for credit losses.

Allowance on Performing Loans

We maintain an allowance in order to cover impairment in the existing portfolio for loans that have not yet been individually identified as impaired. Our approach to establishing and maintaining the allowance on performing loans is based on the requirements of IFRS, considering guidelines issued by OSFI.

Under the IFRS 9 ECL methodology, an allowance is recorded for expected credit losses on financial assets regardless of whether there has been an actual impairment. We recognize a loss allowance at an amount generally equal to 12-month expected credit losses, if the credit risk at the reporting date has not increased significantly since initial recognition (Stage 1). We will record expected credit losses over the remaining life of performing financial assets which are considered to have experienced a significant increase in credit risk (Stage 2).

The determination of a significant increase in credit risk takes into account many different factors and varies by product and risk segment. The bank's methodology for determining significant increase in credit risk is based on the change in probability of default (PD) between origination and reporting date, assessed using probability-weighted scenarios as well as certain other criteria, such as 30-days past due and watchlist status.

For each exposure, ECL is a function of PD, exposure at default (EAD) and loss given default (LGD), with the timing of the loss also considered, and is estimated by incorporating forward-looking economic information and through the use of experienced credit judgment to reflect factors not captured in ECL models.

PD represents the likelihood that a loan will not be repaid and will go into default in either a12-month horizon for Stage 1 or a lifetime horizon for Stage 2. PD for each individual instrument is modelled based on historical data and is estimated based on current market conditions and reasonable and supportable information about future economic conditions.

EAD is modelled based on historical data and represents an estimate of the amount of credit exposure outstanding at the time a default may occur. For off-balance sheet and undrawn amounts, EAD includes an estimate of any further amounts to be drawn at the time of default.

LGD is the amount that may not be recovered in the event of default and is modelled based on historical data and reasonable and supportable information about future economic conditions, where appropriate. LGD takes into consideration the amount and quality of any collateral held.

We consider past events, current market conditions and reasonable supportable forward-looking information about future economic conditions in determining the amount of expected losses. In assessing information about possible future economic conditions, we utilize multiple economic scenarios, including our base case scenario, which in our view represents the most probable outcome, as well as benign and adverse scenarios, all of which are developed by our Economics group. Key economic variables used in the determination of the allowance for credit losses reflect the geographic diversity of our portfolios, where appropriate.

In considering the lifetime of a loan, the contractual period of the loan, including prepayment, extension and other options, is generally used. For revolving instruments, such as credit cards, which may not have a defined contractual period, the lifetime is based on historical behaviour.

Our ECL methodology also requires the use of experienced credit judgment to incorporate the estimated impact of factors that are not captured in the modelled ECL results. We applied experienced credit judgment to reflect the continuing impact of the uncertain environment on credit conditions and the economy as a result of the COVID-19 pandemic.

Allowance on Impaired Loans

We maintain an allowance on individually identified impaired loans (Stage 3) of $498 million as at October 31, 2021 ($727 million as at October 31, 2020) on our gross impaired loans of $2,169 million as at October 31, 2021 ($3,638 million as at October 31, 2020), to reduce their carrying value to an expected recoverable amount of $1,671 million as at October 31, 2021 ($2,911 million as at October 31, 2020).

We review our loans on an ongoing basis to assess whether any loans should be classified as impaired and whether an allowance orwrite-off should be recorded (excluding credit card loans, which are written off when principal or interest payments are 180 days past due). The review of individually significant problem loans is conducted at least quarterly by the account managers, each of whom assesses the ultimate collectability and estimated recoveries for a specific loan based on all events and conditions that are relevant to the loan. This assessment is then reviewed and approved by an independent credit officer.

Individually Significant Impaired Loans

To determine the amount we expect to recover from an individually significant impaired loan, we use the value of the estimated future cash flows discounted at the loan's original effective interest rate. The determination of estimated future cash flows of a collateralized impaired loan reflects the expected realization of the underlying security, net of expected costs and any amounts legally required to be paid to the borrower. Security can vary by type of loan and may include cash, securities, real estate properties, accounts receivable, guarantees, inventory or other capital assets.

Individually Insignificant Impaired Loans

Residential mortgages and consumer instalment and other personal loans are individually insignificant and may be assessed individually or collectively for losses at the time of impairment, taking into account historical loss experience and expectations of future economic conditions.

Collectively assessed loans are grouped together by similar risk characteristics, such as type of instrument, geographic location, industry, type of collateral and term to maturity.

Loans: Credit Risk Exposure

The following table sets out our credit risk exposure for all loans carried at amortized cost, FVOCI or FVTPL as at October 31, 2021 and 2020. Stage 1 represents those performing loans carried with up to a 12-month expected credit loss, Stage 2 represents those performing loans carried with a lifetime expected credit loss, and Stage 3 represents those loans with a lifetime expected credit loss that are credit impaired.

(Canadian $ in millions)	2021				2020			
	Stage 1	**Stage 2**	**Stage 3**	**Total**	Stage 1	Stage 2	Stage 3	Total
Loans: Residential mortgages								
Exceptionally low	**4**	**–**	**–**	**4**	1	–	–	1
Very low	**94,566**	**179**	**–**	**94,745**	79,295	429	–	79,724
Low	**23,471**	**1,293**	**–**	**24,764**	24,490	2,481	–	26,971
Medium	**12,066**	**2,250**	**–**	**14,316**	11,560	6,461	–	18,021
High	**167**	**306**	**–**	**473**	172	446	–	618
Not rated	**1,051**	**46**	**–**	**1,097**	1,132	148	–	1,280
Impaired	**–**	**–**	**351**	**351**	–	–	409	409
Gross residential mortgages	**131,325**	**4,074**	**351**	**135,750**	116,650	9,965	409	127,024
Allowance for credit losses	**46**	**39**	**12**	**97**	51	75	16	142
Carrying amount	**131,279**	**4,035**	**339**	**135,653**	116,599	9,890	393	126,882
Loans: Consumer instalment and other personal								
Exceptionally low	**1,487**	**37**	**–**	**1,524**	1,550	31	–	1,581
Very low	**30,672**	**8**	**–**	**30,680**	26,645	37	–	26,682
Low	**21,660**	**534**	**–**	**22,194**	20,935	585	–	21,520
Medium	**13,336**	**3,607**	**–**	**16,943**	10,324	4,334	–	14,658
High	**661**	**1,375**	**–**	**2,036**	429	1,470	–	1,899
Not rated	**3,450**	**50**	**–**	**3,500**	3,372	96	–	3,468
Impaired	**–**	**–**	**287**	**287**	–	–	340	340
Gross consumer instalment and other personal	**71,266**	**5,611**	**287**	**77,164**	63,255	6,553	340	70,148
Allowance for credit losses	**113**	**333**	**91**	**537**	134	429	105	668
Carrying amount	**71,153**	**5,278**	**196**	**76,627**	63,121	6,124	235	69,480
Loans: Credit cards (1)								
Exceptionally low	**2,532**	**–**	**–**	**2,532**	2,252	–	–	2,252
Very low	**450**	**–**	**–**	**450**	1,106	15	–	1,121
Low	**1,801**	**66**	**–**	**1,867**	899	148	–	1,047
Medium	**1,743**	**663**	**–**	**2,406**	1,611	899	–	2,510
High	**75**	**287**	**–**	**362**	58	377	–	435
Not rated	**486**	**–**	**–**	**486**	524	–	–	524
Impaired	**–**	**–**	**–**	**–**	–	–	–	–
Gross credit cards	**7,087**	**1,016**	**–**	**8,103**	6,450	1,439	–	7,889
Allowance for credit losses	**67**	**209**	**–**	**276**	61	272	–	333
Carrying amount	**7,020**	**807**	**–**	**7,827**	6,389	1,167	–	7,556
Loans: Business and government (2)								
Acceptable								
Investment grade	**144,807**	**1,446**	**–**	**146,253**	125,216	3,576	–	128,792
Sub-investment grade	**85,375**	**14,534**	**–**	**99,909**	88,745	30,108	–	118,853
Watchlist	**–**	**6,137**	**–**	**6,137**	–	8,621	–	8,621
Impaired	**–**	**–**	**1,531**	**1,531**	–	–	2,889	2,889
Gross business and government	**230,182**	**22,117**	**1,531**	**253,830**	213,961	42,305	2,889	259,155
Allowance for credit losses	**529**	**730**	**395**	**1,654**	510	1,044	606	2,160
Carrying amount	**229,653**	**21,387**	**1,136**	**252,176**	213,451	41,261	2,283	256,995
Gross total loans and acceptances	**439,860**	**32,818**	**2,169**	**474,847**	400,316	60,262	3,638	464,216
Net total loans and acceptances	**439,105**	**31,507**	**1,671**	**472,283**	399,560	58,442	2,911	460,913
Commitments and financial guarantee contracts								
Acceptable								
Investment grade	**154,975**	**2,367**	**–**	**157,342**	139,732	1,935	–	141,667
Sub-investment grade	**46,827**	**8,164**	**–**	**54,991**	44,443	20,421	–	64,864
Watchlist	**–**	**2,453**	**–**	**2,453**	–	4,861	–	4,861
Impaired	**–**	**–**	**682**	**682**	–	–	1,261	1,261
Allowance for credit losses	**195**	**186**	**13**	**394**	211	288	12	511
Carrying amount (3)(4)	**201,607**	**12,798**	**669**	**215,074**	183,964	26,929	1,249	212,142

(1) Credit card loans are immediately written off when principal or interest payments are 180 days past due, and as a result are not reported as impaired in Stage 3.
(2) Includes customers' liability under acceptances.
(3) Represents the total contractual amounts of undrawn credit facilities and otheroff-balance sheet exposures, excluding personal lines of credit and credit cards that are unconditionally cancellable at our discretion.
(4) Certain commercial borrower commitments are conditional and may include recourse to parties.

Certain comparative figures have been reclassified to conform with the current year's presentation.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following table shows the continuity in the loss allowance, by product type, for the years ended October 31, 2021 and 2020. Transfers represent the amount of ECL that moved between stages during the year, for example, moving from a 12-month (Stage 1) to a lifetime (Stage 2) ECL measurement basis. Net remeasurements represent the ECL impact due to transfers between stages, as well as changes in economic forecasts and credit quality. Model changes include new calculation models or methodologies.

(Canadian $ in millions)	2021				2020			
	Stage 1	**Stage 2**	**Stage 3**	**Total**	Stage 1	Stage 2	Stage 3	Total
Loans: Residential mortgages								
Balance as at beginning of year	**51**	**75**	**26**	**152**	15	33	38	86
Transfer to Stage 1	**62**	**(53)**	**(9)**	**–**	25	(22)	(3)	–
Transfer to Stage 2	**(4)**	**21**	**(17)**	**–**	(3)	10	(7)	–
Transfer to Stage 3	**–**	**(13)**	**13**	**–**	–	(5)	5	–
Net remeasurement of loss allowance	**(93)**	**24**	**29**	**(40)**	6	70	22	98
Loan originations	**38**	**–**	**–**	**38**	14	–	–	14
Derecognitions and maturities	**(7)**	**(12)**	**–**	**(19)**	(3)	(6)	–	(9)
Model changes	**–**	**–**	**–**	**–**	(3)	(5)	–	(8)
Total Provision for Credit Losses (PCL) (1)	**(4)**	**(33)**	**16**	**(21)**	36	42	17	95
Write-offs (2)	**–**	**–**	**(12)**	**(12)**	–	–	(11)	(11)
Recoveries of previous write-offs	**–**	**–**	**11**	**11**	–	–	8	8
Foreign exchange and other	**(1)**	**(2)**	**(22)**	**(25)**	–	–	(26)	(26)
Balance as at end of year	**46**	**40**	**19**	**105**	51	75	26	152
Loans: Consumer instalment and other personal								
Balance as at beginning of year	**148**	**454**	**105**	**707**	89	333	136	558
Transfer to Stage 1	**297**	**(287)**	**(10)**	**–**	189	(180)	(9)	–
Transfer to Stage 2	**(30)**	**66**	**(36)**	**–**	(25)	86	(61)	–
Transfer to Stage 3	**(7)**	**(94)**	**101**	**–**	(4)	(96)	100	–
Net remeasurement of loss allowance	**(289)**	**247**	**103**	**61**	(148)	315	196	363
Loan originations	**86**	**–**	**–**	**86**	49	–	–	49
Derecognitions and maturities	**(27)**	**(49)**	**–**	**(76)**	(18)	(38)	–	(56)
Model changes	**(48)**	**26**	**–**	**(22)**	16	33	–	49
Total PCL (1)	**(18)**	**(91)**	**158**	**49**	59	120	226	405
Write-offs (2)	**–**	**–**	**(236)**	**(236)**	–	–	(320)	(320)
Recoveries of previous write-offs	**–**	**–**	**86**	**86**	–	–	87	87
Foreign exchange and other	**(2)**	**(6)**	**(22)**	**(30)**	–	1	(24)	(23)
Balance as at end of year	**128**	**357**	**91**	**576**	148	454	105	707
Loans: Credit cards								
Balance as at beginning of year	**110**	**321**	**–**	**431**	80	225	–	305
Transfer to Stage 1	**194**	**(194)**	**–**	**–**	152	(152)	–	–
Transfer to Stage 2	**(28)**	**28**	**–**	**–**	(32)	32	–	–
Transfer to Stage 3	**(1)**	**(172)**	**173**	**–**	(1)	(178)	179	–
Net remeasurement of loss allowance	**(191)**	**292**	**21**	**122**	(100)	429	82	411
Loan originations	**39**	**–**	**–**	**39**	18	–	–	18
Derecognitions and maturities	**(7)**	**(29)**	**–**	**(36)**	(6)	(25)	–	(31)
Model changes	**–**	**–**	**–**	**–**	(1)	(10)	–	(11)
Total PCL (1)	**6**	**(75)**	**194**	**125**	30	96	261	387
Write-offs (2)	**–**	**–**	**(266)**	**(266)**	–	–	(333)	(333)
Recoveries of previous write-offs	**–**	**–**	**94**	**94**	–	–	85	85
Foreign exchange and other	**(2)**	**(1)**	**(22)**	**(25)**	–	–	(13)	(13)
Balance as at end of year	**114**	**245**	**–**	**359**	110	321	–	431
Loans: Business and government								
Balance as at beginning of year	**658**	**1,258**	**608**	**2,524**	338	496	311	1,145
Transfer to Stage 1	**505**	**(496)**	**(9)**	**–**	180	(172)	(8)	–
Transfer to Stage 2	**(101)**	**172**	**(71)**	**–**	(184)	195	(11)	–
Transfer to Stage 3	**(2)**	**(97)**	**99**	**–**	(8)	(285)	293	–
Net remeasurement of loss allowance	**(549)**	**334**	**138**	**(77)**	227	1,106	744	2,077
Loan originations	**329**	**–**	**–**	**329**	208	–	–	208
Derecognitions and maturities	**(140)**	**(214)**	**–**	**(354)**	(85)	(128)	–	(213)
Model changes	**(5)**	**(19)**	**–**	**(24)**	(30)	8	–	(22)
Total PCL (1)	**37**	**(320)**	**157**	**(126)**	308	724	1,018	2,050
Write-offs (2)	**–**	**–**	**(336)**	**(336)**	–	–	(716)	(716)
Recoveries of previous write-offs	**–**	**–**	**42**	**42**	–	–	72	72
Foreign exchange and other	**(33)**	**(83)**	**(70)**	**(186)**	12	38	(77)	(27)
Balance as at end of year	**662**	**855**	**401**	**1,918**	658	1,258	608	2,524
Total as at end of year	**950**	**1,497**	**511**	**2,958**	967	2,108	739	3,814
Comprised of: Loans	**755**	**1,311**	**498**	**2,564**	756	1,820	727	3,303
Other credit instruments (3)	**195**	**186**	**13**	**394**	211	288	12	511

(1) Excludes PCL on other assets of $(7) million for the year ended October 31, 2021 ($16 million in 2020).
(2) Generally, we continue to seek recovery on amounts that were written off during the year, unless the loan is sold, we no longer have the right to collect or we have exhausted all reasonable efforts to collect.
(3) Other credit instruments, including off-balance sheet items, are recorded in other liabilities in our Consolidated Balance Sheet.

Loans and allowance for credit losses by geographic region as at October 31, 2021 and 2020 are as follows:

(Canadian $ in millions)	2021				2020			
	Gross amount	**Allowance for credit losses on impaired loans** (2)	**Allowance for credit losses on performing loans** (3)	**Net amount**	Gross amount	Allowance for credit losses on impaired loans (2)	Allowance for credit losses on performing loans (3)	Net amount
By geographic region (1):								
Canada	**299,905**	**345**	**1,143**	**298,417**	276,975	303	1,323	275,349
United States	**153,479**	**153**	**910**	**152,416**	161,725	410	1,225	160,090
Other countries	**7,442**	**–**	**13**	**7,429**	12,023	14	28	11,981
Total	**460,826**	**498**	**2,066**	**458,262**	450,723	727	2,576	447,420

(1) Geographic region is based upon the country of ultimate risk.
(2) Excludes allowance for credit losses on impaired loans of $13 million for other credit instruments, which is included in other liabilities ($12 million as at October 31, 2020).
(3) Excludes allowance for credit losses on performing loans of $381 million for other credit instruments, which is included in other liabilities ($399 million as at October 31, 2020).
Certain comparative figures have been reclassified to conform with the current year's presentation.

Impaired (Stage 3) loans, including the related allowances, as at October 31, 2021 and 2020 are as follows:

(Canadian $ in millions)	2021					2020
	Gross impaired amount (3)	**Allowance for credit losses on impaired loans** (4)	**Net impaired amount** (3)	Gross impaired amount (3)	Allowance for credit losses on impaired loans (4)	Net impaired amount (3)
Residential mortgages	**351**	**12**	**339**	409	16	393
Consumer instalment and other personal	**287**	**91**	**196**	340	105	235
Business and government (1)	**1,531**	**395**	**1,136**	2,889	606	2,283
Total	**2,169**	**498**	**1,671**	3,638	727	2,911
By geographic region (2):						
Canada	**1,195**	**345**	**850**	1,343	303	1,040
United States	**974**	**153**	**821**	2,211	410	1,801
Other countries	**–**	**–**	**–**	84	14	70
Total	**2,169**	**498**	**1,671**	3,638	727	2,911

(1) Includes customers' liability under acceptances.
(2) Geographic region is based upon the country of ultimate risk.
(3) Gross impaired loans and net impaired loans exclude purchased credit impaired loans.
(4) Excludes allowance for credit losses on impaired loans of $13 million for other credit instruments, which is included in other liabilities ($12 million as at October 31, 2020).

Loans Past Due Not Impaired

Loans that are past due but not classified as impaired are loans where our customers have failed to make payments when contractually due but for which we expect the full amount of principal and interest payments to be collected, or loans which are held at fair value. The following table presents loans that are past due but not classified as impaired as at October 31, 2021 and 2020. Loans less than 30 days past due are excluded as they are not generally representative of the borrowers' ability to meet their payment obligations.

(Canadian $ in millions)	2021			2020		
	30 to 89 days	**90 days or more**	**Total**	30 to 89 days	90 days or more	Total
Residential mortgages	**404**	**14**	**418**	543	43	586
Credit card, consumer instalment and other personal	**279**	**59**	**338**	345	65	410
Business and government	**264**	**33**	**297**	330	22	352
Total	**947**	**106**	**1,053**	1,218	130	1,348

Fully secured loans with amounts between 90 and 180 days past due that we have not classified as impaired totalled $36 million and $53 million as at October 31, 2021 and 2020, respectively.

ECL Sensitivity and Key Economic Variables

The allowance for performing loans is sensitive to changes in both economic forecasts and the probability-weight assigned to each forecast scenario. Many of the factors have a high degree of interdependency, although there is no single factor to which loan impairment allowances as a whole are sensitive.

As at October 31, 2021, our base case scenario depicts a stronger economic forecast in both Canada and the United States compared to the base case economic forecast as at October 31, 2020, which depicted more moderate economic growth over the near-term projection period. If we assumed a 100% base case economic forecast and included the impact of loan migration by restaging, with other assumptions held constant including the application of experienced credit judgment, the allowance for performing loans would be approximately $1,725 million as at October 31, 2021 ($2,375 million as at October 31, 2020) compared to the reported allowance for performing loans of $2,447 million ($3,075 million as at October 31, 2020).

As at October 31, 2021, our adverse case economic forecast depicts a contracting economy with annual average real GDP declining in both Canada and the United States. Despite adopting a more severe adverse scenario during fiscal 2021, the adverse case economic outlook as at October 31, 2020 depicted a more severe economic contraction in Canada and the United States compared with the adverse case as at October 31, 2021 due to the improvement in economic conditions year over year. If we assumed a 100% adverse economic forecast and included the impact of loan migration by restaging, with other assumptions held constant including the application of experienced credit judgment, the allowance for performing loans would be approximately $3,825 million as at October 31, 2021 ($4,875 million as at October 31, 2020) compared to the reported allowance for performing loans of $2,447 million ($3,075 million as at October 31, 2020).

Actual results in a recession will differ as our portfolio will change through time due to migration, growth, risk mitigation actions and other factors. In addition, our allowance will reflect the three economic scenarios used in assessing the allowance, with weightings attached to adverse and benign scenarios often unequally weighted and the weightings will change through time.

The following table shows the key economic variables used to estimate the allowance on performing loans during the forecast period. The values shown represent the national annual average levels or growth rates for the next 12 months and subsequent 12 months following each reporting period for all scenarios. While the values disclosed below are national variables, we use regional variables in the underlying models and consider factors impacting particular industries where appropriate.

	As at October 31, 2021						As at October 31, 2020					
All figures are average annual values	Benign scenario		Base scenario		Adverse scenario		Benign scenario		Base scenario		Adverse scenario	
	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months	First 12 months	Subsequent 12 months
Real GDP growth rates (1)												
Canada	**6.3%**	**5.5%**	**4.0%**	**3.9%**	**(2.7)%**	**(1.1)%**	3.7%	6.4%	1.8%	4.2%	(4.4)%	(1.1)%
United States	**7.1%**	**4.0%**	**4.8%**	**2.7%**	**(1.2)%**	**(1.1)%**	1.6%	6.0%	(0.4)%	4.0%	(5.1)%	(1.2)%
Corporate BBB 10-year spread												
Canada	**1.4%**	**1.7%**	**1.8%**	**2.0%**	**3.6%**	**4.4%**	1.8%	1.9%	2.2%	2.2%	3.6%	4.5%
United States	**0.9%**	**1.1%**	**1.2%**	**1.5%**	**4.2%**	**4.5%**	1.7%	1.7%	2.0%	2.0%	3.9%	4.1%
Unemployment rates												
Canada	**6.0%**	**4.9%**	**6.6%**	**5.7%**	**10.8%**	**12.7%**	7.4%	6.1%	8.9%	7.5%	12.7%	13.9%
United States	**4.2%**	**3.2%**	**4.7%**	**3.7%**	**8.5%**	**11.0%**	6.4%	4.8%	8.0%	6.0%	11.5%	12.8%
Housing Price Index												
Canada (2)	**18.2%**	**10.2%**	**15.1%**	**5.2%**	**(6.4)%**	**(18.0)%**	10.3%	7.7%	7.2%	2.8%	(1.2)%	(8.7)%
United States (3)	**14.6%**	**6.7%**	**12.3%**	**4.3%**	**(6.1)%**	**(15.5)%**	4.6%	4.5%	2.4%	2.1%	(2.4)%	(6.2)%

(1) Real gross domestic product (GDP) and housing price index are four quarter averages of year-over-year growth rates.
(2) In Canada, we use the HPI Benchmark Composite.
(3) In the United States, we use the National Case-Shiller House Price Index.

The ECL approach requires the recognition of credit losses generally based on 12 months of expected losses for performing loans (Stage 1) and the recognition of lifetime expected losses on performing loans that have experienced a significant increase in credit risk since origination (Stage 2). Under our current probability-weighted scenarios, if all our performing loans were in Stage 1, our models would generate an allowance for performing loans of approximately $1,775 million compared to the reported allowance for performing loans of $2,447 million as at October 31, 2021 ($2,300 million compared to the reported allowance for performing loans of $3,075 million as at October 31, 2020).

Renegotiated Loans

From time to time we modify the contractual terms of a loan due to the poor financial condition of the borrower. We assess renegotiated loans for impairment consistent with our existing policies for impairment. When renegotiation leads to significant concessions being granted, and the concessions are for economic or legal reasons related to the borrower's financial difficulty that we would not otherwise consider, the loan is classified as impaired. We consider one or a combination of the following to be significant concessions: (1) a reduction of the stated interest rate, (2) an extension of the maturity date or dates at a stated interest rate lower than the current market rate for a new loan with similar terms, or (3) forgiveness of principal or accrued interest.

Renegotiated loans remain in performing status if the modifications are not considered to be significant or are returned to performing status when none of the criteria for classification as impaired continues to apply.

The carrying value of loans with lifetime allowance for credit losses modified during the year ended October 31, 2021 was $37 million ($8,649 million in 2020, which included modifications for COVID-19 payment deferrals of $8,485). Modified loans of $21 million ($49 million in 2020 and $36 million in 2019) were written off during the year ended October 31, 2021. As at October 31, 2021, $29 million ($1,469 million as at October 31, 2020) of loans previously modified saw their loss allowance during the year change from lifetime to 12-month expected credit loss.

Foreclosed Assets

Property or other assets that we receive from borrowers to satisfy their loan commitments are classified as either held for own use or held for sale according to management's intention, recorded initially at fair value for assets held for own use and at the lower of carrying value or fair value less costs to sell for any assets held for sale. Assets held for own use are subsequently accounted for in accordance with the relevant asset classification and assets held for sale are assessed for impairment.

During the year ended October 31, 2021, we foreclosed on impaired loans and received $27 million of real estate properties that we classified as held for sale ($44 million in 2020). As at October 31, 2021, real estate properties held for sale totalled $11 million ($27 million as at October 31, 2020). These properties are disposed of when considered appropriate.

Collateral

Collateral is used to manage credit risk related to securities borrowed or purchased under resale agreements, residential mortgages, consumer instalment and other personal loans, and business and government loans. Additional information on our collateral requirements is included in Notes 14 and 24, as well as in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report.

Note 5: Risk Management

We have an enterprise-wide approach to the identification, measurement, monitoring and control of risks faced across our organization.
The key risks related to our financial instruments are classified as credit and counterparty, market, and liquidity and funding risk. The COVID-19 pandemic continues to impact certain risks as outlined in the Enterprise Wide Risk Management section of our Management's Discussion and Analysis and where those risks are related to financial instruments, they have been included in the blue-tinted font as referenced below.

Credit and Counterparty Risk

Credit and counterparty risk is the potential for loss due to the failure of a borrower, endorser, guarantor or counterparty to repay a loan or honour another predetermined financial obligation. Credit risk arises predominantly with respect to loans, over-the-counter and centrally cleared derivatives and other credit instruments. This is the most significant measurable risk that we face.

Our risk management practices and key measures are disclosed in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report. Additional information on credit risk related to loans and derivatives is included in Notes 4 and 8, respectively.

Market Risk

Market risk is the potential for adverse changes in the value of our assets and liabilities resulting from changes in market variables such as interest rates, credit spreads, foreign exchange rates, equity and commodity prices and their implied volatilities, and includes the risk of credit migration and default in our trading book. We incur market risk in our trading and underwriting activities, as well as in our structural banking activities.

Our market risk management practices and key measures are disclosed in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report.

Liquidity and Funding Risk

Liquidity and funding risk is the potential for loss if we are unable to meet our financial commitments in a timely manner at reasonable prices as they become due. It is our policy to ensure that sufficient liquid assets and funding capacity are available to meet financial commitments, including liabilities to depositors and suppliers, as well as lending, investment and pledging commitments, even in times of stress. Managing liquidity and funding risk is essential to maintaining enterprise soundness and safety, depositor confidence and earnings stability.

Our liquidity and funding risk management practices and key measures are disclosed in the blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis within this report.

Note 6: Transfers of Financial Assets

Loan Securitization

We sell Canadian residential mortgages to third-party Canadian securitization programs, including the Canada Mortgage Bond program, directly to third-party investors under the National Housing Act Mortgage-Backed Securities (NHA MBS) program and under our own program. In 2020, we also participated in the Government of Canada's Insured Mortgage Purchase Program, launched as part of its response to COVID-19. We assess whether substantially all of the risks and rewards of or control over the loans have been transferred to determine whether they qualify for derecognition.

Under these programs, we are entitled to the payment over time of the excess of the sum of interest and fees collected from customers, in connection with the mortgages that were sold, over the yield paid to investors, less credit losses and other costs. We also act as counterparty in interest rate swap agreements where we pay the interest due to Canada Mortgage Bond holders and receive the interest on the underlying mortgages, which are converted into MBS through the NHA MBS program and sold to Canada Housing Trust. Since we continue to be exposed to substantially all the prepayment, interest rate and credit risk associated with the securitized mortgages, they do not qualify for derecognition. We continue to recognize the mortgages and the related cash proceeds as secured financing in our Consolidated Balance Sheet. The interest and fees collected, net of the yield paid to investors, are recorded in net interest income using the effective interest method over the term of the securitization. Credit losses associated with the mortgages are recorded in the provision for credit losses. During the year ended October 31, 2021, we sold $7,614 million of mortgages to these programs ($6,644 million in 2020).

The following table presents the carrying amounts and fair values of transferred assets that did not qualify for derecognition and the associated liabilities:

(Canadian $ in millions)	**2021**		2020	
	Carrying amount (1)	**Fair value**	Carrying amount (1)	Fair value
Assets				
Trading securities (2)	**997**		345	
Residential mortgages	**7,847**		8,453	
Other related assets (3)	**10,009**		10,363	
Total	**18,853**	**18,859**	19,161	19,357
Associated liabilities (4)	**18,208**	**18,323**	18,617	19,213

(1) Carrying amount of loans is net of allowance, where applicable.
(2) Trading securities represent collateralized mortgage obligations issued by third-party sponsored vehicles, where we do not substantially transfer all the risks and rewards of ownership to third-party investors.
(3) Other related assets represent payments received on account of mortgages pledged under securitization programs that have not yet been applied against the associated liabilities. The payments received are held in permitted instruments on behalf of the investors in the securitization vehicles until principal payments are required to be made on the associated liabilities. In order to compare all assets supporting the associated liabilities, this amount is added to the carrying amount of the securitized assets in the table above.
(4) Associated liabilities are recognized in Securitization and structured entities' liabilities in our Consolidated Balance Sheet.

Continuing Involvement in Transferred Financial Assets that Qualify for Derecognition

We retain the mortgage servicing rights, representing our continuing involvement, for certain mortgage loans purchased or originated in the U.S. which are sold and derecognized. During the year ended October 31, 2021, we sold and derecognized $631 million of these loans ($720 million in

2020 and $460 million in 2019) and recognized a $32 million gain ($33 million in 2020 and $15 million in 2019) in non-interest revenue, other. As at October 31, 2021, the carrying value of the mortgage servicing rights was $29 million ($29 million as at October 31, 2020) and the fair value was $28 million ($30 million as at October 31, 2020).

We retain the residual interests, representing our continuing involvement, for certain commercial mortgage loans purchased or originated in the U.S. which are sold and derecognized. During the year ended October 31, 2021, we sold and derecognized $1,252 million of these loans ($56 million in 2020 and $nil in 2019) and recognized a gain of $3 million upon transfer ($nil in 2020 and $nil in 2019). The carrying values of our retained interests classified as debt securities at amortized cost and loans were $7 million and $7 million, respectively, as at October 31, 2021 ($2 million and $nil as at October 31, 2020). Fair value was equal to carrying value on these dates.

In addition, we hold U.S. government agency collateralized mortgage obligations (CMOs) issued by third-party sponsored vehicles, which we may further securitize by packaging them into new CMOs prior to selling to third-party investors. Where we do not substantially transfer all the risks and rewards of ownership to third-party investors, we continue to recognize these CMOs and the related cash proceeds as secured financing in our Consolidated Balance Sheet. During the year, we sold CMOs that qualified for derecognition, where retained interests represent our continuing involvement and are managed as part of larger portfolios held for either trading, liquidity or hedging purposes. Where we sold these CMOs, the associated gains and losses are recognized in non-interest revenue, trading revenues. As at October 31, 2021, the fair value of our retained interests in these CMOs was $3 million, classified as trading securities in our Consolidated Balance Sheet ($28 million as at October 31, 2020). Refer to Note 3 for further information.

Other Transferred Financial Assets

In the second quarter of 2020, the Canadian Government launched the Canada Emergency Business Account Program as part of its response to COVID-19, in which we issued loans that are funded by the government. We determined these loans qualify for derecognition, as substantially all the risks and rewards were transferred; therefore, we do not recognize these loans in our Consolidated Balance Sheet.

Securities Lent or Sold Under Repurchase Agreements

Securities lent or sold under repurchase agreements represent short-term funding transactions in which we sell securities that we own and simultaneously commit to repurchase the same securities at a specified price on a specified date in the future. We retain substantially all the risks and rewards associated with the securities and we continue to recognize them in our Consolidated Balance Sheet, with the obligation to repurchase these securities recorded as secured borrowing transactions at the amount owing. The carrying value of these securities approximates the carrying value of the associated liabilities due to their short-term nature. As at October 31, 2021, the carrying values of securities lent and securities sold under repurchase agreements were $9,662 million and $87,894 million, respectively ($7,696 million and $80,962 million, respectively, as at October 31, 2021). The interest expense related to these liabilities is recorded on an accrual basis in interest expense, other liabilities, in our Consolidated Statement of Income.

Note 7: Structured Entities

We enter into certain transactions in the ordinary course of business which involve the establishment of SEs to facilitate or secure customer transactions and to obtain alternate sources of funding. We are required to consolidate a SE if we control the entity. We control a SE when we have power over the SE, exposure to variable returns as a result of our involvement, and the ability to exercise power to affect the amount of our returns.

In assessing whether we control a SE, we consider the entire arrangement to determine the purpose and design of the SE, the nature of any rights held through contractual arrangements, and whether we are acting as principal or agent.

We perform a reassessment of consolidation if facts and circumstances indicate that there have been changes to one or more of the elements of control over the SE. In the event such reassessment results in a loss of control, we will de-recognize the related assets (including goodwill), liabilities, and non-controlling interest at their carrying amounts and recognize any consideration received or retained interest at fair value with any differential recognized as gain or loss in our Consolidated Statement of Income. Information regarding our basis of consolidation is included in Note 1.

Consolidated Structured Entities

Bank Securitization Vehicles

We use securitization vehicles to securitize our Canadian credit card loans, Canadian real estate lines of credit, Canadian auto loans and U.S. equipment loans in order to obtain alternate sources of funding. The structure of these vehicles limits the activities they can undertake and the types of assets they can hold, and the vehicles have limited decision-making authority. The vehicles issue term asset-backed securities (ABS) to fund their activities. We control and consolidate these vehicles, as we have the key decision-making powers necessary to obtain the majority of the benefits of their activities.

The following table presents the carrying amounts and fair values of transferred assets that did not qualify for derecognition and the associated liabilities issued by our bank securitization vehicles:

(Canadian $ in millions)	**2021**		2020	
	Carrying amount (1)	**Fair value**	Carrying amount (1)	Fair value
Assets				
Credit cards	**7,106**	**7,106**	6,825	6,825
Consumer instalment and other personal (2)	**5,228**	**5,238**	6,291	6,312
Business and government	**250**	**253**	484	484
Total	**12,584**	**12,597**	13,600	13,621
Associated liabilities (3)	**7,278**	**7,341**	8,272	8,416

(1) Carrying amount of loans is net of allowance.
(2) Includes real estate lines of credit and auto loans.
(3) Associated liabilities are recognized in Securitization and structured entities' liabilities in our Consolidated Balance Sheet.

U.S. Customer Securitization Vehicle

We sponsor one customer securitization vehicle, Fairway Financial Company LLC, (also referred to as a bank-sponsored multi-seller conduit) that provides our customers with alternate sources of funding through the securitization of their assets. This vehicle provides clients with access to financing in the asset-backed commercial paper (ABCP) markets by allowing them to either sell their assets directly into the vehicle or indirectly by selling an interest in the securitized assets into the vehicle, which then issues ABCP to investors in order to fund the purchases. The sellers remain responsible for servicing the transferred assets and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO. We earn fees for providing services related to the securitizations, including liquidity, distribution and financial arrangement fees for supporting the ongoing operations of the vehicle. Effective October 31, 2021, we concluded we no longer control this vehicle and have deconsolidated our investment, as our relationship has changed from principal to agent as reflected primarily in the change to our exposure to variable returns. We derecognized $3,896 million of assets and $3,672 million of liabilities from our consolidated balance sheet on loss of control. We concurrently recognized $218 million in Securities, representing the carrying value of our interest in the vehicle, and $6 million in Other Assets. No gain or loss was recognized in our consolidated income statement as a result of deconsolidating this entity.

We provide committed liquidity support facilities to this vehicle, which may require that we provide additional financing to the vehicle in the event that certain events occur. The total committed undrawn amount under these facilities as at October 31, 2021 was $8,095 million ($7,340 million as at October 31, 2020).

Our interest in this vehicle as at October 31, 2021 has been included in the Unconsolidated Structured Entities table below.

Capital and Funding Vehicles

We sponsor the Trust established in connection with the issuance of $1,250 million 4.3% Limited Recourse Capital Notes Series 1 (LRCN), which holds $1,250 million of BMO issued Non-cumulative, 5-year Rate Reset Class B Preferred Shares, Series 48 (Non-Viability Contingent Capital (NVCC)), issued concurrently with the LRCN. We determined that we control and therefore consolidate this vehicle as we are exposed to its variable returns and have key decision-making powers over its activities. Refer to Note 16 for further information.

We have a funding vehicle, created under the covered bond program, that was established to guarantee payments due to bondholders on bonds issued by us. We sell assets to this funding vehicle in exchange for an intercompany loan. Refer to Note 13 for further information on our covered bond deposit liabilities.

We may also use capital vehicles to transfer our credit exposure on certain loan assets. We purchase credit protection against eligible credit events from these vehicles. The vehicles collateralize their obligation through the issuance of guarantee-linked notes. Loan assets are not sold or assigned to the vehicles and remain on our Consolidated Balance Sheet. During the year, we redeemed all guaranteed linked notes issued by these vehicles. Consequently, as at October 31, 2021, $nil of guaranteed linked notes issued by these vehicles were included in deposits in our Consolidated Balance Sheet ($120 million at October 31, 2020).

For those vehicles that purchase assets from us or are designed to pass on our credit risk, we have determined that, based on the rights of the arrangements or through our equity interest, we have significant exposure to the variable returns of the vehicles, and we control and therefore consolidate these vehicles. Additional information related to notes issued by, and assets sold to, these vehicles is provided in Notes 13 and 24, respectively.

Other

We have other consolidated structured entities, created to meet the bank's and customers needs. Aside from the exposure resulting from our involvement as a sponsor, the bank does not have other contractual or non-contractual arrangements to provide financial support to these consolidated structured entities.

Unconsolidated Structured Entities

The table below presents amounts related to our interests in unconsolidated SEs:

(Canadian $ in millions)	2021			2020		
	Canadian and U.S. customer securitization vehicles (1) (3)	**Capital vehicles**	**Other securitization vehicles**	Canadian customer securitization vehicles (1)	Capital vehicles	Securitization vehicles
Interests recorded on our Consolidated Balance Sheet						
Cash and cash equivalents	**63**	**1,210**	**–**	46	1,173	–
Trading securities	**24**	**–**	**58**	75	–	72
FVTPL securities	**218**	**–**	**–**	158	–	–
FVOCI securities	**464**	**–**	**–**	291	–	–
Amortized cost securities	**–**	**–**	**93**	–	–	102
Derivatives	**2**	**–**	**–**	22	–	–
Other	**5**	**–**	**–**	–	39	–
	776	**1,210**	**151**	592	1,212	174
Deposits	**63**	**1,210**	–	46	1,173	–
Other	**–**	**22**	–	–	25	–
Exposure to loss (2)	**14,208**	**–**	**151**	7,015	1	174
Total assets of the entities	**8,116**	**1,234**	**5,686**	5,265	1,198	2,560

(1) Securities held that are issued by our Canadian and U.S. customer securitization vehicles are comprised of asset-backed commercial paper and are classified as trading securities, FVTPL securities and FVOCI securities.
(2) Exposure to loss represents securities held, undrawn liquidity facilities, any remaining unfunded committed amounts to the BMO funded vehicle, derivative assets and other assets.
(3) Includes the U.S. customer securitization vehicle, Fairway Financial Company LLC, which was deconsolidated on a prospective basis during fiscal 2021.

Canadian Customer Securitization Vehicles
We sponsor customer securitization vehicles (also referred to as bank-sponsored multi-seller conduits) that provide our customers with alternate sources of funding through the securitization of their assets. These vehicles provide clients with access to financing either from BMO or in the ABCP markets by allowing them to either sell their assets directly into the vehicle or indirectly by selling an interest in the securitized assets into the vehicle, which then issues ABCP to either investors or BMO to fund the purchases. The sellers remain responsible for servicing the transferred assets and are first to absorb any losses realized on those assets. We are not responsible for servicing or absorbing the first loss and none of the sellers are affiliated with BMO. We earn fees for providing services related to the securitizations, including liquidity, distribution and financial arrangement fees for supporting the ongoing operations of the vehicles. We have determined that we do not control these entities, as their key relevant activity, the servicing of program assets, does not reside with us.

We provide liquidity facilities to the market-funded vehicles, which may require that we provide additional financing to the vehicles in the event that certain events occur. The total committed and undrawn amount under these liquidity facilities and any undrawn amounts of the BMO funded vehicle as at October 31, 2021 was $5,400 million ($6,469 million as at October 31, 2020).

Capital Vehicles
We also use capital vehicles to pass our credit risk to security holders of the vehicles. In these situations, we are not exposed to significant default or credit risk. Our remaining exposure to variable returns is less than that of the note holders in these vehicles, who are exposed to our default and credit risk. We are not required to consolidate these vehicles.

Other Securitization Vehicles
Other securitization vehicles include holdings in asset-backed securitizations. Where we sponsor SEs that securitize MBS into CMOs, we may have interests through our holdings of CMOs but do not consolidate the SEs as we do not have power to direct their relevant activities. These include government-sponsored agency securities such as U.S. government agency issuances. In determining whether we are a sponsor of a SE, we consider both qualitative and quantitative factors, including the purpose and nature of the entity, and our initial and continuing involvement. Subsequent to the securitization, we sell the CMOs to third parties. Our maximum exposure to loss is limited to our on-balance sheet investments in these entities, included in the table above.

Where the asset-backed instruments in these securitizations are transferred to third parties, but we retain substantially all risks and rewards related to the transferred assets, we continue to recognize the transferred assets with the related cash proceeds recognized as secured financing in our Consolidated Balance Sheet. As at October 31, 2021, these transferred assets were carried at fair value totalling $53 million ($69 million as at October 31, 2020) with $nil million ($nil million as at October 31, 2020) recognized in securitization and structured entities' liabilities, also carried at fair value.

Where the asset-backed instruments in these securitizations are transferred to third parties and qualify for derecognition, we record the related gains or losses in non-interest revenue, trading revenues. We may also retain an interest in the CMOs sold, which represents our continuing involvement. As at October 31, 2021, we held retained interests of $5 million ($3 million as at October 31, 2020) carried at fair value on our Consolidated Balance Sheet.

During the year ended October 31, 2021, we sold $2,549 million of MBS to these sponsored securitization vehicles ($5,797 million in 2020), where we divested all interests in the securitized MBSs and any gains and losses were recorded in non-interest revenue, trading revenues.

BMO Managed Funds
We have established a number of funds that we also manage. We assess whether or not we control these funds based on the economic interest we have in the funds, including investments in the funds and management fees earned from the funds, and any investors' rights to remove us as investment manager. We only consolidate those funds that we control. Our total interest in unconsolidated BMO managed funds was $1,345 million at October 31, 2021 ($1,718 million in 2020), with $321 million included in FVTPL securities and $1,024 million included in trading securities as at October 31, 2021 ($444 million and $1,274 million, respectively, in 2020) in our Consolidated Balance Sheet.

Other Structured Entities
We purchase and hold investments in a variety of third-party SEs, including exchange-traded funds, mutual funds, limited partnerships investment trusts and government-sponsored ABS vehicles, which are recorded in securities in our Consolidated Balance Sheet. We are considered to have an interest in these investments through our holdings and because we may act as a counterparty in certain derivatives contracts. We are not the investment manager or the sponsor of any of these investments. We are generally a passive investor and do not have power over the key decision-making activities of these investments. Our maximum exposure to loss from our investments is limited to the carrying amounts of our investments and any unutilized commitment we have provided.

Sponsored Structured Entities
We may be deemed to be the sponsor of a SE if we are involved in its design, legalset-up or marketing. We may also be deemed to be the sponsor of a SE if market participants would reasonably associate the entity with us. Any interests in securitization vehicles we have sponsored are disclosed in the interests in unconsolidated structured entities table above.

Financial Support Provided to Structured Entities
During the years ended October 31, 2021 and 2020, we did not provide any financial ornon-financial support to any consolidated or unconsolidated SEs when we were not contractually obligated to do so. Furthermore, we have no intention of providing such support in the future.

Note 8: Derivative Instruments

Derivative instruments are financial contracts that derive their value from underlying changes in interest rates, foreign exchange rates or other financial or commodity prices or indices.

Derivative instruments are either regulated exchange-traded contracts or negotiated over-the-counter contracts. We use these instruments for trading purposes, as well as to manage our exposures, mainly to foreign currency and interest rate fluctuations, as part of our asset/liability management program.

Types of Derivatives

Swaps

Swaps are contractual agreements between two parties to exchange a series of cash flows. The various swap agreements that we enter into are as follows:

- Interest rate swaps – counterparties generally exchange fixed and floating rate interest payments based on a notional value in a single currency.
- Cross-currency swaps – fixed rate interest payments and principal amounts are exchanged in different currencies.
- Cross-currency interest rate swaps – fixed and/or floating rate interest payments and principal amounts are exchanged in different currencies.
- Commodity swaps – counterparties generally exchange fixed and floating rate payments based on a notional value of a single commodity.
- Equity swaps – counterparties exchange the return on an equity security or a group of equity securities for the return based on a fixed or floating interest rate or the return on another equity security or group of equity securities.
- Credit default swaps – one counterparty pays the other a fee in exchange for that other counterparty agreeing to make a payment if a credit event occurs, such as bankruptcy or failure to pay.
- Total return swaps – one counterparty agrees to pay or receive from the other cash amounts based on changes in the value of a reference asset or group of assets, including any returns such as interest earned on these assets, in exchange for amounts that are based on prevailing market funding rates.

Forwards and Futures

Forwards and futures are contractual agreements to either buy or sell a specified amount of a currency, commodity, interest rate-sensitive financial instrument or security at a specified price and date in the future.

Forwards are customized contracts transacted in the over-the-counter market. Futures are transacted in standardized amounts on regulated exchanges and are subject to daily cash margining.

Options

Options are contractual agreements that convey to the purchaser the right but not the obligation to either buy or sell a specified amount of a currency, commodity, interest-rate-sensitive financial instrument or security at a fixed future date or at any time within a fixed future period.

For options written by us, we receive a premium from the purchaser for accepting market risk.

For options purchased by us, we pay a premium for the right to exercise the option. Since we have no obligation to exercise the option, our primary exposure to risk is the potential credit risk if the writer of an over-the-counter contract fails to meet the terms of the contract.

Caps, collars and floors are specialized types of written and purchased options. They are contractual agreements in which the writer agrees to pay the purchaser, based on a specified notional amount, the difference between the market rate and the prescribed rate of the cap, collar or floor. The writer receives a premium for selling this instrument.

A swaption is an option granting its owner the right but not the obligation to enter into an underlying swap.

A futures option is an option contract in which the underlying instrument is a single futures contract.

The main risks associated with these derivative instruments are related to exposure to movements in interest rates, foreign exchange rates, credit quality, value of the underlying financial instrument or commodity, as applicable, and the possible inability of counterparties to meet the terms of the contracts.

Embedded Derivatives

From time to time, we purchase or issue financial instruments containing embedded derivatives. The embedded derivative in a financial liability is separated from the host contract and carried at fair value if the economic characteristics of the derivative are not closely related to those of the host contract, the terms of the embedded derivative are the same as those of a stand-alone derivative, and the combined contract is not measured at fair value. To the extent that we cannot reliably identify and measure the embedded derivative, the entire contract is carried at fair value, with changes in fair value reflected in income. Embedded derivatives in certain of our equity linked notes are accounted for separately from the host instrument.

Contingent Features

Certain over-the-counter derivative instruments contain provisions that link the amount of collateral we are required to post or pay to our credit ratings as determined by the major credit rating agencies. If our credit ratings were to be downgraded, certain counterparties to these derivative instruments could demand immediate and ongoing collateralization on derivative liability positions or request immediate payment. The aggregate fair value of all derivative instruments with collateral posting requirements that were in a liability position as at October 31, 2021 was $4,537 million ($6,560 million as at October 31, 2020), for which we have posted collateral of $3,921 million ($5,967 million in 2020).

Risks Hedged

Interest Rate Risk

We manage interest rate risk through interest rate futures, interest rate swaps and options, which are linked to and adjust the interest rate sensitivity of a specific asset, liability, forecasted transaction or firm commitment, or a specific pool of transactions with similar risk characteristics.

Foreign Currency Risk

We manage foreign currency risk through currency futures, foreign currency options, cross-currency swaps, foreign exchange spot transactions, forward contracts and deposits denominated in foreign currencies.

Equity Price Risk

We manage equity price risk through total return swaps.

Trading Derivatives

Trading derivatives include derivatives entered into with customers to accommodate their risk management needs, market-making to facilitate customer-driven demand for derivatives, derivatives transacted on a limited basis to generate trading income from our principal trading positions, and certain derivatives that we enter into as part of our risk management strategy that do not qualify as hedges for accounting purposes ("economic hedges").

We structure and market derivative products to enable customers to transfer, modify or reduce current or expected exposure to risks.

Principal trading activities include market-making and positioning activities. Market-making involves quoting bid and offer prices to other market participants with the intention of generating revenues based on spread and volume. Positioning activities involve managing market risk positions with the expectation of profiting from favourable movements in prices, rates or indices.

Trading derivatives are recorded at fair value. Realized and unrealized gains and losses are generally recorded in non-interest revenue, trading revenues, in our Consolidated Statement of Income. Unrealized gains and losses on derivatives used to economically hedge certain exposures may be recorded in the Consolidated Statement of Income in the same line as the unrealized gains and losses arising from the exposures. Unrealized gains on trading derivatives are recorded as derivative instrument assets and unrealized losses are recorded as derivative instrument liabilities in our Consolidated Balance Sheet.

We may also economically hedge a portion of our U.S. dollar earnings through forward foreign exchange contracts and/or options to minimize fluctuations in our consolidated net income due to the translation of our U.S. dollar earnings. These contracts are recorded at fair value, with changes in fair value recorded in non-interest revenue, trading revenues, in our Consolidated Statement of Income.

Fair Value of Trading and Hedging Derivatives

Fair value represents point-in-time estimates that may change in subsequent reporting periods due to market conditions or other factors. A discussion of the fair value measurement of derivatives is included in Note 17.

Fair values of our derivative instruments are as follows:

(Canadian $ in millions)	2021			2020		
	Gross assets	**Gross liabilities**	**Net**	Gross assets	Gross liabilities	Net
Trading						
Interest Rate Contracts						
Swaps	**6,132**	**(4,323)**	**1,809**	10,510	(7,585)	2,925
Forward rate agreements	**42**	**(105)**	**(63)**	29	(276)	(247)
Purchased options	**641**	**–**	**641**	667	–	667
Written options	**–**	**(520)**	**(520)**	–	(714)	(714)
Futures	**–**	**(3)**	**(3)**	3	(18)	(15)
Foreign Exchange Contracts (1)						
Cross-currency swaps	**1,438**	**(1,207)**	**231**	2,080	(1,428)	652
Cross-currency interest rate swaps	**8,595**	**(5,827)**	**2,768**	4,151	(4,207)	(56)
Forward foreign exchange contracts	**3,505**	**(3,925)**	**(420)**	3,611	(2,954)	657
Purchased options	**381**	**–**	**381**	346	–	346
Written options	**–**	**(384)**	**(384)**	–	(312)	(312)
Commodity Contracts						
Swaps	**5,916**	**(1,256)**	**4,660**	2,162	(1,733)	429
Purchased options	**1,383**	**–**	**1,383**	373	–	373
Written options	**–**	**(815)**	**(815)**	–	(456)	(456)
Futures	**319**	**(120)**	**199**	53	(144)	(91)
Equity Contracts	**5,998**	**(9,383)**	**(3,385)**	8,461	(6,514)	1,947
Credit Contracts						
Purchased	**–**	**(3)**	**(3)**	11	(6)	5
Written	**–**	**(4)**	**(4)**	–	(8)	(8)
Total fair value – trading derivatives	**34,350**	**(27,875)**	**6,475**	32,457	(26,355)	6,102
Hedging						
Interest Rate Contracts (2)						
Cash flow hedges – swaps	**354**	**(1,166)**	**(812)**	2,602	(43)	2,559
Fair value hedges – swaps	**903**	**(662)**	**241**	1,118	(2,257)	(1,139)
Total swaps	**1,257**	**(1,828)**	**(571)**	3,720	(2,300)	1,420
Foreign Exchange Contracts						
Cash flow hedges	**1,020**	**(1,112)**	**(92)**	638	(1,710)	(1,072)
Fair value hedges	**–**	**–**	**–**	–	(1)	(1)
Net investment hedges	**46**	**–**	**46**	–	–	–
Total foreign exchange contracts	**1,066**	**(1,112)**	**(46)**	638	(1,711)	(1,073)
Equity Contracts						
Cash flow hedges	**40**	**–**	**40**	–	(9)	(9)
Total equity contracts	**40**	**–**	**40**	–	(9)	(9)
Total fair value – hedging derivatives (3)	**2,363**	**(2,940)**	**(577)**	4,358	(4,020)	338
Total fair value – trading and hedging derivatives	**36,713**	**(30,815)**	**5,898**	36,815	(30,375)	6,440
Less: impact of master netting agreements	**(20,952)**	**20,952**	**–**	(19,302)	19,302	–
Total	**15,761**	**(9,863)**	**5,898**	17,513	(11,073)	6,440

(1) Gold contracts are included with foreign exchange contracts.
(2) We held no bond futures as at October 31, 2021 (the fair value of bond futures designated in fair value hedge relationships rounded down to $1 as at October 31, 2020).
(3) The fair values of hedging derivatives wholly or partially offset the changes in fair values of the related on-balance sheet financial instruments.

Assets are shown net of liabilities to customers where we have a legally enforceable right to offset amounts and we intend to settle contracts on a net basis.

Notional Amounts of Trading Derivatives

The notional amounts of our derivatives represent the amount to which a rate or price is applied in order to calculate the amount of cash that must be exchanged under the contract. Notional amounts do not represent assets or liabilities and therefore are not recorded in our Consolidated Balance Sheet.

(Canadian $ in millions)	2021			2020		
	Exchange traded	**Over-the-counter**	**Total**	Exchange traded	Over-the-counter	Total
Interest Rate Contracts						
Swaps	**–**	**3,976,428**	**3,976,428**	–	4,148,257	4,148,257
Forward rate agreements	**–**	**147,657**	**147,657**	–	517,332	517,332
Purchased options	**10,611**	**69,491**	**80,102**	24,683	57,833	82,516
Written options	**3,621**	**68,155**	**71,776**	3,796	64,728	68,524
Futures	**232,972**	**–**	**232,972**	297,578	–	297,578
Total interest rate contracts	**247,204**	**4,261,731**	**4,508,935**	326,057	4,788,150	5,114,207
Foreign Exchange Contracts (1)						
Cross-currency swaps	**–**	**45,482**	**45,482**	–	47,805	47,805
Cross-currency interest rate swaps	**–**	**506,791**	**506,791**	–	534,752	534,752
Forward foreign exchange contracts	**–**	**489,081**	**489,081**	–	494,640	494,640
Purchased options	**1,762**	**54,145**	**55,907**	1,673	39,067	40,740
Written options	**4,735**	**54,147**	**58,882**	2,346	41,327	43,673
Futures	**222**	**–**	**222**	1,608	–	1,608
Total foreign exchange contracts	**6,719**	**1,149,646**	**1,156,365**	5,627	1,157,591	1,163,218
Commodity Contracts						
Swaps	**–**	**28,892**	**28,892**	–	30,613	30,613
Purchased options	**10,020**	**4,526**	**14,546**	4,846	5,728	10,574
Written options	**11,000**	**3,132**	**14,132**	6,514	3,704	10,218
Futures	**39,448**	**–**	**39,448**	39,011	–	39,011
Total commodity contracts	**60,468**	**36,550**	**97,018**	50,371	40,045	90,416
Equity Contracts	**106,302**	**98,962**	**205,264**	110,274	60,202	170,476
Credit Contracts						
Purchased	**–**	**12,358**	**12,358**	–	7,407	7,407
Written	**–**	**5,158**	**5,158**	–	1,795	1,795
Total	**420,693**	**5,564,405**	**5,985,098**	492,329	6,055,190	6,547,519

(1) Gold contracts are included with foreign exchange contracts.

Table excludes loan commitment derivatives with notionals of $5,613 million ($2,603 million as at October 31, 2020).

Derivatives Used in Hedge Accounting

In accordance with our risk management strategy, we enter into various derivative contracts to hedge our interest rate, foreign currency and equity price exposures. We also use deposits, cross-currency swaps and foreign exchange forwards to hedge foreign currency exposure in our net investment in foreign operations.

When the hedged item is accounted for at FVTPL, there is a natural offset within the income statement with the related derivative. However, when we manage risks incumbent in instruments that are accounted for at amortized cost, including loans and deposits, or FVOCI debt securities we use hedge accounting in order to eliminate the mismatch between the hedged item and the mark to market derivative.

To the extent these instruments used to manage risk qualify for hedge accounting, we designate them in accounting hedge relationships. Our structural market risk strategies, including our approach to managing interest rate and foreign exchange risk, are included in the blue-tinted font in the Structural (Non-Trading) Market Risk section of Management's Discussion and Analysis within this report. In addition, our exposure to foreign exchange rate risk is discussed in the Foreign Exchange Risk section of Management's Discussion and Analysis. Our exposure to equity price risk and our approach to managing it are discussed in the Other Share-Based Compensation, Mid-Term Incentive Plans section of Note 20.

By using derivatives to hedge exposures to interest rates, foreign currency exchange rates, and equity prices, we are also exposed to the credit risk of the derivative counterparty. We mitigate credit risk by entering into transactions with high-quality counterparties, requiring the counterparties to post collateral, entering into master netting agreements, or settling through centrally cleared counterparties.

In order to qualify as an accounting hedge, the hedging relationship must be designated and formally documented at its inception, detailing the particular risk management objective and strategy for the hedge and the specific asset, liability or cash flow being hedged, as well as how effectiveness is to be assessed. Changes in the fair value of the derivative must be highly effective in offsetting changes in the fair value or changes in the amount of future cash flows of the hedged item. We evaluate hedge effectiveness at the inception of the hedging relationship and on an ongoing basis, retrospectively and prospectively, primarily using a quantitative statistical regression analysis. We consider a hedging relationship highly effective when all of the following criteria are met: correlation between the variables in the regression is at least 0.8; the slope of the regression is within a 0.8 to 1.25 range; and the confidence level of the slope is at least 95%. The practice is different for our net investment hedge, discussed in the Net Investment Hedges section below.

Any ineffectiveness in the hedging relationship is recognized as it arises in non-interest revenue, other, in our Consolidated Statement of Income.

Under the IASB's Phase 1 Amendments to IAS 39 and IFRS 7, certain hedge accounting requirements were modified to provide relief from the uncertainty arising from IBOR reform during the period prior to replacement of IBORs. These amendments include allowing us to assume the interest rate benchmarks which are the basis for cash flows of the hedged item and hedging instrument are not altered as a result of IBOR reform, thereby allowing hedge accounting to continue. They also provide an exception from the requirement to discontinue hedge accounting if a hedging relationship does not meet the effectiveness requirements solely as a result of IBOR reform. We continue to apply these amendments as at October 31, 2021, with application ending at the earlier of the discontinuation of the impacted hedging relationship and when there is no longer uncertainty arising from IBOR reform over the timing and amount of IBOR-based cash flows.

The following table outlines the notional amounts, and average rates of derivatives and the carrying amounts of deposits designated as hedging instruments, by term to maturity, hedge type, and risk type, where applicable.

		Remaining term to maturity					2021	2020
(Canadian $ in millions, except as noted)		Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	Total	Total
Cash Flow Hedges								
Interest rate risk – Interest rate swaps								
Notional amount (1)		**24,639**	**24,172**	**18,145**	**25,733**	**1,463**	**94,152**	92,296
Average fixed interest rate		**0.60%**	**1.20%**	**1.15%**	**1.26%**	**1.68%**	**1.06%**	1.39%
Foreign exchange risk – Cross-currency swaps and foreign exchange forwards (2)								
CAD-USD pair (3)	Notional amount	**6,668**	**17,446**	**7,091**	**6,836**	**251**	**38,292**	43,381
	Average fixed interest rate	**1.67%**	**2.33%**	**1.43%**	**1.53%**	**3.02%**	**1.91%**	1.92%
	Average exchange rate: CAD-USD	**1.3031**	**1.3283**	**1.2606**	**1.3420**	**1.3122**	**1.3137**	1.3219
CAD-EUR pair	Notional amount	**3,843**	**8,634**	**–**	**1,839**	**201**	**14,517**	17,299
	Average fixed interest rate	**2.60%**	**1.91%**	**–**	**1.89%**	**2.97%**	**2.10%**	2.17%
	Average exchange rate: CAD-EUR	**1.5382**	**1.5025**	**–**	**1.4711**	**1.4870**	**1.5078**	1.5008
Other currency pairs	Notional amount (4)	**1,908**	**3,673**	**4,474**	**–**	**–**	**10,055**	7,104
	Average fixed interest rate	**2.51%**	**2.76%**	**2.03%**	**–**	**–**	**2.39%**	2.63%
	Average exchange rate: CAD-Non USD/EUR	**1.4245**	**1.2229**	**1.6710**	**–**	**–**	**1.4606**	1.2923
Equity price risk – Total return swap								
Notional amount		**515**	**–**	**–**	**–**	**–**	**515**	302
Fair Value Hedges								
Interest rate risk – Interest rate swaps								
Notional amount (5)		**11,740**	**30,534**	**19,555**	**16,777**	**2,105**	**80,711**	94,738
Average fixed interest rate		**0.97%**	**1.30%**	**1.18%**	**1.20%**	**1.71%**	**1.21%**	1.47%
Interest rate risk – Bond futures (exchange-traded derivatives)								
Notional amount		**–**	**–**	**–**	**–**	**–**	**–**	48
Average price in dollars		**–**	**–**	**–**	**–**	**–**	**–**	126
Foreign exchange risk – Cross-currency swaps								
USD-GBP pair	Notional amount (6)	**–**	**–**	**–**	**–**	**–**	**–**	39
	Average fixed interest rate	**–**	**–**	**–**	**–**	**–**	**–**	0.66%
	Average exchange rate: USD-GBP	**–**	**–**	**–**	**–**	**–**	**–**	1.3024
Net Investment Hedges								
Foreign exchange risk – Cross-currency swaps and foreign exchange forwards								
CAD-GBP pair	Notional amount	**153**	**1,132**	**–**	**–**	**–**	**1,285**	–
Foreign exchange risk – Deposit liabilities								
USD denominated deposit – carrying amount		**5,964**	**–**	**–**	**–**	**–**	**5,964**	8,219
GBP denominated deposit – carrying amount		**728**	**–**	**–**	**–**	**–**	**728**	892

(1) The notional amount of the interest rate swaps likely subject to IBOR reform that mature after June 30, 2023 was $35,519 million of USD LIBOR as at October 31, 2021. We had a notional amount of $48,825 million as at October 31, 2020, likely subject to IBOR reform that were to mature after December 31, 2021, the cessation date at the time of adoption of the Phase 1 amendments.

(2) Under certain hedge strategies using cross-currency swaps, a CAD leg is inserted to create two swaps designated as separate hedges (for example, a EURO-USD cross-currency swap split into EURO-CAD and CAD-USD cross-currency swaps). The relevant notional amount is grossed up in this table, as the cross-currency swaps are disclosed by CAD-foreign currency pair.

(3) Includes CAD-AUD, CAD-CHF, CAD-CNH, CAD-GBP or CAD-HKD cross-currency swaps where applicable.

(4) The notional amount of the cross-currency swaps likely subject to IBOR reform that mature after December 31, 2021 was $718 million of GBP LIBOR as at October 31, 2021 ($718 million as at October 31, 2020).

(5) The notional amount of the interest rate swaps likely subject to IBOR reform that mature after June 30, 2023 was $43,642 million of USD LIBOR. We had a notional amount of $55,130 million of USD LIBOR as at October 31, 2020, likely subject to IBOR reform that were to mature after December 31, 2021, the cessation date at the time of adoption of the Phase 1 amendments. The notional amount of GBP LIBOR interest rate swaps that mature after December 31, 2021 was $nil million as at October 31, 2021 ($41 million as at October 31, 2020).

(6) The notional amount of the cross-currency swaps likely subject to IBOR reform that mature after June 30, 2023 was $nil million of USD LIBOR as at October 31, 2021. We had a notional amount of $89 million of USD LIBOR as at October 31, 2020, likely subject to IBOR reform that were to mature after December 31, 2021, the cessation date at the time of adoption of the Phase 1 amendments.

Cash Flow Hedges

Cash flow hedges modify exposure to variability in cash flows for variable interest rate bearing instruments, foreign currency denominated assets and liabilities and certain cash-settled share-based payment grants subject to equity price risk. We use interest rate swaps with or without embedded options, cross-currency swaps, and total return swaps to hedge this variability. We hedge the full amount of foreign exchange risk, but interest rate risk is hedged only to the extent of benchmark interest rates. The benchmark interest rate is a component of interest rate risk that is observable in the relevant financial markets, for example LIBOR or Bankers' Acceptances (BA) rate.

We determine the amount of the exposure to which hedge accounting is applied by assessing the potential impact of changes in interest rates, foreign exchange rates, and equity prices on the future cash flows of floating rate loans and deposits, foreign currency denominated assets and liabilities and certain cash-settled share-based payments. This assessment is performed using analytical techniques, such as simulation, sensitivity analysis, stress testing and gap analysis.

We record interest that we pay or receive on these cash flow hedge derivatives as an adjustment to net interest income in our Consolidated Statement of Income over the life of the hedge.

The accounting mismatch that would otherwise occur is eliminated by recording changes in the fair value of the derivative that offset changes in the fair value of the hedged item for the designated hedged risk in other comprehensive income. Hedge ineffectiveness, the portion of the change in fair value of the derivative that does not offset changes in the fair value of the hedged item, is recorded directly in non-interest revenue, other, in our Consolidated Statement of Income as it arises.

For cash flow hedges that are discontinued before the end of the original hedge term, the cumulative unrealized gain or loss recorded in other comprehensive income is amortized to our Consolidated Statement of Income in net interest income for interest rate swaps and in employee compensation for total return swaps as the hedged item is recorded in earnings. The entire unrealized gain or loss is recognized immediately in net interest income in our Consolidated Statement of Income, if the hedged item is sold or settled. In general, we do not terminate our foreign exchange hedges before maturity.

For cash flow hedges, we use a hypothetical derivative to measure the hedged risk of floating rate loans, deposits, foreign currency denominated assets and liabilities, or share-based payment grants. This hypothetical derivative matches the critical terms of the hedged items identically, and it perfectly offsets the hedged cash flow.

In our cash flow hedge relationships, the main sources of ineffectiveness are differences in interest rate indices, tenor and reset/settlement frequencies between the hedging instrument and the hedged item.

Net Investment Hedges

Net investment hedges mitigate our exposure to foreign currency exchange rate fluctuations related to our net investment in foreign operations.

Deposits denominated in foreign currencies, cross-currency swaps and foreign exchange forwards are designated as a hedging instrument for a portion of the net investment in foreign operations. We designate the spot rate component of our hedging instrument in net investment hedge. The foreign currency translation of our net investment in foreign operations and the effective portion of the corresponding hedging instrument are recorded in unrealized gains (losses) on translation of net foreign operations in other comprehensive income, instead of through the income statement in the case of the hedging instrument if hedge accounting were not elected.

The effectiveness of our net investment hedge is determined using the dollar offset method with spot foreign currency rates. As the notional amount of the hedging instruments and the hedged net investment in foreign operations are the same, there is no source of ineffectiveness in these hedging relationships.

For cash flow hedges and net investment hedges, the following tables contain information related to items designated as hedging instruments, hedged items and hedge ineffectiveness for the years ended October 31, 2021 and October 31, 2020.

(Canadian $ in millions)

	Carrying amount of hedging instruments (1)		Hedge ineffectiveness		
2021	**Asset**	**Liability**	**Gains (losses) on hedging derivatives used to calculate hedge ineffectiveness (2)**	**Gains (losses) on hypothetical derivatives used to calculate hedge ineffectiveness (2)**	**Ineffectiveness recorded in non-interest revenue – other**
Cash Flow Hedges					
Interest rate risk – Interest rate swaps	**354**	**(1,166)**	**(2,467)**	**2,447**	**(5)**
Foreign exchange risk – Cross-currency swaps and foreign exchange forwards	**1,020**	**(1,112)**	**276**	**(276)**	**–**
Equity price risk – Total return swaps	**40**	**–**	**313**	**(313)**	**–**
	1,414	**(2,278)**	**(1,878)**	**1,858**	**(5)**
Net Investment Hedges					
Foreign exchange risk – Cross–currency swaps and foreign exchange forwards	**46**	**–**	**29**	**(29)**	**–**
Foreign exchange risk – Deposit liabilities	**–**	**(6,692)**	**647**	**(647)**	**–**
Total	**1,460**	**(8,970)**	**(1,202)**	**1,182**	**(5)**

2020					
Cash Flow Hedges					
Interest rate risk – Interest rate swaps	2,602	(43)	2,516	(2,520)	4
Foreign exchange risk – Cross-currency swaps and foreign exchange forwards	638	(1,710)	(315)	315	–
Equity price risk – Total return swaps	–	(9)	(108)	108	–
	3,240	(1,762)	2,093	(2,097)	4
Net Investment Hedges					
Foreign exchange risk – Cross-currency swaps and foreign exchange forwards					
Foreign exchange risk – Deposit liabilities	–	(9,111)	(131)	131	–
Total	3,240	(10,873)	1,962	(1,966)	4

(1) Represents the unrealized gains (losses) recorded as part of the derivative instruments in assets and liabilities, respectively, in our Consolidated Balance Sheet.
(2) Represents life to date amounts.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

For cash flow hedges and net investment hedges, the following tables contain information related to impacts in our Consolidated Statement of Comprehensive Income, on a pre-tax basis for the years ended October 31, 2021 and October 31, 2020.

(Canadian $ in millions) **2021**

	Balance October 31, 2020	**Gains / (losses) recognized in OCI**	**Amount reclassified to net income as the hedged item affects net income**	**Balance October 31, 2021** (1)	**Balance in cash flow hedge AOCI / net foreign operations AOCI**	
					Active hedges	**Discontinued hedges**
Cash Flow Hedges						
Interest rate risk	3,529	**(2,462)**	**(489)**	**578**	**(921)**	**1,499**
Foreign exchange risk	(759)	**266**	**10**	**(483)**	**(483)**	**–**
Equity price risk	(50)	**313**	**(84)**	**179**	**179**	**–**
	2,720	**(1,883)**	**(563)**	**274**	**(1,225)**	**1,499**
Net Investment Hedges						
Foreign exchange risk	(1,939)	**676**	**–**	**(1,263)**	**(1,263)**	**–**
Total	781	**(1,207)**	**(563)**	**(989)**	**(2,488)**	**1,499**

(Canadian $ in millions) 2020

	Balance October 31, 2019	Gains / (losses) recognized in OCI	Amount reclassified to net income as the hedged item affects net income	Balance October 31, 2020 (1)	Balance in cash flow hedge AOCI / net foreign operations AOCI	
					Active hedges	Discontinued hedges
Cash Flow Hedges						
Interest rate risk	1,156	2,512	(139)	3,529	2,359	1,170
Foreign exchange risk	(444)	(350)	35	(759)	(759)	–
Equity price risk	17	(108)	41	(50)	(50)	–
	729	2,054	(63)	2,720	1,550	1,170
Net Investment Hedges						
Foreign exchange risk	(1,808)	(131)	–	(1,939)	(1,939)	–
Total	(1,079)	1,923	(63)	781	(389)	1,170

(1) Tax balance related to cash flow hedge accumulated other comprehensive income was $(389) million, and $(741) million as at October 31, 2020.

Fair Value Hedges

Fair value hedges modify exposure to changes in a fixed rate instrument's fair value caused by changes in interest rates. These hedges economically convert fixed rate assets and liabilities to floating rate. We use cross-currency swaps, interest rate swaps, and bond futures to hedge interest rate risk, including benchmark interest rates, inherent in fixed rate securities, a portfolio of mortgages, deposits and subordinated debt and other liabilities.

The carrying value of fixed rate assets or liabilities that are part of a hedging relationship are adjusted for the change in value of the risk being hedged. To the extent that the change in the fair value of the derivative does not offset changes in the fair value of the hedged item for the risk being hedged, the net amount (hedge ineffectiveness) is recorded directly in non-interest revenue, other, in our Consolidated Statement of Income.

For fair value hedges that are discontinued, we cease adjusting the hedged item. The cumulative fair value adjustment of the hedged item is then amortized to net interest income over the hedged item's remaining term to maturity. If the hedged item is sold or settled, the cumulative fair value adjustment is included in the gain or loss on sale or settlement.

In our fair value hedge relationships, the main sources of ineffectiveness are our own credit risk on the fair value of the swap, and the difference in terms such as fixed interest rate or reset/settlement frequency between the swap and the hedged item.

The amounts relating to derivatives designated as fair value hedging instruments, hedged items and hedge ineffectiveness for the years ended October 31, 2021 and 2020 are as follows:

(Canadian $ in millions)

	Carrying amount of hedging derivatives (1)		Hedge ineffectiveness				Accumulated amount of fair value hedge gains (losses) on hedged items	
2021	**Asset**	**Liability**	**Gains (losses) on hedging derivatives used to calculate hedge ineffectiveness**	**Gains (losses) on hedged item used to calculate hedge ineffectiveness**	**Ineffectiveness recorded in non-interest revenue – other**	**Carrying amount of the hedged item (2)**	**Active hedges**	**Discontinued hedges**
Fair Value Hedge (3)								
Interest rate swaps	**903**	**(662)**	**–**	**–**	**–**	**–**	**–**	**–**
Cross-currency swaps	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Securities and loans	**–**	**–**	**1,649**	**(1,654)**	**(5)**	**49,789**	**156**	**62**
Deposits, subordinated debt and other liabilities	**–**	**–**	**(644)**	**638**	**(6)**	**(31,530)**	**(121)**	**(91)**
Total	**903**	**(662)**	**1,005**	**(1,016)**	**(11)**	**18,259**	**35**	**(29)**

2020								
Fair Value Hedge (3)								
Interest rate swaps	1,118	(2,257)	–	–	–	–	–	–
Cross-currency swaps	–	(1)	–	–	–	–	–	–
Securities and loans	–	–	(1,791)	1,794	3	58,608	2,762	25
Deposits, subordinated debt and other liabilities	–	–	622	(620)	2	(39,950)	(943)	8
Total	1,118	(2,258)	(1,169)	1,174	5	18,658	1,819	33

(1) Represents the unrealized gains (losses) within derivative instruments in assets and liabilities, respectively, in the Consolidated Balance Sheet.
(2) Represents the carrying value in the Consolidated Balance Sheet and includes amortized cost, before allowance for credit losses, plus fair value hedge adjustments, except for FVOCI securities that are carried at fair value.
(3) $nil for bond futures designated in fair value hedge relationships as at October 31, 2021 (all amounts in the table round down to $1 as at October 31, 2020).

Derivative-Related Market Risk

Derivative instruments are subject to market risk. Market risk arises from the potential for a negative impact on the balance sheet and/or statement of income due to adverse changes in the value of derivative instruments as a result of changes in certain market variables. These variables include interest rates, credit spreads, foreign exchange rates, equity and commodity prices and their implied volatilities, credit migration and default. We strive to limit market risk by employing comprehensive governance and management processes for all market risk-taking activities.

Derivative-Related Credit Risk

Derivative instruments are subject to credit risk arising from the possibility that counterparties may default on their obligations. The credit risk associated with a derivative is normally a small fraction of the notional amount of the derivative instrument. Derivative contracts generally expose us to potential credit loss if changes in market rates affect the counterparty's position unfavourably and the counterparty defaults on payment. The credit risk is represented by the positive fair value of the derivative instrument. We strive to limit credit risk by dealing with counterparties that we believe are creditworthy, and we manage our credit risk for derivatives using the same credit risk process that is applied to loans and other credit assets.

We also pursue opportunities to reduce our exposure to credit losses on derivative instruments, through collateral and by entering into master netting agreements with counterparties. The credit risk associated with favourable contracts is mitigated by legally enforceable master netting agreements to the extent that unfavourable contracts with the same counterparty must be settled concurrently with favourable contracts.

Exchange-traded derivatives have limited potential for credit exposure, as they are settled net daily with each exchange.

Terms used in the credit risk tables below are as follows:

Replacement cost captures the loss that would occur if a counterparty were to default in the present or at a future time, assuming that the closeout and replacement of transactions occur instantaneously, assuming no recovery on the value of those transactions in bankruptcy.

Credit risk equivalent represents the total replacement cost plus an amount representing the potential future credit exposure adjusted by a multiplier 1.4, as outlined in OSFI's Capital Adequacy Guideline.

Risk-weighted assets represent the credit risk equivalent, weighted on the basis of the creditworthiness of the counterparty, and considering collateral, netting and other credit risk mitigants, as prescribed by OSFI.

(Canadian $ in millions)	2021			2020		
	Replacement cost (1)	**Credit risk equivalent** (1)	**Risk-weighted assets**	Replacement cost (1)	Credit risk equivalent (1)	Risk-weighted assets
Interest Rate Contracts						
Over-the-counter						
Swaps	**2,636**	**6,936**	**1,422**	5,228	10,713	3,380
Forward rate agreements	**667**	**2,545**	**826**	1,153	3,332	1,479
Purchased options	**16**	**72**	**81**	2	55	12
Written options	**20**	**105**	**70**	68	206	150
	3,339	**9,658**	**2,399**	6,451	14,306	5,021
Exchange traded						
Futures	**71**	**141**	**3**	22	83	2
Purchased options	**2**	**4**	**–**	45	66	1
Written options	**2**	**4**	**–**	3	4	–
	75	**149**	**3**	70	153	3
Total interest rate contracts	**3,414**	**9,807**	**2,402**	6,521	14,459	5,024
Foreign Exchange Contracts (2)						
Over-the-counter						
Swaps	**1,087**	**4,609**	**987**	872	5,581	794
Forward foreign exchange contracts	**769**	**6,649**	**883**	1,032	7,859	823
Purchased options	**93**	**270**	**104**	68	196	95
Written options	**11**	**115**	**38**	5	76	27
	1,960	**11,643**	**2,012**	1,977	13,712	1,739
Exchange traded						
Futures	**1**	**2**	**–**	1	2	–
Purchased options	**15**	**22**	**–**	12	17	–
Written options	**26**	**37**	**1**	12	18	–
	42	**61**	**1**	25	37	–
Total foreign exchange contracts	**2,002**	**11,704**	**2,013**	2,002	13,749	1,739
Commodity Contracts						
Over-the-counter						
Swaps	**4,357**	**8,183**	**2,148**	1,424	4,215	2,119
Purchased options	**1,537**	**2,601**	**457**	117	746	257
Written options	**6**	**175**	**51**	1	234	74
	5,900	**10,959**	**2,656**	1,542	5,195	2,450
Exchange traded						
Futures	**1,829**	**3,244**	**65**	635	1,612	33
Purchased options	**474**	**721**	**14**	373	562	11
Written options	**463**	**727**	**15**	221	363	7
	2,766	**4,692**	**94**	1,229	2,537	51
Total commodity contracts	**8,666**	**15,651**	**2,750**	2,771	7,732	2,501
Equity Contracts						
Over-the-counter	**467**	**9,754**	**2,663**	563	8,010	2,399
Exchange traded	**3,873**	**7,938**	**159**	5,958	10,135	203
Total equity contracts	**4,340**	**17,692**	**2,822**	6,521	18,145	2,602
Credit Contracts	**277**	**721**	**79**	272	741	75
Total	**18,699**	**55,575**	**10,066**	18,087	54,826	11,941

(1) Replacement cost and credit risk equivalent are presented after the impact of master netting agreements and calculated using the Standardized Approach for Counterparty Credit Risk (SA-CCR) in accordance with the Capital Adequacy Requirements (CAR) Guideline issued by OSFI. Table therefore excludes loan commitment derivatives.
(2) Gold contracts are included in foreign exchange contracts.

Term to Maturity

Our derivative contracts have varying maturity dates. The remaining contractual terms to maturity for the notional amounts of our derivative contracts are set out below:

(Canadian $ in millions)	Term to maturity					2021	2020
	Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	Total notional amounts	Total notional amounts
Interest Rate Contracts							
Swaps	**1,421,335**	**1,162,256**	**710,856**	**657,830**	**199,014**	**4,151,291**	4,335,291
Forward rate agreements, futures and options	**350,532**	**138,390**	**25,879**	**14,969**	**2,737**	**532,507**	965,998
Total interest rate contracts	**1,771,867**	**1,300,646**	**736,735**	**672,799**	**201,751**	**4,683,798**	5,301,289
Foreign Exchange Contracts (1)							
Swaps	**137,841**	**196,488**	**121,635**	**110,545**	**32,824**	**599,333**	637,501
Forward foreign exchange contracts	**474,834**	**13,016**	**1,341**	**208**	**27**	**489,426**	494,640
Futures	**213**	**9**	**–**	**–**	**–**	**222**	1,608
Options	**104,031**	**8,799**	**1,959**	**–**	**–**	**114,789**	84,413
Total foreign exchange contracts	**716,919**	**218,312**	**124,935**	**110,753**	**32,851**	**1,203,770**	1,218,162
Commodity Contracts							
Swaps	**12,709**	**14,622**	**1,495**	**66**	**–**	**28,892**	30,613
Futures	**20,577**	**17,258**	**1,540**	**73**	**–**	**39,448**	39,011
Options	**16,358**	**11,936**	**384**	**–**	**–**	**28,678**	20,792
Total commodity contracts	**49,644**	**43,816**	**3,419**	**139**	**–**	**97,018**	90,416
Equity Contracts	**141,028**	**48,206**	**14,534**	**1,780**	**232**	**205,780**	170,778
Credit Contracts (2)	**298**	**866**	**9,635**	**6,325**	**392**	**17,516**	9,202
Total notional amount	**2,679,756**	**1,611,846**	**889,258**	**791,796**	**235,226**	**6,207,882**	6,789,847

(1) Gold contracts are included with foreign exchange contracts.
(2) Under the SA-CCR, excludes loan commitment derivatives.

Note 9: Premises and Equipment

We record all owned premises and equipment at cost less accumulated depreciation, and less any accumulated impairment, except land, which is recorded at cost. Buildings, computer equipment and operating system software, other equipment and leasehold improvements are depreciated on a straight-line basis over their estimated useful lives. When the major components of a building have different useful lives, they are accounted for separately and depreciated over each component's estimated useful life. The maximum estimated useful lives we use to depreciate our assets are as follows:

Buildings	10 to 40 years
Computer equipment and operating system software	5 to 7 years
Other equipment	10 years
Leasehold improvements	Lease term to a maximum of 10 years

Depreciation methods, useful lives and the residual values of premises and equipment are reviewed annually for any change in circumstances and are adjusted if appropriate. At each reporting period, we review whether there are any indications that premises and equipment need to be tested for impairment. If there is an indication that an asset may be impaired, we test for impairment by comparing the asset's carrying value to its recoverable amount. The recoverable amount is calculated as the higher of the value in use and the fair value less costs to sell. Value in use is the present value of the future cash flows expected to be derived from the asset. An impairment charge is recorded when the recoverable amount is less than the carrying value. There were write-downs of premises and equipment of $36 million due to impairment during the year ended October 31, 2021 ($4 million in 2020 and $nil in 2019). Gains and losses on disposal are included in non-interest expense, premises and equipment, in our Consolidated Statement of Income.

Leases

When we enter into a new arrangement as a lessee, a right-of-use asset is recognized equal to the lease liability, which is calculated based on the future lease payments discounted at our incremental borrowing rate over the lease term. The lease term is based on the non-cancellable period and includes any options to extend or terminate which we are reasonably certain to exercise.

The right-of-use asset is depreciated on a straight-line basis, based on the shorter of the useful life of the underlying asset or the lease term, and is adjusted for impairment losses, if any.

The lease liability accretes interest over the lease term, using the effective interest method, with the associated interest expense recognized in interest expense, other liabilities, in our Consolidated Statement of Income. The lease liability is remeasured when decisions are made to exercise options under the lease arrangement or when the likelihood of exercising an option within the lease changes. Refer to Note 14 for further information.

Amounts relating to leases of low value are expensed when incurred in non-interest expense, premises and equipment, in our Consolidated Statement of Income.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Prior to the adoption of IFRS 16, net rent expense reported in non-interest expense, premises and equipment, in our Consolidated Statement of Income for the year ended October 31, 2019 was $600 million.

The total cost and associated accumulated depreciation for premises and equipment owned and leased are set out below:

(Canadian $ in millions)	2021							2020						
	Land	Buildings	Computer equipment	Other equipment	Leasehold improvements	Right-of-use assets (1)	Total	Land	Buildings	Computer equipment	Other equipment	Leasehold improvements	Right-of-use assets (1)	Total
Cost														
Balance at beginning of year	112	1,454	2,481	904	1,769	2,580	9,300	109	1,534	2,470	973	1,615	na	6,701
Impact from adopting IFRS 16 (1) (2)	–	–	–	–	–	–	–	–	(23)	(65)	–	–	2,053	1,965
Additions/lease modifications	–	52	193	53	192	731	1,221	8	53	168	41	167	559	996
Disposals (3)	(6)	(44)	(349)	(245)	(44)	(29)	(717)	(6)	(116)	(104)	(122)	(28)	(22)	(398)
Foreign exchange and other	(7)	(108)	(33)	(27)	24	(81)	(232)	1	6	12	12	15	(10)	36
Balance at end of year	99	1,354	2,292	685	1,941	3,201	9,572	112	1,454	2,481	904	1,769	2,580	9,300
Accumulated Depreciation and Impairment														
Balance at beginning of year	–	936	1,888	680	1,250	363	5,117	–	961	1,786	742	1,157	na	4,646
Impact from adopting IFRS 16 (1) (2)	–	–	–	–	–	–	–	–	–	(27)	–	–	27	–
Disposals (3)	–	(46)	(345)	(245)	(41)	(29)	(706)	–	(93)	(100)	(120)	(25)	(22)	(360)
Depreciation	–	52	217	51	105	366	791	–	64	218	52	107	360	801
Foreign exchange and other (4)	–	(75)	(36)	(15)	24	18	(84)	–	4	11	6	11	(2)	30
Balance at end of year	–	867	1,724	471	1,338	718	5,118	–	936	1,888	680	1,250	363	5,117
Net carrying value	99	487	568	214	603	2,483	4,454	112	518	593	224	519	2,217	4,183

(1) Effective November 1, 2019, we adopted IFRS 16 *Leases*, recognizing the cumulative effect of adoption in opening retained earnings with no changes to prior periods (refer to Note 1).
(2) Includes net book value of buildings transferred to right-of-use assets.
(3) Includes fully depreciated assets written off.
(4) Includes impairment charges.
na - notapplicable due to IFRS 16 adoption.

Note 10: Acquisitions and Divestitures

Acquisitions

The cost of an acquisition is measured at the fair value of the consideration transferred, including contingent consideration. Acquisition-related costs are recognized as an expense in the period in which they are incurred. The identifiable assets acquired and liabilities assumed and contingent consideration are measured at their fair values at the date of acquisition. Goodwill is measured as the excess of the aggregate of the consideration transferred over the net of the fair value of identifiable assets acquired and liabilities assumed. The results of operations of acquired businesses are included in our consolidated financial statements beginning on the date of acquisition.

Clearpool Group Inc.
On April 6, 2020, we completed the acquisition of Clearpool Group Inc. (Clearpool), a New York-based provider of electronic trading solutions, operating in the United States and Canada, for cash consideration of US$139 million (CAD$196 million) plus contingent consideration of approximately US$7 million (CAD$11 million) based on meeting certain revenue targets over four years. The acquisition was accounted for as a business combination, and the acquired business and corresponding goodwill are included in our Capital Markets reporting segment.

As part of this acquisition, we acquired intangible assets of $85 million and goodwill of $132 million. The intangible assets are being amortized over three to eight years. Goodwill related to this acquisition is not deductible for tax purposes.

The fair values of the assets acquired and liabilities assumed at the date of acquisition are as follows:

(Canadian $ in millions)	Clearpool
Goodwill and intangible assets	217
Other assets	44
Total assets	261
Liabilities	54
Purchase price	207

The purchase price allocation for Clearpool has been completed.

Divestitures

Non-current non-financial assets (and disposal groups) are classified as held-for-sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. These assets meet the criteria for classification as held-for-sale if they are available for immediate sale in their present condition and their sale is considered highly probable to occur within one year. Non-current non-financial assets classified as held-for-sale are measured at the lower of their carrying amount and fair value less costs to sell. Any subsequent write-down to fair value less costs to sell is recognized in non-interest expense in our Consolidated Statement of Income. Any subsequent increase in the fair value less costs to sell, to the extent this does not exceed the cumulative write-down or impact the impairment previously allocated to goodwill, is also recognized in non-interest expense. Gains on disposals are recognized in non-interest income.

Private Bank, Asia
On April 30, 2021, we completed the sale of our Private Banking business in Hong Kong and Singapore, part of our BMO Wealth Management operating segment, to J. Safra Sarasin Group. The business sold is not considered material to the bank.

EMEA and U.S. Asset Management
On November 8, 2021, we completed the sale of our EMEA asset management business, part of our BMO Wealth Management operating segment, to Ameriprise Financial Inc. (Ameriprise) for £615 million (CAD$1,042 million) in an all-cash transaction. The transaction with Ameriprise includes the opportunity for certain BMO asset management clients in the U.S. to move to Ameriprise, with the transfers expected to be completed in the first calendar quarter of fiscal 2022, subject to client consent. As this transaction met the accounting requirements of assets held-for-sale, whereby the assets and liabilities are measured at lower of fair value, less costs to sell, and carrying value at each reporting period end until disposal, we recognized a write-down of goodwill related to these businesses of $779 million in fiscal 2021. The write-down was included in non-interest expense, other, in our Consolidated Statement of Income and was reported in the Corporate Services segment. As at November 8, 2021, assets and liabilities of approximately $1,696 million and $527 million, respectively, in relation to our EMEA asset management business have been derecognized. In connection with the completion of the sale, we will recognize a loss of $28 million in the first quarter of fiscal 2022 relating to foreign currency translation reclassified from accumulated other comprehensive income in equity to net income.

Taplin, Canida & Habacht LLC
On July 27, 2021, we entered into an agreement to sell Taplin, Canida & Habacht, LLC, part of our U.S. asset management business to Loop Capital. The transaction is expected to close in the first quarter of fiscal 2022, subject to customary closing conditions. The business sold is not considered material to the bank.

Note 11: Goodwill and Intangible Assets

Goodwill

When we complete an acquisition, we allocate the purchase price paid to the assets acquired, including identifiable intangible assets, and the liabilities assumed. Any portion of the consideration transferred that is in excess of the fair value of those net assets is considered to be goodwill. Goodwill is not amortized and is instead tested for impairment annually.

In performing the impairment test, we utilize the fair value less costs to sell for each group of CGUs based on discounted cash flow projections. Cash flows were projected for the first 10 years based on actual operating results, expected future business performance and past experience. Beyond 10 years, cash flows were assumed to grow at perpetual annual rates of up to 3.0% (2.5% in 2020). The discount rates we applied in determining the recoverable amounts in 2021 ranged from 6.8% to 11.0% (6.0% to 10.3% in 2020), and were based on our estimate of the cost of capital for each CGU. The cost of capital for each CGU was estimated using the Capital Asset Pricing Model, based on the historical betas of publicly traded peer companies that are comparable to the CGU. We use significant judgment to determine inputs to the discounted cash flow model, which are most sensitive to changes in future cash flows, discount rates and terminal growth rates applied to cash flows beyond the forecast period.

The key assumptions described above may change as market and economic conditions change. However, we estimate that reasonably possible changes in these assumptions are not expected to cause the recoverable amounts of our CGUs to decline below their carrying amounts.

We recognized a write-down of goodwill of $779 million during the year ended October 31, 2021 ($nil in 2020) due to the valuation implied from the definitive agreement to sell our EMEA asset management business to Ameriprise and management's allocation of goodwill to the business being sold. Refer to Note 10 for further information.

A continuity of our goodwill by group of CGUs for the years ended October 31, 2020 and 2021 is as follows:

(Canadian $ in millions)	Personal and Commercial Banking			BMO Wealth Management			BMO Capital Markets	Total
	Canadian P&C	U.S. P&C	Total	Traditional Wealth Management	Insurance	Total		
Balance – October 31, 2019	97	3,796	3,893	2,145	2	2,147	300	6,340
Acquisitions during the year	–	–	–	–	–	–	132	132
Foreign exchange and other (1)	–	45	45	23	–	23	(5)	63
Balance – October 31, 2020	97	3,841	3,938	2,168	2	2,170	427	6,535
Dispositions during the year	–	–	–	(21)	–	(21)	–	(21)
Foreign exchange and other (1)	–	(274)	(274)	(837)	–	(837)	(25)	(1,136)
Balance – October 31, 2021	**97** (2)	**3,567** (3)	**3,664**	**1,310** (4)	**2** (5)	**1,312**	**402** (6)	**5,378**

(1) Other changes in goodwill included the effects of translating goodwill denominated in foreign currencies into Canadian dollars and purchase accounting adjustments related to prior-year purchases.
(2) Relates primarily to bcpbank Canada, Diners Club, Aver Media LP and GE Transportation Finance.
(3) Relates primarily to First National Bank & Trust, Ozaukee Bank, Merchants and Manufacturers Bancorporation, Inc., Diners Club, AMCORE, M&I and GE Transportation Finance.
(4) Relates to BMO Nesbitt Burns Inc., Guardian Group of Funds Ltd., Pyrford International Limited, LGM Investments Limited, M&I, myCFO, Inc., Stoker Ostler Wealth Advisors, Inc., CTC Consulting LLC, and F&C Asset Management plc. Included in Foreign exchange and other is a write-down of $779 million of goodwill attributable to the sale of our EMEA asset management business. Refer to Note 10.
(5) Relates to AIG.
(6) Relates to Gerard Klauer Mattison, BMO Nesbitt Burns Inc., Paloma Securities L.L.C., M&I, Greene Holcomb FisherKGS-Alpha Capital Markets and Clearpool.

Intangible Assets

Intangible assets related to our acquisitions are initially recorded at their fair value at the acquisition date and subsequently at cost less accumulated amortization. Software is recorded at cost less accumulated amortization. Amortization expense is recorded in amortization of intangible assets in our Consolidated Statement of Income. The following table presents the changes in the balance of these intangible assets:

(Canadian $ in millions)	Customer relationships	Core deposits	Software – amortizing	Software under development	Other	Total
Cost as at October 31, 2019	760	951	4,836 (1)	402	638	7,587
Additions (disposals)	–	–	(20)	458	(17)	421
Transfers	–	–	582	(582)	–	–
Foreign exchange and other	7	11	18 (1)	2	–	38
Cost as at October 31, 2020	767	962	5,416	280	621	8,046
Additions (disposals)	**(9)**	**–**	**(248)**	**426**	**2**	**171**
Transfers	**–**	**–**	**498**	**(498)**	**–**	**–**
Foreign exchange and other	**(39)**	**(68)**	**(118)**	**(4)**	**(22)**	**(251)**
Cost as at October 31, 2021	**719**	**894**	**5,548** (1)	**204**	**601**	**7,966**

(1) Includes $4,798 million of internally generated software as at October 31, 2021 ($4,458 million as at October 31, 2020).

The following table presents the accumulated amortization of our intangible assets:

(Canadian $ in millions)	Customer relationships	Core deposits	Software – amortizing	Software under development	Other	Total
Accumulated amortization at October 31, 2019	551	878	3,361 (1)	–	373	5,163
Amortization	52	46	478	–	44	620
Disposals	–	–	(173)	–	(38)	(211)
Foreign exchange and other	13	9	15	–	(5)	32
Accumulated amortization at October 31, 2020	616	933	3,681 (1)	–	374	5,604
Amortization	**35**	**27**	**530**	**–**	**42**	**634**
Disposals	**(5)**	**–**	**(308)**	**–**	**(28)**	**(341)**
Foreign exchange and other	**(30)**	**(66)**	**(82)**	**–**	**(19)**	**(197)**
Accumulated amortization at October 31, 2021	**616**	**894**	**3,821** (1)	**–**	**369**	**5,700**
Carrying value at October 31, 2021	**103**	**–**	**1,727**	**204**	**232**	**2,266**
Carrying value at October 31, 2020	151	29	1,735	280	247	2,442

(1) Includes $3,231 million of internally generated software as at October 31, 2021 ($2,909 million as at October 31, 2020).

Intangible assets are amortized to income over the period during which we believe the assets will benefit us, on either a straight-line or an accelerated basis, over a period not to exceed 15 years. We have $166 million as at October 31, 2021 ($172 million as at October 31, 2020) in intangible assets with indefinite lives that relate primarily to fund management contracts.

The useful lives of intangible assets are reviewed annually for any changes in circumstances. We test definite-life intangible assets for impairment when events or changes in circumstances indicate that their carrying value may not be recoverable. Indefinite-life intangible assets are tested annually for impairment. If any intangible assets are determined to be impaired, we write them down to their recoverable amount, the higher of value in use and fair value less costs to sell.

There were write-downs of software-related intangible assets of $9 million during the year ended October 31, 2021 ($5 million in 2020 and $10 million in 2019).

Note 12: Other Assets

Customers' Liability Under Acceptances

Acceptances represent a form of negotiable short-term debt issued by our customers, which we guarantee for a fee. The fees earned are recorded in non-interest revenue, lending fees in our Consolidated Statement of Income over the term of the acceptance. The amount potentially due under acceptances is recorded in other liabilities in our Consolidated Balance Sheet. We record the bank's equivalent claim against our customers in the event of a call on these commitments in other assets in our Consolidated Balance Sheet.

Other

The components of other within other assets are as follows:

(Canadian $ in millions)	2021	2020
Accounts receivable, prepaid expenses and other items	**3,302**	2,942
Accrued interest receivable	**1,452**	1,586
Bank owned life insurance policies	**4,096**	4,352
Leased vehicles, net of accumulated amortization	**415**	677
Cash collateral	**6,436**	6,344
Due from clients, dealers and brokers	**353**	161
Insurance-related assets	**2,080**	1,507
Other employee future benefits assets (Note 21)	**40**	38
Pension asset (Note 21)	**947**	124
Precious metals (1)	**3,290**	5,328
Total	**22,411**	23,059

(1) Precious metals are recorded at their fair value based on quoted prices in active markets.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Note 13: Deposits

(Canadian $ in millions)	Payable on demand: Interest bearing	Payable on demand: Non-interest bearing	Payable after notice	Payable on a fixed date (3)	2021	2020
Deposits by:						
Banks (1)	**5,009**	**1,887**	**733**	**18,982**	**26,611**	38,825
Business and government	**50,779**	**54,740**	**148,682**	**188,047**	**442,248**	400,679
Individuals	**4,895**	**36,679**	**119,425**	**55,773**	**216,772**	219,530
Total (2) (4)	**60,683**	**93,306**	**268,840**	**262,802**	**685,631**	659,034
Booked in:						
Canada	**51,465**	**83,952**	**129,370**	**162,529**	**427,316**	407,926
United States	**8,929**	**9,284**	**138,267**	**76,350**	**232,830**	220,292
Other countries	**289**	**70**	**1,203**	**23,923**	**25,485**	30,816
Total	**60,683**	**93,306**	**268,840**	**262,802**	**685,631**	659,034

(1) Includes regulated and central banks.
(2) Includes structured notes and metal deposits designated at FVTPL.
(3) Includes $35,959 million of senior unsecured debt as at October 31, 2021 subject to the Bank Recapitalization(Bail-In) regime ($25,651 million as at October 31, 2020). The Bail-In regime provides certain statutory powers to the Canada Deposit Insurance Corporation, including the ability to convert specified eligible shares and liabilities into common shares if the bank becomes non-viable.
(4) Included in deposits as at October 31, 2021 and 2020 are $342,967 million and $322,951 million, respectively, of deposits denominated in U.S. dollars, and $29,937 million and $32,254 million, respectively, of deposits denominated in other foreign currencies.

Deposits payable on demand are comprised primarily of our customers' chequing accounts, on some of which we pay interest. Our customers need not notify us prior to withdrawing money from their chequing accounts. Deposits payable after notice are comprised primarily of our customers' savings accounts, on which we pay interest. Deposits payable on a fixed date are comprised of:

- Various investment instruments purchased by our customers to earn interest over a fixed period, such as retail and small business term deposits, wholesale funding, and guaranteed investment certificates. Deposits totalling $20,991 million as at October 31, 2021 ($27,353 million as at October 31, 2020) can be early redeemed (either fully or partially) by customers without penalty. As we do not expect a significant amount to be redeemed before maturity, we have classified them as payable on a fixed date, based on their remaining contractual maturities.
- Commercial paper, which totalled $13,834 million as at October 31, 2021 ($8,358 million as at October 31, 2020).
- Covered bonds, which totalled $23,495 million as at October 31, 2021 ($24,699 million as at October 31 2020).

The following table presents the maturity schedule for deposits payable on a fixed date:

(Canadian $ in millions)	Within 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	Over 5 years	Total
As at October 31, 2021	**163,370**	**33,778**	**24,826**	**8,908**	**11,995**	**19,925**	**262,802**
As at October 31, 2020	192,617	27,855	30,053	18,260	9,683	13,164	291,632

We have unencumbered liquid assets of $317,251 million to support these and other deposit liabilities ($306,120 million as at October 31, 2020).

The following table presents deposits payable on a fixed date and greater than one hundred thousand dollars:

(Canadian $ in millions)	Canada	United States	Other	Total
As at October 31, 2021	**140,002**	**72,399**	**23,921**	**236,322**
As at October 31, 2020	158,475	72,186	27,799	258,460

The following table presents the maturity schedule for deposits payable on a fixed date and greater than one hundred thousand dollars, which are booked in Canada:

(Canadian $ in millions)	Less than 3 months	3 to 6 months	6 to 12 months	Over 12 months	Total
As at October 31, 2021	**20,626**	**12,761**	**20,933**	**85,682**	**140,002**
As at October 31, 2020	18,081	29,679	28,109	82,606	158,475

Structured Note Liabilities

Most of our structured note liabilities included in deposits have been designated at fair value through profit or loss, which aligns the accounting result with the way the portfolio is managed. The change in fair value of these structured notes is recorded in non-interest revenue, trading revenues with the changes in fair value due to own credit risk recognized in other comprehensive income. The impact of changes in our own credit risk is measured based on movements in our own credit spread year over year.

The following table presents fair value and changes in fair value of structured note liabilities:

(Canadian $ in millions)	Fair value	Notional amount due at contractual maturity	Change in fair value recorded in the Consolidated Statement of Income (1)	Change in fair value due to own credit risk recorded in OCI (before tax)	Cumulative change in fair value due to own credit risk recorded in AOCI (before tax)
As at October 31, 2021	**22,665**	**22,448**	**(1,310)**	**(240)**	**(408)**
As at October 31, 2020	18,073	19,175	1,319	(26)	(168)

(1) Change in fair value may be offset by related change in fair value on hedge contracts.

Note 14: Other Liabilities

Acceptances

Acceptances represent a form of negotiable short-term debt that is issued by our customers, which we guarantee for a fee. The fees earned are recorded in non-interest revenue, lending fees in our Consolidated Statement of Income over the term of the acceptance. The amount potentially due under acceptances is recorded in other liabilities in our Consolidated Balance Sheet. We record the bank's equivalent claim against our customers in the event of a call on these commitments in other assets in our Consolidated Balance Sheet.

Securities Lending and Borrowing

Securities lending and borrowing transactions are generally collateralized by securities or cash. Cash advanced or received as collateral is recorded in securities borrowed or purchased under resale agreements, or other liabilities, securities lent or sold under repurchase agreements, respectively. Interest earned on cash collateral is recorded in interest, dividend and fee income in our Consolidated Statement of Income, and interest expense on cash collateral is recorded in interest expense, other liabilities, in our Consolidated Statement of Income. The transfer of the securities to counterparties is only reflected in our Consolidated Balance Sheet if the risks and rewards of ownership have also been transferred. Securities borrowed are not recognized in our Consolidated Balance Sheet unless they are then sold to third parties, in which case the obligation to return the securities is recorded at fair value in securities sold but not yet purchased, with any gains or losses recorded in non-interest revenue, trading revenues.

Securities Sold But Not Yet Purchased

Securities sold but not yet purchased represent our obligations to deliver securities that we did not own at the time of sale. These obligations are recorded at their fair value. Adjustments to the fair value as at the balance sheet date and gains and losses on the settlement of these obligations are recorded in trading revenues in our Consolidated Statement of Income.

Securitization and Structured Entities' Liabilities

Securitization and structured entities' liabilities include notes issued by our consolidated bank securitization vehicles and liabilities associated with the securitization of our Canadian mortgage loans as part of the Canada Mortgage Bond program, the National Housing Act Mortgage-Backed Securities program and our own programs. Additional information on our securitization programs and associated liabilities is provided in Notes 6 and 7. These liabilities are initially measured at fair value plus any directly attributable costs and are subsequently measured at amortized cost. The interest expense related to these liabilities is recorded in interest expense, other liabilities, in our Consolidated Statement of Income.

Other

The components of other within other liabilities are as follows:

(Canadian $ in millions)	2021	2020
Accounts payable, accrued expenses and other items	**9,444**	8,208
Accrued interest payable	**960**	1,359
Allowance for credit losses on off-balance sheet items	**394**	511
Cash collateral	**6,733**	6,596
Insurance-related liabilities	**12,845**	12,441
Lease liabilities (1)	**2,743**	2,409
Other employee future benefits liability (Note 21)	**1,094**	1,147
Payable to brokers, dealers and clients	**3,413**	2,969
Pension liability (Note 21)	**138**	553
Total	**37,764**	36,193

(1) Effective November 1, 2019, we adopted IFRS 16 *Leases*, recognizing the cumulative effect of adoption in opening retained earnings with no changes to prior periods (Note 1).

Insurance-Related Liabilities

We are engaged in insurance businesses related to life insurance, annuities, which includes pension risk, accident and sickness, creditor insurance, and reinsurance. We designate the obligation related to certain investment contracts in our insurance business at fair value through profit or loss, which eliminates a measurement inconsistency that would otherwise arise from measuring the investment contract liabilities and offsetting changes in the fair value of the investments supporting them on a different basis. The change in fair value of these investment contract liabilities is recorded in insurance claims, commissions and changes in policy benefit liabilities with the exception of changes in our own credit risk recognized in other comprehensive income. The impact of changes in our own credit risk is measured based on movements in our own credit spread year over year. Changes in the fair value of investments backing these investment contract liabilities are recorded in non-interest revenue, insurance revenue.

The following table presents fair value and changes in fair value in our investment contract liabilities.

(Canadian $ in millions)	Fair value	Notional amount due at contractual maturity	Change in fair value recorded in the Consolidated Statement of Income	Change in fair value due to own credit risk recorded in OCI (before tax)	Cumulative change in fair value due to own credit risk recognized in AOCI (before tax)
As at October 31, 2021	**1,046**	**1,526**	**(81)**	**(26)**	**(72)**
As at October 31, 2020	1,168	1,594	88	(12)	(46)

Insurance claims and policy benefit liabilities represent current claims and estimates of future insurance policy benefit liabilities. Liabilities for life insurance contracts are determined using the Canadian Asset Liability Method, which incorporates best-estimate assumptions for mortality, morbidity, policy lapses, surrenders, future investment yields, policy dividends, administration costs and margins for adverse deviation. These assumptions are reviewed at least annually and updated to reflect actual experience and market conditions.

A reconciliation of the change in insurance-related liabilities is as follows:

(Canadian $ in millions)	2021	2020
Insurance-related liabilities, beginning of year	**12,441**	11,581
Increase (decrease) in life insurance policy benefit liabilities from:		
New business	**765**	476
In-force policies	**(306)**	182
Changes in actuarial assumptions and methodology	**(72)**	(58)
Foreign currency	**(2)**	–
Net increase in life insurance policy benefit liabilities	**385**	600
Change in other insurance-related liabilities	**19**	260
Insurance-related liabilities, end of year	**12,845**	12,441

Reinsurance

In the ordinary course of business, our insurance subsidiaries reinsure risks to other insurance and reinsurance companies in order to provide greater diversification, limit loss exposure to large risks, and provide additional capacity for future growth. These ceding reinsurance arrangements do not relieve our insurance subsidiaries of their direct obligation to the insured parties. We evaluate the financial condition of the reinsurers and monitor their credit ratings to minimize our exposure to losses from reinsurer insolvency.

Reinsurance premiums ceded are recorded net against direct premium income and are included in non-interest revenue, insurance revenue, in our Consolidated Statement of Income for the years ended October 31, 2021, 2020 and 2019, as shown in the table below:

(Canadian $ in millions)	2021	2020	2019
Direct premium income	**2,050**	1,582	1,944
Ceded premiums	**(408)**	(154)	(158)
	1,642	1,428	1,786

Lease Liabilities

Beginning November 1, 2019, when we enter into leases we record lease liabilities representing the present value of future lease payments over the lease term. Interest expense recorded on lease liabilities for the year ended October 31, 2021 was $56 million ($53 million in 2020). Total cash outflow for lease liabilities for the year ended October 31, 2021 was $383 million ($384 million in 2020). Variable lease payments (for example maintenance, utilities and property taxes) not included in the measurement of lease liabilities for the year ended October 31, 2021 were $236 million ($219 million in 2020).

The maturity profile of our undiscounted lease liabilities is $344 million for 2022, $325 million for 2023, $315 million for 2024, $287 million for 2025, $252 million for 2026 and $1,600 million for 2027 and thereafter.

Note 15: Subordinated Debt

Subordinated debt represents our direct unsecured obligations to our debt holders, in the form of notes and debentures, and forms part of our regulatory capital. Subordinated debt is recorded at amortized cost using the effective interest rate method. Where appropriate, we enter into fair value hedges to hedge the risks caused by changes in interest rates (see Note 8). The rights of the holders of our notes and debentures are subordinate to the claims of depositors and certain other creditors. We require approval from OSFI before we can redeem any part of our subordinated debt.

The face values, terms to maturity and carrying values of our subordinated debt are as follows:

(Canadian $ in millions, except as noted)	Face value	Maturity date	Interest rate (%)	Redeemable at our option	2021 Total	2020 Total
Debentures Series 20	150	December 2025 to 2040	8.25	Not redeemable	**146**	146
Series H Medium-Term Notes, Second Tranche (1)	1,000	December 2025	3.34	December 2020 (2)	**–**	961
Series I Medium-Term Notes, First Tranche (1)	1,250	June 2026	3.32	June 2021 (3)	**–**	1,242
Series I Medium-Term Notes, Second Tranche (1)	850	June 2027	2.57	June 2022 (4)	**843**	833
3.803% Subordinated Notes due 2032 (1)	US 1,250	December 2032	3.80	December 2027 (5)	**1,567**	1,771
4.338% Subordinated Notes due 2028 (1)	US 850	October 2028	4.34	October 2023 (6)	**1,096**	1,219
Series J Medium-Term Notes, First Tranche (1)	1,000	September 2029	2.88	September 2024 (7)	**998**	996
Series J Medium-Term Notes, Second Tranche (1)	1,250	June 2030	2.08	June 2025 (8)	**1,248**	1,248
Series K Medium-Term Notes, First Tranche (1)(9)	1,000	July 2031	1.93	July 2026 (9)	**995**	–
Total (10)					**6,893**	8,416

(1) These notes include a non-viability contingent capital provision, which is necessary for notes issued after a certain date to qualify as regulatory capital under Basel III. As such, they are convertible into a variable number of our common shares if OSFI announces that the bank is, or is about to become, non-viable or if a federal or provincial government in Canada publicly announces that the bank has accepted or agreed to accept a capital injection, or equivalent support, to avoid non-viability. In such an event, each note is convertible into common shares pursuant to an automatic conversion formula with a multiplier and a conversion price based on the greater of: (i) a floor price of $5.00 and (ii) the current market price of our common shares based on the volume weighted average trading price of our common shares on the TSX. The number of common shares issued is determined by dividing the par value of the note (including accrued and unpaid interest on such note) by the conversion price and then applying the multiplier.

(2) All $1,000 million Series H Medium-Term Notes Second Tranche were redeemed on December 8, 2020 for 100% of the principal amount, plus accrued and unpaid interest to, but excluding, the redemption date.

(3) All $1,250 million Series I Medium-Term Notes First Tranche were redeemed on June 1, 2021 for 100% of the principal amount, plus accrued and unpaid interest to, but excluding, the redemption date.

(4) Redeemable at the greater of par and the Canada Yield Price prior to June 1, 2022, and redeemable at par together with accrued and unpaid interest to, but excluding, their redemption date commencing June 1, 2022.

(5) Redeemable at par on December 15, 2027 together with accrued and unpaid interest to, but excluding, the redemption date.

(6) Redeemable at par on October 5, 2023 together with accrued and unpaid interest to, but excluding, the redemption date.

(7) Redeemable at par on September 17, 2024 together with accrued and unpaid interest to, but excluding, the redemption date.

(8) Redeemable at par on June 17, 2025 together with accrued and unpaid interest to, but excluding, the redemption date.

(9) On July 22, 2021, we issued $1,000 million of Series K Medium-Term Notes, First Tranche. These notes are redeemable at par on July 22, 2026 together with accrued and unpaid interest to, but excluding, the redemption date.

(10) Certain amounts of subordinated debt were issued at a premium or discount and include fair value hedge adjustments, which together increased their carrying value as at October 31, 2021 by $84 million (increased by $119 million in 2020); see Note 8 for further details on hedge adjustments. The carrying value is also adjusted for our subordinated debt holdings, held for market-making purposes.

The aggregate remaining maturities of our subordinated debt, based on the maturity dates under the terms of issue, can be found in the blue-tinted font in the Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments section of Management's Discussion and Analysis within this report.

Note 16: Equity

Preferred and Common Shares Outstanding and Other Equity Instruments

(Canadian $ in millions, except as noted)	2021			2020		
	Number of shares	Amount	Dividends declared per share	Number of shares	Amount	Dividends declared per share
Preferred Shares – Classified as Equity						
Class B – Series 25 (1)	–	–	**0.34**	9,425,607	236	0.45
Class B – Series 26 (1)	–	–	**0.23**	2,174,393	54	0.52
Class B – Series 27	**20,000,000**	**500**	**0.96**	20,000,000	500	0.96
Class B – Series 29	**16,000,000**	**400**	**0.91**	16,000,000	400	0.91
Class B – Series 31	**12,000,000**	**300**	**0.96**	12,000,000	300	0.96
Class B – Series 33	**8,000,000**	**200**	**0.76**	8,000,000	200	0.90
Class B – Series 35 (2)	–	–	–	6,000,000	150	1.25
Class B – Series 36 (2)	–	–	–	600,000	600	58.50
Class B – Series 38	**24,000,000**	**600**	**1.21**	24,000,000	600	1.21
Class B – Series 40	**20,000,000**	**500**	**1.13**	20,000,000	500	1.13
Class B – Series 42	**16,000,000**	**400**	**1.10**	16,000,000	400	1.10
Class B – Series 44	**16,000,000**	**400**	**1.21**	16,000,000	400	1.21
Class B – Series 46	**14,000,000**	**350**	**1.28**	14,000,000	350	1.28
Preferred Shares – Classified as Equity		**3,650**			4,690	
Other Equity Instruments						
4.8% Additional Tier 1 Capital Notes		**658**			658	
4.3% Limited Recourse Capital Notes, Series 1		**1,250**			1,250	
Preferred Shares and Other Equity Instruments		**5,558**			6,598	
Common Shares						
Balance at beginning of year	**645,889,396**	**13,430**		639,232,276	12,971	
Issued under the Shareholder Dividend Reinvestment and Share Purchase Plan	–	–		6,746,237	471	
Issued/cancelled under the Stock Option Plan and other stock-based compensation plans (Note 20)	**1,630,867**	**122**		563,613	40	
Repurchased for cancellation and/or treasury shares sold/purchased (3)(4)	**616,209**	**47**		(652,730)	(52)	
Balance at End of Year	**648,136,472**	**13,599**	**4.24**	645,889,396	13,430	4.24

(1) Series 25 and Series 26 were redeemed and final dividends were paid on August 25, 2021.
(2) Series 35 and Series 36 were redeemed and final dividends were paid on November 25, 2020.
(3) Common shares are net of 36,521 treasury shares as at October 31, 2021 (652,730 treasury shares as at October 31, 2020).
(4) During fiscal 2021 and 2020, we did not purchase any of our common shares under the normal course issuer bid.

Preferred Share Rights and Privileges

(Canadian $, except as noted)

	Redemption amount	Quarterly non-cumulative dividend (1)	Reset premium	Date redeemable / convertible	Convertible to
Class B – Series 27	25.00	$ 0.24075 (2)	2.33%	May 25, 2024 (3)(4)	Class B – Series 28 (5)(6)
Class B – Series 29	25.00	$ 0.2265 (2)	2.24%	August 25, 2024 (3)(4)	Class B – Series 30 (5)(6)
Class B – Series 31	25.00	$0.240688 (2)	2.22%	November 25, 2024 (3)(4)	Class B – Series 32 (5)(6)
Class B – Series 33	25.00	$0.190875 (2)	2.71%	August 25, 2025 (3)(4)	Class B – Series 34 (5)(6)
Class B – Series 38	25.00	$0.303125 (2)	4.06%	February 25, 2022 (3)(4)	Class B – Series 39 (5)(6)
Class B – Series 40	25.00	$ 0.28125 (2)	3.33%	May 25, 2022 (3)(4)	Class B – Series 41 (5)(6)
Class B – Series 42	25.00	$ 0.2750 (2)	3.17%	August 25, 2022 (3)(4)	Class B – Series 43 (5)(6)
Class B – Series 44	25.00	$0.303125 (2)	2.68%	November 25, 2023 (3)(4)	Class B – Series 45 (5)(6)
Class B – Series 46	25.00	$ 0.31875 (2)	3.51%	May 25, 2024 (3)(4)	Class B – Series 47 (5)(6)

(1) Non-cumulative dividends are payable quarterly as and when declared by the Board of Directors.
(2) The dividend rate will reset on the date redeemable and every five years thereafter at a rate equal to the 5-year Government of Canada bond yield plus the reset premium noted. If converted to a floating rate series, the rate will be set as, and when declared, at the 3-month Government of Canada treasury bill yield plus the reset premium noted.
(3) Redeemable on the date noted and every five years thereafter.
(4) Convertible on the date noted and every five years thereafter if not redeemed. If converted, the shares will become floating rate preferred shares.
(5) If converted, the holders have the option to convert back to the original preferred shares on subsequent redemption dates.
(6) The shares issued include a non-viability contingent capital provision, which is necessary for the shares to qualify as regulatory capital under Basel III. Refer to the Non-Viability Contingent Capital paragraph below for details.

On August 25, 2021, we redeemed all of our 9,425,607 issued and outstanding Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 25 for an aggregate total of approximately $236 million and all of our 2,174,393 issued and outstanding Non-Cumulative Floating Rate Class B Preferred Shares, Series 26 for an aggregate total of approximately $54 million.

On November 25, 2020, we redeemed all of our 6 million issued and outstanding Non-Cumulative Perpetual Class B Preferred Shares, Series 35 (Non-Viability Contingent Capital (NVCC)) for an aggregate total of $156 million and all of our 600,000 issued and outstanding Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 36 (NVCC) for an aggregate total of $600 million.

Other Equity Instruments

The $1,250 million 4.3% Limited Recourse Capital Notes Series 1 (LRCN) (NVCC), are classified as equity and form part of our Additional Tier 1 capital. Upon the occurrence of a recourse event, the noteholders will have recourse to assets held in a consolidated trust managed by a third-party trustee. The trust assets are currently comprised of $1,250 million of BMO issued Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 48 (NVCC) (Preferred Shares Series 48) issued concurrently with the LRCN. As the Preferred Shares Series 48 eliminate on consolidation, they do not currently form part of our Additional Tier 1 capital.

The US$500 million 4.8% Additional Tier 1 Capital Notes (AT1 Notes) (NVCC), are also classified as equity and form part of our Additional Tier 1 capital.

The LRCN and AT1 Notes are compound financial instruments that have both equity and liability features. On the date of issuance, we assigned an insignificant value to the liability components of both types of instrument and, as a result, the full amount of proceeds have been classified as equity. Semi-annual distributions on the LRCN and AT1 Notes will be recorded when payable. The LRCN and AT1 Notes are subordinate to the claims of the depositors and certain other creditors in right of payment. The following table shows the details of our AT1 Notes and LRCN as at October 31, 2021 and 2020.

(Canadian $ in millions, except as noted)					2021	2020
	Face value	Interest rate (%)	Redeemable at our option	Convertible to	**Total**	Total
4.8% Additional Tier 1 Capital Notes	US$500	4.8 (1)	August 2024 (2)	Variable number of common shares (3)	658	658
4.3% Limited Recourse Capital Notes	$1,250	4.3 (4)	November 2025 (2)	Variable number of common shares (4)	1,250	1,250
Total					1,908	1,908

(1) Non-cumulative interest is payable semi-annually in arrears, at the bank's discretion.
(2) The notes are redeemable at a redemption price equal to 100% of the principal amount plus any accrued and unpaid interest, in whole or in part, at our option on any interest payment date on or after the first interest reset date or following certain regulatory or tax events. The bank may, at any time, purchase the notes at any price in the open market.
(3) The notes issued include a non-viability contingent capital provision, which is necessary for the notes to qualify as regulatory capital under Basel III. Refer to the Non-Viability Contingent Capital paragraph below for details.
(4) Non-deferrable interest is payable semi-annually on these notes, at the bank's discretion. Non-payment of interest will result in a recourse event, with the noteholders' sole remedy being the holders' proportionate share of trust assets comprised of our NVCC Preferred Shares Series 48. In such an event, the delivery of the trust assets will represent the full and complete extinguishment of our obligations under the LRCN. In circumstances under which non-viability contingent capital, including the Preferred Shares Series 48, would be converted into common shares of the bank (described below), the LRCN would be redeemed, and the noteholders' sole remedy would be their proportionate share of trust assets, then comprised of common shares of the bank received by the trust on conversion of the Preferred Shares Series 48.

Authorized Share Capital

We classify financial instruments that we issue as financial liabilities, equity instruments or compound instruments. Financial instruments that will be settled by a variable number of our common shares upon conversion by the holders are classified as liabilities in our Consolidated Balance Sheet. Dividends and interest payments on financial liabilities are classified as interest expense in our Consolidated Statement of Income. Financial instruments are classified as equity instruments when there is no contractual obligation to transfer cash or other financial assets. Issued instruments that are not mandatorily redeemable, or that are not convertible into a variable number of our common shares at the holder's option, are classified as equity and presented in share capital. Dividend payments on equity instruments are recognized as a reduction in equity.

Common Shares

We are authorized by our shareholders to issue an unlimited number of our common shares, without par value, for unlimited consideration. Our common shares are not redeemable or convertible. Dividends are declared by our Board of Directors at their discretion. Historically, the Board of Directors has declared dividends on a quarterly basis and the amount can vary from quarter to quarter.

Preferred Shares

We are authorized by our shareholders to issue an unlimited number of Class A Preferred Shares and Class B Preferred Shares, without par value, in series, for unlimited consideration. Class B Preferred Shares may be issued in a foreign currency.

Treasury Shares

When we purchase our common shares as part of our trading business, we record the cost of those shares as a reduction in shareholders' equity. If those shares are resold at a price higher than their cost, the premium is recorded as an increase in contributed surplus. If those shares are resold at a price below their cost, the discount is recorded as a reduction first to contributed surplus and then to retained earnings for any amount in excess of the total contributed surplus related to treasury shares.

Non-Viability Contingent Capital

Class B – Series 27, Class B – Series 29, Class B – Series 31, Class B – Series 33, Class B – Series 38, Class B – Series 40, Class B – Series 42, Class B – Series 44 and Class B – Series 46 preferred share issues, the AT1 Notes and, by virtue of the recourse to the Preferred Shares Series 48 the LRCN, include a non-viability contingent capital provision which is necessary for them to qualify as regulatory capital under Basel III. As such, they are convertible into a variable number of our common shares if OSFI announces that the bank is, or is about to become, non-viable or if a federal or provincial government in Canada publicly announces that the bank has accepted, or agreed to accept, a capital injection, or equivalent support, to avoid non-viability. In such an event, each preferred share or other equity instrument is convertible into common shares pursuant to an automatic conversion formula and a conversion price based on the greater of: (i) a floor price of $5.00 and (ii) the current market price of our common shares based on the volume weighted average trading price of our common shares on the TSX. The number of common shares issued is determined by dividing the value of the preferred share or other equity instrument issuance, including declared and unpaid dividends on such preferred share or other equity instrument issuance, by the conversion price and then applying the multiplier.

Normal Course Issuer Bid

On December 3, 2021, we announced our intention, subject to the approval of OSFI and the Toronto Stock Exchange, to establish a new normal course issuer bid (NCIB) for up to 22.5 million common shares. The NCIB is a regular part of our capital management strategy. Once approvals are obtained, the share repurchase program will permit us to purchase BMO common shares for the purpose of cancellation. The timing and amount of purchases under the NCIB are subject to regulatory approvals and to management discretion, based on factors such as market conditions and capital levels. We will consult with OSFI before making purchases under the NCIB.

We did not renew our NCIB in 2021 as OSFI's restriction on common share purchases, effective since March 13, 2020, remained in place until November 4, 2021. During fiscal 2021, we did not purchase any of our common shares under the prior NCIB.

Share Redemption and Dividend Restrictions

OSFI must approve any plan to redeem any of our preferred share issues or other equity instruments for cash.

We are prohibited from declaring dividends on our preferred or common shares when we would be, as a result of paying such a dividend, in contravention of the capital adequacy, liquidity or any other regulatory directive issued under the *Bank Act (Canada)*. In addition, common share dividends cannot be paid unless all dividends declared and payable on our preferred shares have been paid or sufficient funds have been set aside to do so and, in certain circumstances Class B Preferred Share dividends cannot be paid unless dividends on our Preferred Shares Series 48 have been paid.

In addition, if the bank does not pay the interest in full on the AT1 Notes, the bank will not declare dividends on its common shares or preferred shares or redeem, purchase or otherwise retire such shares until the month commencing after the bank resumes full interest payments on the AT1 Notes.

Currently, these limitations do not restrict the payment of dividends on common or preferred shares.

Shareholder Dividend Reinvestment and Share Purchase Plan

We offer a Dividend Reinvestment and Share Purchase Plan (DRIP) for our shareholders. Participation in the plan is optional. Under the terms of the DRIP, cash dividends on common shares are reinvested to purchase additional common shares. Shareholders also have the opportunity to make optional cash payments to acquire additional common shares.

During fiscal 2021 and the first half of fiscal 2020, common shares to supply the DRIP were purchased on the open market. In the second half of fiscal 2020, common shares to supply the dividend reinvestment feature of the DRIP were issued from treasury at a 2% discount from their then-current market price.

Potential Share Issuances

As at October 31, 2021, we had reserved 33,200,910 common shares (33,200,910 as at October 31, 2020) for potential issuance in respect of the DRIP. We have also reserved 5,682,206 common shares (6,446,110 as at October 31, 2020) for the potential exercise of stock options, as further described in Note 20.

Note 17: Fair Value of Financial Instruments and Trading-Related Revenue

We record trading assets and liabilities, derivatives, certain equity and debt securities and securities sold but not yet purchased at fair value, and othemon-trading assets and liabilities at amortized cost less allowances or write-downs for impairment. The fair values presented in this note are based upon the amounts estimated for individual assets and liabilities and do not include an estimate of the fair value of any of the legal entities or underlying operations that comprise our business. For certain portfolios of financial instruments where we manage exposures to similar and offsetting risks, fair value is determined on the basis of our net exposure to that risk.

Fair value represents the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between willing market participants at the measurement date. The fair value amounts disclosed represent point-in-time estimates that may change in subsequent reporting periods due to changes in market conditions or other factors. Some financial instruments are not typically exchangeable or exchanged and therefore it is difficult to determine their fair value. Where there is no quoted market price, we determine fair value using management's best estimates based on a range of valuation techniques and assumptions; since these involve uncertainties, the fair values may not be realized in an actual sale or immediate settlement of the asset or liability.

Governance Over the Determination of Fair Value

Senior executive oversight of our valuation processes is provided through various valuation and risk committees. In order to ensure that all financial instruments carried at fair value are reasonably measured for risk management and financial reporting purposes, we have established governance structures and controls, such as model validation and approval, independent price verification (IPV) and profit or loss attribution analysis (PAA), consistent with industry practice. These controls are applied independently of the relevant operating groups.

We establish valuation methodologies for each financial instrument that is required to be measured at fair value. The application of valuation models for products or portfolios is subject to independent approval to ensure only validated models are used. The impact of known limitations of models and data inputs is also monitored on an ongoing basis. IPV is a process that regularly and independently verifies the accuracy and appropriateness of market prices or model inputs used in the valuation of financial instruments. This process assesses fair values using a variety of different approaches to verify and validate the valuations. PAA is a daily process carried out by management to identify and explain changes in fair value positions across all operating lines of business within BMO Capital Markets. This process works in concert with other processes to ensure that the fair values being reported are reasonable and appropriate.

Securities

For traded securities, quoted market value is considered to be fair value. Quoted market value is based on bid or ask prices, depending on which is the most appropriate to measure fair value. Securities for which no active market exists are valued using all reasonably available market information. Our fair value methodologies are described below.

Government Securities
The fair value of government issued or guaranteed debt securities in active markets is determined by reference to recent transaction prices, broker quotes or third-party vendor prices. The fair value of securities that are not traded in an active market is modelled using implied yields derived from the prices of similar actively traded government securities and observable spreads.

Mortgage-Backed Securities and Collateralized Mortgage Obligations
The fair value of mortgage-backed securities and collateralized mortgage obligations is determined using prices obtained from independent third-party vendors, broker quotes and relevant market indices, as applicable. If such prices are not available, fair value is determined using cash flow models that make maximum use of observable market inputs or benchmark prices for similar instruments. Valuation assumptions for mortgage-backed securities and collateralized mortgage obligations include discount rates, default rates, expected prepayments, credit spreads and recoveries.

Corporate Debt Securities
The fair value of corporate debt securities is determined using prices observed in the most recent transactions. When observable price quotations are not available, fair value is determined based on discounted cash flow models using discounting curves and spreads obtained from independent dealers, brokers and third-party vendors.

Trading Loans
The fair value of trading loans is determined by referring to current market prices for the same or similar instruments.

Corporate Equity Securities
The fair value of corporate equity securities is based on quoted prices in active markets, where available. Where quoted prices in active markets are not readily available, fair value is determined using either quoted market prices for similar securities or using valuation techniques, which include discounted cash flow analysis and earnings multiples.

Privately Issued Securities
Privately issued debt and equity securities are valued using prices observed in recent market transactions, where available. Otherwise, fair value is derived from valuation models using a market or income approach. These models consider various factors, including projected cash flows, earnings, revenue and other third-party evidence, as available. The fair value of our privately issued securities includes net asset values published by third-party fund managers as applicable.

Prices from dealers, brokers and third-party vendors are corroborated as part of our independent review process, which may include using valuation techniques or obtaining consensus or composite prices from other pricing services. We validate the estimates of fair value by independently obtaining multiple quotes for external market prices and input values. We review the approach taken by third-party vendors to ensure that vendors employ a valuation model that maximizes the use of observable inputs such as benchmark yields, bid-ask spreads, underlying collateral, weighted-average terms to maturity and prepayment rate assumptions. Fair value estimates from internal valuation techniques are verified, where possible, by reference to prices obtained from third-party vendors.

Loans

In determining the fair value of our fixed rate performing loans, other than credit card loans, we discount the remaining contractual cash flows, adjusted for estimated prepayment, at market interest rates currently offered for loans with similar terms and credit risks. For credit card performing loans, fair value is considered to be equal to carrying value, due to their short-term nature.

For floating rate performing loans, changes in interest rates have minimal impact on fair value since interest rates are repriced or reset frequently. On that basis, fair value is assumed to be equal to carrying value.

The fair value of loans is not adjusted for the value of any credit protection purchased to mitigate credit risk.

Derivative Instruments

A number of valuation techniques are employed to estimate fair value, including discounted cash flow analysis, the Black-Scholes model, Monte Carlo simulation and other accepted market models. These independently validated models incorporate current market data for interest rates, foreign currency exchange rates, equity and commodity prices and indices, credit spreads, recovery rates, corresponding market volatility levels, spot prices, correlation levels and other market-based pricing factors. Option implied volatilities, an input into many valuation models, are either obtained directly from market sources or calculated from market prices. Multi-contributor pricing sources are used wherever possible.

In determining the fair value of complex and customized derivatives, we consider all reasonably available information, including dealer and broker quotations, multi-contributor pricing sources and any relevant observable market inputs. Our models calculate fair value based on inputs specific to the type of contract, which may include stock prices, correlation for multiple assets, interest rates, foreign currency exchange rates, yield curves and volatilities.

We calculate a credit valuation adjustment (CVA) to recognize the credit risk that the bank's counterparty may not ultimately be able to fulfill its derivative obligations. The CVA is derived from market-observed credit spreads or proxy credit spreads and our assessment of the net counterparty credit risk exposure, taking into account credit mitigants such as collateral, master netting agreements and novation to central counterparties. We also calculate a funding valuation adjustment (FVA) to recognize the implicit funding costs associated with over-the-counter derivative positions. The FVA is determined by reference to our own funding spreads.

Deposits

In determining the fair value of our deposits, we incorporate the following assumptions:

- For fixed rate, fixed maturity deposits, we discount the remaining contractual cash flows related to these deposits, adjusted for expected redemptions, at market interest rates currently offered for deposits with similar terms and risks. The fair value of our senior note liabilities and covered bonds is determined by referring to current market prices for similar instruments or using valuation techniques, such as discounted cash flow models that use market interest rate yield curves and funding spreads.
- For fixed rate deposits with no defined maturities, we consider fair value to equal carrying value, since carrying value is equivalent to the amount payable on the reporting date.
- For floating rate deposits, changes in interest rates have minimal impact on fair value, since deposits reprice to market frequently. On that basis, fair value is considered to equal carrying value.

Certain of our structured note liabilities that have coupons or repayment terms linked to the performance of interest rates, foreign currencies, commodities or equity securities have been designated at fair value through profit or loss. The fair value of these structured notes is estimated using internally validated valuation models and incorporates observable market prices for identical or comparable securities, as well as other inputs, such as interest rate yield curves, option volatilities and foreign exchange rates, where appropriate. Where observable prices or inputs are not available, management judgment is required to determine the fair value by assessing other relevant sources of information, such as historical data and proxy information from similar transactions.

Securities Sold But Not Yet Purchased

The fair value of these obligations is based on the fair value of the underlying securities, which can be equity or debt securities. As these obligations are fully collateralized, the method used to determine fair value would be the same as that used for the relevant underlying equity or debt securities.

Securitization and Structured Entities' Liabilities

The determination of the fair value of our securitization and structured entities' liabilities is based on quoted market prices or quoted market prices for similar financial instruments, where available. Where quoted prices are not available, fair value is determined using valuation techniques, such as discounted cash flow models that maximize the use of observable inputs.

Subordinated Debt

The fair value of our subordinated debt is determined by referring to current market prices for the same or similar instruments.

Financial Instruments with a Carrying Value Approximating Fair Value

Carrying value is considered to be a reasonable estimate of fair value for our cash and cash equivalents.

The carrying value of certain financial assets and liabilities, such as interest bearing deposits with banks, securities borrowed or purchased under resale agreements, customers' liability under acceptances, other assets, acceptances, securities lent or sold under repurchase agreements and other liabilities, is a reasonable estimate of fair value due to their short-term nature or because they are frequently repriced to current market rates. These items are therefore excluded from the below table.

Fair Value Hierarchy

We use a fair value hierarchy to categorize financial instruments according to the inputs we use in valuation techniques to measure fair value.

Fair Value of Financial Instruments Not Carried at Fair Value on the Balance Sheet

Set out in the following tables are the fair values of financial instruments not carried at fair value in our Consolidated Balance Sheet.

(Canadian $ in millions)	2021		2020	
	Carrying value	**Fair value** (5)	Carrying value	Fair value (5)
Securities (1)				
Amortized cost	**49,970**	**49,810**	48,466	49,009
Loans (1)				
Residential mortgages	**135,653**	**135,461**	126,882	128,815
Consumer instalment and other personal	**76,627**	**76,791**	69,480	70,192
Credit cards	**7,827**	**7,827**	7,556	7,556
Business and government (2)	**233,066**	**233,670**	238,239	239,929
	453,173	**453,749**	442,157	446,492
Deposits (3)	**662,827**	**663,558**	640,961	643,156
Securitization and structured entities' liabilities (4)	**24,631**	**24,809**	26,889	27,506
Subordinated debt	**6,893**	**7,087**	8,416	8,727

(1) Carrying value is net of allowances for credit losses.
(2) Excludes $5,022 million of loans classified as FVTPL ($5,306 million as at October 31, 2020) and $134 million of loans classified as FVOCI ($51 million as at October 31, 2020).
(3) Excludes $22,665 million of structured note liabilities ($18,073 million as at October 31, 2020) and $139 million of metal deposits ($nil as at October 31, 2020) designated at FVTPL.
(4) Excludes $855 million of securitization and structured entities' liabilities classified at FVTPL ($nil as at October 31, 2020).
(5) If financial instruments not carried at fair value were categorized based on the fair value hierarchy, all of these financial instruments would be categorized as Level 2, except for amortized cost securities, which would have $14,117 million categorized as Level 1 ($18,831 million as at October 31, 2020), and $35,693 million categorized as Level 2 ($30,178 million as at October 31, 2020).

Certain comparative figures have been reclassified to conform with the current year's presentation.

Valuation Techniques and Significant Inputs

We determine the fair value of publicly traded fixed maturity debt and equity securities using quoted prices in active markets (Level 1) when these are available. When quoted prices in active markets are not available, we determine the fair value of financial instruments using models such as discounted cash flows, with observable market data for inputs, such as yield or broker quotes and other third-party vendor quotes (Level 2). Fair value may also be determined using models where significant market inputs are not observable due to inactive markets or minimal market activity (Level 3). We maximize the use of observable market inputs to the extent possible.

Our Level 2 trading securities are primarily valued using discounted cash flow models with observable spreads or broker quotes. The fair value of Level 2 FVOCI securities is determined using discounted cash flow models with observable spreads or third-party vendor quotes. Level 2 structured note liabilities are valued using models with observable market information. Level 2 derivative assets and liabilities are valued using industry-standard models and observable market information.

The extent of our use of actively quoted market prices (Level 1), internal models using observable market information as inputs (Level 2) and models without observable market information as inputs (Level 3) in the valuation of securities, business and government loans classified as FVTPL, and FVOCI, other assets, fair value liabilities, derivative assets and derivative liabilities is presented in the following table:

(Canadian $ in millions)	2021				2020			
	Valued using quoted market prices	**Valued using models (with observable inputs)**	**Valued using models (without observable inputs)**	**Total**	Valued using quoted market prices	Valued using models (with observable inputs)	Valued using models (without observable inputs)	Total
Trading Securities								
Issued or guaranteed by:								
Canadian federal government	**3,123**	**4,473**	**–**	**7,596**	6,529	4,371	–	10,900
Canadian provincial and municipal governments	**2,183**	**3,655**	**–**	**5,838**	1,868	6,467	–	8,335
U.S. federal government	**6,050**	**3,532**	**–**	**9,582**	5,702	2,716	–	8,418
U.S. states, municipalities and agencies	**–**	**458**	**–**	**458**	16	487	–	503
Other governments	**1,307**	**591**	**–**	**1,898**	1,021	1,495	–	2,516
NHA MBS and U.S. agency MBS and CMO	**–**	**13,379**	**675**	**14,054**	7	11,487	803	12,297
Corporate debt	**2,231**	**7,656**	**7**	**9,894**	3,767	7,274	–	11,041
Trading loans	**–**	**160**	**–**	**160**	–	67	–	67
Corporate equity	**54,931**	**–**	**–**	**54,931**	43,757	–	–	43,757
	69,825	**33,904**	**682**	**104,411**	62,667	34,364	803	97,834
FVTPL Securities								
Issued or guaranteed by:								
Canadian federal government	**704**	**159**	**–**	**863**	452	149	–	601
Canadian provincial and municipal governments	**137**	**1,243**	**–**	**1,380**	180	1,249	–	1,429
U.S. federal government	**–**	**38**	**–**	**38**	–	44	–	44
Other governments	**–**	**92**	**–**	**92**	–	94	–	94
NHA MBS and U.S. agency MBS and CMO	**–**	**9**	**–**	**9**	–	3	–	3
Corporate debt	**160**	**7,544**	**–**	**7,704**	70	7,827	–	7,897
Corporate equity	**1,670**	**12**	**2,442**	**4,124**	1,587	10	1,903	3,500
	2,671	**9,097**	**2,442**	**14,210**	2,289	9,376	1,903	13,568
FVOCI Securities								
Issued or guaranteed by:								
Canadian federal government	**9,138**	**3,927**	**–**	**13,065**	20,765	1,685	–	22,450
Canadian provincial and municipal governments	**1,438**	**1,549**	**–**	**2,987**	2,604	2,143	–	4,747
U.S. federal government	**18,873**	**2,153**	**–**	**21,026**	14,852	2,842	–	17,694
U.S. states, municipalities and agencies	**–**	**4,113**	**1**	**4,114**	8	5,267	1	5,276
Other governments	**2,803**	**3,699**	**–**	**6,502**	3,643	3,738	–	7,381
NHA MBS and U.S. agency MBS and CMO	**–**	**12,136**	**–**	**12,136**	–	12,532	–	12,532
Corporate debt	**812**	**2,349**	**–**	**3,161**	792	2,442	–	3,234
Corporate equity	**–**	**–**	**132**	**132**	–	–	93	93
	33,064	**29,926**	**133**	**63,123**	42,664	30,649	94	73,407
Business and Government Loans	**–**	**5,150**	**6**	**5,156**	–	3,412	1,945	5,357
Other Assets (1)	**4,392**	**85**	**–**	**4,477**	6,117	117	–	6,234
Fair Value Liabilities								
Securities sold but not yet purchased	**17,424**	**14,649**	**–**	**32,073**	19,740	9,636	–	29,376
Structured note liabilities (2)	**–**	**22,665**	**–**	**22,665**	–	18,073	–	18,073
Other liabilities (3)	**1,106**	**2,125**	**–**	**3,231**	789	1,285	–	2,074
	18,530	**39,439**	**–**	**57,969**	20,529	28,994	–	49,523
Derivative Assets								
Interest rate contracts	**6**	**8,066**	**–**	**8,072**	13	14,916	–	14,929
Foreign exchange contracts	**3**	**14,982**	**–**	**14,985**	1	10,825	–	10,826
Commodity contracts	**642**	**6,976**	**–**	**7,618**	123	2,465	–	2,588
Equity contracts	**1,381**	**4,657**	**–**	**6,038**	750	7,711	–	8,461
Credit default swaps	**–**	**–**	**–**	**–**	–	11	–	11
	2,032	**34,681**	**–**	**36,713**	887	35,928	–	36,815
Derivative Liabilities								
Interest rate contracts	**6**	**6,773**	**–**	**6,779**	22	10,871	–	10,893
Foreign exchange contracts	**4**	**12,451**	**–**	**12,455**	3	10,609	–	10,612
Commodity contracts	**746**	**1,445**	**–**	**2,191**	350	1,983	–	2,333
Equity contracts	**1,581**	**7,802**	**–**	**9,383**	456	6,067	–	6,523
Credit default swaps	**–**	**5**	**2**	**7**	–	10	4	14
	2,337	**28,476**	**2**	**30,815**	831	29,540	4	30,375

(1) Other assets include precious metals, segregated fund assets in our insurance business and certain receivables measured at fair value.
(2) These structured note liabilities included in deposits have been designated at FVTPL.
(3) Other liabilities include investment contract and segregated fund liabilities in our insurance business, certain payables and metals deposits that have been designated at FVTPL as well as certain securitization and structured entities' liabilities measured at FVTPL.

Certaincomparative figures have been reclassified to conform with the current year's presentation.

Quantitative Information about Level 3 Fair Value Measurements

The table below presents the fair values of our significant Level 3 financial instruments, the valuation techniques used to determine their fair values and the value ranges of significant unobservable inputs used in the valuations. We have not applied any other reasonably possible alternative assumptions to the significant Level 3 categories of private equity investments, as the net asset values are provided by the investment or fund managers.

(Canadian $ in millions, except as noted)					2021	
	Reporting line in fair value hierarchy table	Fair value of assets	Valuation techniques	Significant unobservable inputs	Range of input values (1) Low	High
Private equity (2)	Corporate equity	**2,442**	Net asset value	Net asset value	**na**	**na**
			EV/EBITDA	Multiple	**6x**	**19x**
Loans (3)	Business and government loans	**6**	Discounted cash flows	Discount margin	**40bps**	**40bps**
NHA MBS and U.S. agency MBS and CMO	NHA MBS and U.S. agency MBS and CMO	**675**	Discounted cash flows	Prepayment rate	**4%**	**47%**
			Market Comparable	Comparability Adjustment (4)	**(5.56)**	**5.85**

					2020	
Private equity (2)	Corporate equity	1,903	Net asset value	Net asset value	na	na
			EV/EBITDA	Multiple	5x	17x
Loans (3)	Business and government loans	1,945	Discounted cash flows	Discount margin	65bps	141bps
NHA MBS and U.S. agency MBS and CMO	NHA MBS and U.S. agency MBS and CMO	803	Discounted cash flows	Prepayment rate	6%	62%
			Market Comparable	Comparability Adjustment (4)	(4.93)	5.74

(1) The low and high input values represent the highest and lowest actual level of inputs used to value a group of financial instruments in a particular product category. These input ranges do not reflect the level of input uncertainty but are affected by the specific underlying instruments within each product category. The input ranges will therefore vary from period to period based on the characteristics of the underlying instruments held at each balance sheet date.
(2) Included in private equity is $453 million of U.S. Federal Reserve Bank and U.S. Federal Home Loan Bank shares that we carry at cost ($487 million in 2020), which approximates fair value, and are held to meet regulatory requirements.
(3) The impact of assuming a 10 basis point increase or decrease in discount margin for business and government loans is $1 ($3 million in 2020).
(4) Range of input values represents price per security adjustment.
na – not applicable

Significant Unobservable Inputs in Level 3 Instrument Valuations

Net Asset Value
Net asset value represents the estimated value of a security based on valuations received from the investment or fund manager. The valuation of certain private equity securities is based on the economic benefit we derive from our investment.

EV/EBITDA Multiple
The fair value of certain private equity and merchant banking investments is derived by calculating an enterprise value (EV) using the EV/EBITDA multiple and then proceeding through a waterfall of the company's capital structure to determine the value of the assets or securities we hold. The EV/EBITDA multiple is determined using judgment in considering factors such as multiples for comparable listed companies, recent transactions and company-specific factors, as well as liquidity discounts that account for the lack of active trading in these assets and securities.

Discount Margin
Loan and corporate debt yield is the interest rate used to discount expected future cash flows in the valuation model. The discount margin is the difference between an instrument's yield and a benchmark instrument's yield. Benchmark instruments, such as government bonds, have high credit quality ratings and similar maturities. The discount margin therefore represents a market return that accounts for uncertainty in future cash flows. Generally, a higher or lower discount margin will result in a lower or higher fair value.

Prepayment Rates
Discounted cash flow models are used to fair value our NHA MBS and U.S. agency MBS and CMOs. The cash flow model includes assumptions related to conditional prepayment rates, constant default rates and percentage loss on default. Prepayment rates impact our estimate of future cash flows. Changes in the prepayment rate tend to be negatively correlated with interest rates. In other words, an increase in the prepayment rate will result in a higher fair value when the asset interest rate is lower than the current reinvestment rate. A decrease in the prepayment rate will result in a lower fair value when the asset interest rate is higher than the current reinvestment rate.

Comparability Adjustment
Market comparable pricing is used to evaluate the fair value of NHA MBS and U.S. agency MBS and CMOs. This technique involves sourcing prices from third parties for similar instruments and applying adjustments to reflect recent transaction prices and instrument specific characteristics.

Significant Transfers
Our policy is to record transfers of assets and liabilities between fair value hierarchy levels at their fair values as at the end of each reporting period, consistent with the date of the determination of fair value. Transfers between the various fair value hierarchy levels reflect changes in the availability of quoted market prices or observable market inputs that result from changes in market conditions. Transfers from Level 1 to Level 2 were due to reduced observability of the inputs used to value the securities. Transfers from Level 2 to Level 1 were due to increased availability of quoted prices in active markets.

The following table presents significant transfers between Level 1 and Level 2 for the years ended October 31, 2021 and October 31, 2020.

(Canadian $ in millions)	2021		2020	
	Level 1 to Level 2	**Level 2 to Level 1**	Level 1 to Level 2	Level 2 to Level 1
Trading Securities	**7,863**	**11,421**	6,582	5,930
FVTPL Securities	**871**	**902**	667	334
FVOCI Securities	**11,028**	**13,542**	12,193	13,425
Securities sold but not yet purchased	**7,764**	**5,950**	7,781	3,871

Changes in Level 3 Fair Value Measurements

The tables below present a reconciliation of all changes in Level 3 financial instruments for the years ended October 31, 2021 and 2020, including realized and unrealized gains (losses) included in earnings and other comprehensive income as well as transfers into and out of Level 3. Transfers from Level 2 to Level 3 were due to an increase in unobservable market inputs used in pricing the securities. Transfers out of Level 3 to Level 2 were due to an increase in observable market inputs used in pricing the securities.

		Change in fair value		**Movements**			**Transfers**			
For the year ended October 31, 2021 (Canadian $ in millions)	Balance October 31, 2020	**Included in earnings**	**Included in other comprehensive income** (1)	**Purchases/ Issuances**	**Sales** (2)	**Maturities/ Settlement**	**Transfers into Level 3**	**Transfers out of Level 3**	**Fair value as at October 31, 2021**	**Change in unrealized gains (losses) recorded in income for instruments still held** (3)
Trading Securities										
NHA MBS and U.S. agency MBS and CMO	803	**(222)**	**(56)**	**1,465**	**(1,253)**	**–**	**169**	**(231)**	**675**	**38**
Corporate debt	–	**–**	**–**	**10**	**(3)**	**–**	**–**	**–**	**7**	**–**
Total trading securities	803	**(222)**	**(56)**	**1,475**	**(1,256)**	**–**	**169**	**(231)**	**682**	**38**
FVTPL Securities										
Corporate equity	1,903	**315**	**(92)**	**628**	**(276)**	**(4)**	**–**	**(32)**	**2,442**	**374**
Total FVTPL securities	1,903	**315**	**(92)**	**628**	**(276)**	**(4)**	**–**	**(32)**	**2,442**	**374**
FVOCI Securities										
Issued or guaranteed by:										
U.S. states, municipalities and agencies	1	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**1**	**na**
Corporate equity	93	**–**	**26**	**13**	**–**	**–**	**–**	**–**	**132**	**na**
Total FVOCI securities	94	**–**	**26**	**13**	**–**	**–**	**–**	**–**	**133**	**na**
Business and Government Loans	1,945	**–**	**(150)**	**1,812**	**–**	**(1,302)**	**–**	**(2,299)**	**6**	**–**
Other Liabilities	–	**–**	**–**	**–**	**(13)**	**–**	**13**	**–**	**–**	**–**
Derivative Liabilities										
Credit default swaps	4	**–**	**–**	**–**	**–**	**–**	**–**	**(2)**	**2**	**–**
Total derivative liabilities	4	**–**	**–**	**–**	**–**	**–**	**–**	**(2)**	**2**	**–**

(1) Foreign exchange translation on trading securities held by foreign subsidiaries is included in other comprehensive income, net foreign operations.
(2) Includes proceeds received on securities sold but not yet purchased.
(3) Changes in unrealized gains (losses) on FVTPL securities still held on October 31, 2021 are included in earnings for the year.
Unrealized gains (losses) recognized on Level 3 financial instruments may be offset by (losses) gains on economic hedge contracts.
na – not applicable

For the year ended October 31, 2020 (Canadian $ in millions)	Balance October 31, 2019	Change in fair value: Included in earnings	Change in fair value: Included in other comprehensive income (1)	Movements: Purchases/ Issuances	Movements: Sales (2)	Movements: Maturities/ Settlement	Transfers: Transfers into Level 3	Transfers: Transfers out of Level 3	Fair value as at October 31, 2020	Change in unrealized gains (losses) recorded in income for instruments still held (3)
Trading Securities										
NHA MBS and U.S. agency MBS and CMO	538	(351)	9	1,338	(715)	–	225	(241)	803	(232)
Corporate debt	7	10	(2)	50	(68)	–	3	–	–	(1)
Total trading securities	545	(341)	7	1,388	(783)	–	228	(241)	803	(233)
FVTPL Securities										
Corporate equity	1,984	4	17	356	(459)	–	1	–	1,903	35
Total FVTPL securities	1,984	4	17	356	(459)	–	1	–	1,903	35
FVOCI Securities										
Issued or guaranteed by:										
U.S. states, municipalities and agencies	1	–	–	–	–	–	–	–	1	na
Corporate equity	81	–	1	11	–	–	–	–	93	na
Total FVOCI securities	82	–	1	11	–	–	–	–	94	na
Business and Government Loans	1,736	(3)	156	1,803	–	(1,747)	–	–	1,945	–
Other Liabilities	–	–	–	–	–	–	–	–	–	–
Derivative Liabilities										
Credit default swaps	1	–	–	–	–	–	4	(1)	4	–
Total derivative liabilities	1	–	–	–	–	–	4	(1)	4	–

(1) Foreign exchange translation on trading securities held by foreign subsidiaries is included in other comprehensive income, net foreign operations.
(2) Includes proceeds received on securities sold but not yet purchased.
(3) Changes in unrealized gains (losses) on trading securities, derivative assets and derivative liabilities still held on October 31, 2020 are included in earnings for the year.
Unrealized gains (losses) recognized on Level 3 financial instruments may be offset by (losses) gains on economic hedge contracts.
na – not applicable

Trading-Related Revenue

Trading assets and liabilities, including derivatives, securities and financial instruments designated at fair value through profit or loss, are measured at fair value, with gains and losses recognized in trading revenues, non-interest revenue, in our Consolidated Statement of Income. Trading-related revenue includes net interest income and non-interest revenue and excludes underwriting fees and commissions on securities transactions, which are shown separately in our Consolidated Statement of Income. Net interest income arises from interest and dividends related to trading assets and liabilities and is reported net of interest expense associated with funding these assets and liabilities in the following table.

(Canadian $ in millions)	**2021**	2020	2019
Interest rates	**1,017**	1,199	700
Foreign exchange	**416**	474	401
Equities	**567**	(32)	269
Commodities	**147**	271	145
Other	**2**	34	6
Total trading-related revenue	**2,149**	1,946	1,521
Reported as:			
Net interest income	**1,853**	1,931	1,223
Non-interest revenue – trading revenues	**296**	15	298
Total trading-related revenue	**2,149**	1,946	1,521

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Note 18: Offsetting of Financial Assets and Financial Liabilities

Financial assets and financial liabilities are offset and the net amount is reported in our Consolidated Balance Sheet when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the asset and settle the liability simultaneously. The following table presents the amounts that have been offset in our Consolidated Balance Sheet, including securities purchased under resale agreements, securities sold under repurchase agreements and derivative instruments, generally under a market settlement mechanism (e.g. an exchange or clearing house) where simultaneous net settlement can be achieved to eliminate credit and liquidity risk between counterparties. Also presented are amounts not offset in the Consolidated Balance Sheet related to transactions where a master netting agreement or similar arrangement is in place with a right to offset the amounts only in the event of default, insolvency or bankruptcy, or where the offset criteria are otherwise not met.

(Canadian $ in millions) **2021**

				Amounts not offset in the balance sheet			
	Gross amounts	**Amounts offset in the balance sheet**	**Net amounts presented in the balance sheet**	**Impact of master netting agreements**	**Securities received/pledged as collateral** (1)(2)	**Cash collateral**	**Net amount** (3)
Financial Assets							
Securities borrowed or purchased under resale agreements	**108,799**	**1,417**	**107,382**	**15,779**	**90,389**	**9**	**1,205**
Derivative instruments	**37,054**	**341**	**36,713**	**20,952**	**2,377**	**4,823**	**8,561**
	145,853	**1,758**	**144,095**	**36,731**	**92,766**	**4,832**	**9,766**
Financial Liabilities							
Derivative instruments	**31,156**	**341**	**30,815**	**20,952**	**1,865**	**1,906**	**6,092**
Securities lent or sold under repurchase agreements	**98,973**	**1,417**	**97,556**	**15,779**	**81,411**	**108**	**258**
	130,129	**1,758**	**128,371**	**36,731**	**83,276**	**2,014**	**6,350**

2020

Financial Assets							
Securities borrowed or purchased under resale agreements	115,863	3,985	111,878	17,302	92,889	194	1,493
Derivative instruments	37,164	349	36,815	19,302	2,816	4,148	10,549
	153,027	4,334	148,693	36,604	95,705	4,342	12,042
Financial Liabilities							
Derivative instruments	30,724	349	30,375	19,302	1,889	3,108	6,076
Securities lent or sold under repurchase agreements	92,643	3,985	88,658	17,302	70,693	263	400
	123,367	4,334	119,033	36,604	72,582	3,371	6,476

(1) Financial assets received/pledged as collateral are disclosed at fair value and are limited to the net balance sheet exposure (i.e. any over-collateralization is excluded from the table).
(2) Certain amounts of collateral are restricted from being sold or repledged except in the event of default or the occurrence of other predetermined events.
(3) Not intended to represent our actual exposure to credit risk.

Certaincomparative figures have been reclassified to conform with the current year's presentation.

Note 19: Capital Management

Our objective is to maintain a strong capital position in a cost-effective structure that: is appropriate given our target regulatory capital ratios and internal assessment of required economic capital; underpins our operating groups' business strategies; supports depositor, investor and regulator confidence, while building long-term shareholder value; and is consistent with our target credit ratings.

Our approach includes establishing limits, targets and performance measures that are used to manage balance sheet positions, risk levels and capital requirements, as well as issuing and redeeming capital instruments to achieve a cost-effective capital structure.

Regulatory capital requirements for the bank are determined in accordance with guidelines issued by OSFI, which are based on the Basel III framework developed by the Basel Committee on Banking Supervision. To address the market disruption posed by the COVID-19 pandemic, OSFI announced a suite of modifications to capital requirements in fiscal 2020, with those that were temporary in nature being unwound during the course of fiscal 2021, except for the temporary exclusion of certain exposures from the Leverage Ratio exposure measures which expires on December 31, 2021. Refer to the Enterprise-Wide Capital Management section of Management's Discussion and Analysis within this report for more details.

Common Equity Tier 1 (CET1) capital is the most permanent form of capital. It is comprised of common shareholders' equity and may include a portion of expected credit loss provisions, less deductions for goodwill, intangible assets and certain other items. Tier 1 capital is primarily comprised of CET1 capital, preferred shares and other equity instruments, less regulatory deductions.

Tier 2 capital is primarily comprised of subordinated debentures and may include a portion of expected credit loss provisions, less regulatory deductions. Total capital includes Tier 1 and Tier 2 capital. Details of the components of our capital position are presented in Notes 11, 12, 15 and 16.

The primary regulatory capital measures are the CET1 Ratio, Tier 1 Capital Ratio, Total Capital Ratio and Leverage Ratio.

- Regulatory capital ratios are calculated by dividing CET1, Tier 1 and Total capital by their respective risk-weighted assets.
- The Leverage Ratio is defined as Tier 1 capital divided by leverage exposures, which consists of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

As at October 31, 2021, we met OSFI's required target capital ratios, which include a 2.5% Capital Conservation Buffer, a 1.0% Common Equity Tier 1 Surcharge for domestic systemically important banks, a Countercyclical Buffer and a 2.5% Domestic Stability Buffer.

Regulatory Capital Measures, Risk-Weighted Assets and Leverage Exposures (1)

(Canadian $ in millions, except as noted)	2021	2020
CET1 Capital	**44,491**	40,077
Tier 1 Capital	**49,966**	45,840
Total Capital	**57,201**	54,661
Risk-Weighted Assets	**325,433**	336,607
Leverage Exposures	**976,690**	953,640
CET1 Ratio	**13.7%**	11.9%
Tier 1 Capital Ratio	**15.4%**	13.6%
Total Capital Ratio	**17.6%**	16.2%
Leverage Ratio	**5.1%**	4.8%

(1) Disclosed in accordance with, as applicable, OSFI's Capital Adequacy Requirements Guideline and Leverage Requirements Guideline. Reflects modifications to capital requirements announced by OSFI in response to the COVID-19 pandemic in fiscal 2020, some of which remain in effect in 2021.

Note 20: Employee Compensation – Share-Based Compensation

Stock Option Plan

We maintain a Stock Option Plan for designated officers and employees. Options are granted at an exercise price equal to the closing price of our common shares on the day before the grant date. Stock options granted vest in equal tranches of 50% on the third and fourth anniversaries of their grant date. Each tranche is treated as a separate award with a different vesting period. In general, options expire 10 years from their grant date.

We determine the fair value of stock options on their grant date and record this amount as compensation expense over the period that the stock options vest, with a corresponding increase to contributed surplus. When these stock options are exercised, we issue shares and record the amount of proceeds, together with the amount recorded in contributed surplus, in share capital. The estimated grant date fair value of stock options granted to employees who are eligible to retire is expensed at the date of grant.

The following table summarizes information about our Stock Option Plan:

(Canadian $, except as noted)	2021		2020		2019	
	Number of stock options	**Weighted-average exercise price (1)**	Number of stock options	Weighted-average exercise price (1)	Number of stock options	Weighted-average exercise price (1)
Outstanding at beginning of year	**6,446,110**	**81.50**	6,108,307	76.59	6,095,201	72.19
Granted	**984,943**	**97.14**	976,087	101.47	931,047	89.90
Exercised	**1,630,867**	**67.88**	563,613	61.89	902,651	60.21
Forfeited/cancelled	**117,980**	**97.03**	34,052	97.10	4,756	98.96
Expired	**–**	**–**	40,619	82.78	10,534	103.79
Outstanding at end of year	**5,682,206**	**87.79**	6,446,110	81.50	6,108,307	76.59
Exercisable at end of year	**2,616,750**	**77.34**	3,595,744	69.16	3,507,803	64.57
Available for grant	**12,708,296**		13,575,259		2,487,645	

(1) The weighted-average exercise prices reflect the conversion of foreign currency denominated options at the exchange rate as at October 31, 2021, 2020 and 2019, respectively.
For foreign currency denominated options exercised or expired during the year, the weighted-average exercise prices are translated using the exchange rates as at the settlement date and expiry date, respectively.

Employee compensation expense related to this plan for the years ended October 31, 2021, 2020 and 2019 was $10 million, $9 million and $9 million, respectively.

Options outstanding and exercisable at October 31, 2021 by range of exercise price were as follows:

(Canadian $, except as noted)	2021				
	Options outstanding			**Options exercisable**	
Range of exercise prices	**Number of stock options**	**Weighted-average remaining contractual life (years)**	**Weighted-average exercise price**	**Number of stock options**	**Weighted-average exercise price**
$50.01 to $60.00	**107,888**	**0.1**	**56.00**	**107,888**	**56.00**
$60.01 to $70.00	**1,065,947**	**1.6**	**64.58**	**1,065,947**	**64.58**
$70.01 to $80.00	**691,456**	**3.7**	**77.57**	**691,456**	**77.57**
$80.01 to $90.00	**878,372**	**7.1**	**89.90**	**–**	**–**
$90.01 and over	**2,938,543**	**7.6**	**99.16**	**751,459**	**98.27**

The following table summarizes additional information about our Stock Option Plan:

(Canadian $ in millions, except as noted)	**2021**	2020	2019
Unrecognized compensation cost for non-vested stock option awards	**7**	7	6
Cash proceeds from stock options exercised	**111**	35	54
Weighted-average share price for stock options exercised (in dollars)	**115.42**	94.44	99.84

The fair value of options granted was estimated using a binomial option pricing model. The weighted-average fair value of options granted during the years ended October 31, 2021, 2020 and 2019 was $10.75, $9.46 and $10.23, respectively. To determine the fair value of the stock option tranches on the grant date, the following ranges of values were used for each option pricing assumption:

	2021	2020	2019
Expected dividend yield	**4.9%**	4.3%	5.7%
Expected share price volatility	**20.6% – 20.7%**	15.4%	20.0% – 20.1%
Risk-free rate of return	**1.0%**	1.9% – 2.0%	2.5%
Expected period until exercise (in years)	**6.5 – 7.0**	6.5 – 7.0	6.5 – 7.0

Changes to the input assumptions can result in different fair value estimates.

Expected dividend yield is based on market expectations of future dividends on our common shares. Expected share price volatility is determined based on the market consensus implied volatility for traded options on our common shares. The risk-free rate is based on the yields of a Canadian swap curve with maturities similar to the expected period until exercise of the options. The weighted-average exercise price on the grant date for the years ended October 31, 2021, 2020 and 2019 was $97.14, $101.47 and $89.90, respectively.

Other Share-Based Compensation

Share Purchase Plans

We offer various employee share purchase plans. The largest of these plans provides employees with the option of directing a portion of their gross salary toward the purchase of our common shares. We match 50% of employee contributions up to 6% of their individual gross salary to a maximum of $75,000 ($100,000 prior to December 31, 2020). Our contributions during the first two years vest after two years of participation in the plan, with subsequent contributions vesting immediately. The shares held in the employee share purchase plan are purchased on the open market and are considered outstanding for purposes of computing earnings per share. The dividends earned on our common shares held by the plan are used to purchase additional common shares on the open market.

We account for our contributions as employee compensation expense when they are contributed to the plan.

Employee compensation expense related to these plans for the years ended October 31, 2021, 2020 and 2019 was $46 million, $58 million and $54 million, respectively. There were 18.0 million, 19.2 million and 18.0 million common shares held in these plans for the years ended October 31, 2021, 2020 and 2019, respectively.

Compensation Trusts

We sponsor various share ownership arrangements, certain of which are administered through trusts into which our matching contributions are paid.

We are not required to consolidate our compensation trusts. The assets held by the trusts are not included in our consolidated financial statements.

Total assets held under our share ownership arrangements amounted to $2,425 million as at October 31, 2021 ($1,523 million as at October 31, 2020).

Mid-Term Incentive Plans

We offer mid-term incentive plans for executives and certain senior employees. Payment amounts are adjusted to reflect reinvested dividends and changes in the market value of our common shares. Depending on the plan, the recipient receives either a single cash payment at the end of the three-year period of the plan, or cash payments over the three years of the plan. As the awards are cash-settled, they are recorded as liabilities. Amounts payable under such awards are recorded as compensation expense over the vesting period. Amounts related to units granted to employees who are eligible to retire are expensed at the time of grant. Subsequent changes in the fair value of the liability are recorded in compensation expense in the period in which they arise.

Mid-term incentive plan units granted during the years ended October 31, 2021, 2020 and 2019 totalled6.4 million, 5.7 million and 6.3 million, respectively.

The weighted-average fair value of these units granted during the years ended 0ctober 31, 2021, 2020 and 2019 was $91.62, $99.59 and $98.52, respectively, and we recorded employee compensation expense of $1,234 million, $363 million and $610 million, respectively. We hedge the impact of the change in market value of our common shares by entering into total return swaps. We also enter into foreign currency swaps to manage the foreign exchange translation from our U.S. businesses. Gains (losses) on total return swaps and foreign currency swaps recognized for the years ended October 31, 2021, 2020 and 2019 were $719 million, $(175) million and $20 million, respectively, resulting in net employee compensation expense of $515 million, $538 million and $590 million, respectively.

A total of 17.6 million, 17.0 million and 17.2 million mid-term incentive plan units were outstanding as at October 31, 2021, 2020 and 2019, respectively, and the intrinsic value of those awards which had vested was $1,679 million, $1,019 million and $1,251 million, respectively.

Deferred Incentive Plans

We offer deferred incentive plans for members of our Board of Directors, executives and key employees in BMO Capital Markets and Wealth Management. Under these plans, fees, annual incentive payments and/or commissions can be deferred as share units of our common shares. These share units are either fully vested on the grant date or vest at the end of three years. The value of these share units is adjusted to reflect reinvested dividends and changes in the market value of our common shares.

Deferred incentive plan payments are paid in cash upon the participant's departure from the bank.

Employee compensation expense for these plans is recorded in the year the fees, incentive payments and/or commissions are earned. Changes in the amount of the incentive plan payments as a result of dividends and share price movements are recorded as increases or decreases in employee compensation expense in the period of the change.

Deferred incentive plan units granted during the years ended October 31, 2021, 2020 and 2019 totalled 0.4 million, 0.3 million and 0.3 million, respectively, and the weighted-average fair value of these units granted during the years ended October 31, 2021, 2020 and 2019 was $113.08, $85.47 and $97.27, respectively.

Liabilities related to these plans are recorded in other liabilities in our Consolidated Balance Sheet and totalled $609 million and $379 million as at October 31, 2021 and 2020, respectively.

Employee compensation expense related to these plans for the years ended October 31, 2021, 2020 and 2019 was $279 million, $(62) million and $17 million, respectively. We have entered into derivative instruments to hedge our exposure related to these plans. Changes in the fair value of these derivatives are recorded as employee compensation expense in the period in which they arise. Gains (losses) on these derivatives recognized for the years ended October 31, 2021, 2020 and 2019 were $271 million, $(67) million and $4 million, respectively. These gains (losses) resulted in net employee compensation expense for the years ended October 31, 2021, 2020 and 2019 of $8 million, $5 million and $13 million, respectively.

A total of 4.6 million, 4.7 million and 4.8 million deferred incentive plan units were outstanding as at October 31, 2021, 2020 and 2019, respectively.

Note 21: Employee Compensation – Pension and Other Employee Future Benefits

Pension and Other Employee Future Benefit Plans

We sponsor a number of arrangements globally that provide pension and other employee future benefits to our retired and current employees. The largest of these arrangements, by defined benefit obligation, are the primary defined benefit pension plans for employees in Canada and the United States and the primary other employee future benefit plan for employees in Canada.

Pension arrangements include defined benefit pension plans, as well as supplementary arrangements that provide pension benefits in excess of statutory limits. Generally, under these plans we provide retirement benefits based on an employee's years of service and average annual earnings over a period of time prior to retirement. Our pension and other employee future benefit expenses, recorded in employee compensation expense, mainly comprise the current service cost plus or minus the interest on net defined benefit assets or liabilities. In addition, we provide defined contribution pension plans to our employees. The costs of these plans, recorded in employee compensation expense, are equal to our contributions to the plans.

Effective December 31, 2020, the primary defined benefit pension plan for employees in Canada was closed to new employees hired after that date. Employees hired or transferred to BMO Canada on or after January 1, 2021 are eligible to participate in a defined contribution pension plan once they have completed the waiting period of six months of continuous service.

We also provide other employee future benefits, including health and dental care benefits and life insurance, for eligible current and retired employees.

Short-term employee benefits, such as salaries, paid absences, bonuses and other benefits, are accounted for on an accrual basis over the period in which the employees provide the related services.

Investment Policy

The defined benefit pension plans are administered under a defined governance structure, with oversight resting with the Board of Directors.

The plans are managed under a framework that considers both assets and liabilities in the development of an investment policy and in managing risk. Over the past several years, we have implemented a liability-driven investment strategy for the primary Canadian plan to enhance risk-adjusted returns while reducing the plan's surplus volatility. This strategy has reduced the impact of the plan on our regulatory capital.

The plans invest in asset classes that include equities, fixed income and alternative strategies, under established investment guidelines. Plan assets are diversified across asset classes and by geographic exposure. They are managed by asset management firms that are responsible for the selection of investment securities. Derivative instruments are permitted under policy guidelines and are generally used to hedge foreign currency exposures, manage interest rate exposures or replicate the return of an asset.

Asset Allocations

The asset allocation ranges and weighted-average actual asset allocations of our primary pension plans, based on fair market values at October 31, are as follows:

	Pension benefit plans		
	Target range 2021	**Actual 2021**	Actual 2020
Equities	**20% – 40%**	**30%**	30%
Fixed income investments	**40% – 55%**	**47%**	47%
Alternative strategies	**10% – 35%**	**23%**	23%

Our pension and other employee future benefit plan assets are measured at fair value on a recurring basis.

Risk Management

The defined benefit pension plans are exposed to various risks, including market risk (interest rate, equity and foreign currency risks), credit risk, operational risk, surplus risk and longevity risk. We follow a number of approaches to monitor and actively manage these risks, including:

- monitoring surplus-at-risk, which measures a plan's risk in an asset-liability framework;
- stress testing and scenario analyses to evaluate the volatility of the plans' financial positions and any potential impact on the bank;
- hedging of currency exposures and interest rate risk within policy limits;
- controls related to asset mix allocations, geographic allocations, portfolio duration, credit quality of debt securities, sector guidelines, issuer/counterparty limits and others; and
- ongoing monitoring of exposures, performance and risk levels.

Pension and Other Employee Future Benefit Liabilities

Our actuaries perform valuations of our defined benefit obligations for pension and other employee future benefits as at October 31 of each year using the projected unit credit method based on management's assumptions about discount rates, rates of compensation increase, retirement age, mortality and health care cost trend rates.

The discount rates for the primary Canadian and U.S. pension and other employee future benefit plans were selected based on the yields of high-quality AA rated corporate bonds with terms matching the plans' cash flows.

The fair value of plan assets is deducted from the defined benefit obligation to determine the net defined benefit asset or liability. For defined benefit pension plans that are in a net defined benefit asset position, the recognized asset is limited to the present value of economic benefits available in the form of future refunds from the plan or reductions in future contributions to the plan (the "asset ceiling"). Changes in the asset ceiling are recognized in other comprehensive income. Components of the change in our net defined benefit assets or liabilities and our pension and other employee future benefit expenses are as follows:

Current service cost represents benefits earned in the current year. The cost is determined with reference to the current workforce and the amount of benefits to which employees will be entitled upon retirement, based on the provisions of our benefit plans.

Interest on net defined benefit asset or liability represents the increase in the net defined benefit asset or liability that results from the passage of time and is determined by applying the discount rate to the net defined benefit asset or liability.

Actuarial gains and losses may arise in two ways. First, each year our actuaries recalculate the defined benefit obligations and compare them to those estimated as at the previous year end. Any differences that result from changes in demographic and economic assumptions or from plan member experience being different from management's expectations at the previous year end are considered actuarial gains or losses. Second, actuarial gains and losses arise when there are differences between the discount rate and actual returns on plan assets. Actuarial gains and losses are recognized immediately in other comprehensive income as they occur and are not subsequently reclassified to income in future periods.

Plan amendments are changes in our defined benefit obligations that result from changes to provisions of the plans. The effects of plan amendments are recognized immediately in income when a plan is amended.

Settlements occur when defined benefit obligations for plan participants are settled, usually through lump sum cash payments, and as a result we no longer have any obligation to provide such participants with benefit payments in the future.

Funding of Pension and Other Employee Future Benefit Plans

We fund our defined benefit pension plans in Canada and the United States in accordance with statutory requirements, and the assets in these plans are used to pay benefits to retirees and other employees. Some groups of employees are also eligible to make voluntary contributions in order to receive enhanced benefits. Our supplementary pension plan in Canada is funded, while the supplementary pension plan in the U.S. is unfunded.

Our other employee future benefit plans in Canada and the United States are either funded or unfunded. Benefit payments related to these plans are paid either through the respective plan or directly by us.

We measure the fair value of plan assets for our plans in Canada and the United States as at October 31. In addition to actuarial valuations for accounting purposes, we are required to prepare valuations for determining our minimum funding requirements for our pension arrangements in accordance with the relevant statutory framework (our "funding valuation"). An annual funding valuation is performed for our plans in Canada and the United States. The most recent funding valuation for our primary Canadian pension plan was performed as at October 31, 2021 and the most recent funding valuation for our primary U.S. pension plan was performed as at January 1, 2021.

A summary of plan information for the past three years is as follows:

(Canadian $ in millions)	Pension benefit plans			Other employee future benefit plans		
	2021	2020	2019	**2021**	2020	2019
Defined benefit obligation	**9,716**	10,493	9,866	**1,220**	1,290	1,254
Fair value of plan assets	**10,525**	10,064	9,723	**166**	181	175
Surplus (deficit) and net defined benefit asset (liability)	**809**	(429)	(143)	**(1,054)**	(1,109)	(1,079)
Surplus (deficit) is comprised of:						
Funded or partially funded plans	**939**	(266)	36	**40**	38	46
Unfunded plans	**(130)**	(163)	(179)	**(1,094)**	(1,147)	(1,125)
Surplus (deficit) and net defined benefit asset (liability)	**809**	(429)	(143)	**(1,054)**	(1,109)	(1,079)

Pension and Other Employee Future Benefit Expenses

Pension and other employee future benefit expenses are determined as follows:

(Canadian $ in millions)	Pension benefit plans			Other employee future benefit plans		
	2021	2020	2019	**2021**	2020	2019
Annual benefits expense						
Current service cost	**268**	249	193	**9**	11	9
Net interest (income) expense on net defined benefit (asset) liability	**7**	1	(20)	**30**	32	37
Past service cost (income)	**–**	–	(5)	**–**	–	–
Administrative expenses	**5**	5	5	**–**	–	–
Remeasurement of other long-term benefits	**–**	–	–	**(11)**	10	6
Benefits expense	**280**	255	173	**28**	53	52
Canada and Quebec pension plan expense	**90**	87	82	**–**	–	–
Defined contribution expense	**160**	169	170	**–**	–	–
Total annual pension and other employee future benefit expenses recognized in the Consolidated Statement of Income	**530**	511	425	**28**	53	52

Weighted-Average Assumptions

	Pension benefit plans			Other employee future benefit plans		
	2021	2020	2019	**2021**	2020	2019
Defined Benefit Expenses						
Discount rate at beginning of year (3)(4)	**2.7%**	3.0%	4.0%	**2.7%**	3.0%	4.1%
Rate of compensation increase	**2.1%**	2.1%	2.4%	**2.0%**	2.0%	2.0%
Assumed overall health care cost trend rate	**na**	na	na	**4.8%** (2)	4.9% (1)	4.9% (1)
Defined Benefit Obligation						
Discount rate at end of year	**3.2%**	2.7%	3.0%	**3.3%**	2.7%	3.0%
Rate of compensation increase	**2.2%**	2.1%	2.1%	**na** (5)	2.0%	2.0%
Assumed overall health care cost trend rate	**na**	na	na	**4.8%** (2)	4.8% (1)	4.9% (1)

(1) Trending to 4.1% in 2040 and remaining at that level thereafter.
(2) Trending to 4.0% in 2041 and remaining at that level thereafter.
(3) The pension benefit current service cost was calculated using a separate discount rate of 3.00%, 3.10% and 4.10% for 2021, 2020 and 2019, respectively.
(4) The other employee future benefit plans current service cost was calculated using a separate discount rate of 3.00%, 3.20% and 4.20% for 2021, 2020 and 2019, respectively.
(5) Rate of compensation increase is na due to new flat dollar retiree plan benefit no longer being dependent on compensation.
na – not applicable

Assumptions regarding future mortality are based on published statistics and mortality tables calibrated to plan experience, when applicable. The current life expectancies underlying the amounts of the defined benefit obligations for our primary plans are as follows:

(Years)	Canada		United States	
	2021	2020	**2021**	2020
Life expectancy for those currently age 65				
Males	**23.8**	23.8	21.8	21.7
Females	**24.2**	24.1	**23.2**	23.1
Life expectancy at age 65 for those currently age 45				
Males	**24.8**	24.7	**23.0**	22.9
Females	**25.1**	25.1	**24.4**	24.3

Changes in the estimated financial positions of our defined benefit pension plans and other employee future benefit plans are as follows:

(Canadian $ in millions, except as noted)	Pension benefit plans		Other employee future benefit plans	
	2021	2020	**2021**	2020
Defined benefit obligation				
Defined benefit obligation at beginning of year	**10,493**	9,866	**1,290**	1,254
Current service cost	**268**	249	**9**	11
Interest cost	**269**	286	**34**	37
Benefits paid	**(525)**	(516)	**(50)**	(48)
Employee contributions	**17**	17	**5**	5
Actuarial (gains) losses due to:				
Changes in demographic assumptions	**11**	16	**(4)**	14
Changes in financial assumptions	**(700)**	484	**(89)**	50
Plan member experience	**29**	59	**39**	(35)
Foreign exchange and other	**(146)**	32	**(14)**	2
Defined benefit obligation at end of year	**9,716**	10,493	**1,220**	1,290
Wholly or partially funded defined benefit obligation	**9,586**	10,330	**126**	143
Unfunded defined benefit obligation	**130**	163	**1,094**	1,147
Total defined benefit obligation	**9,716**	10,493	**1,220**	1,290
Fair value of plan assets				
Fair value of plan assets at beginning of year	**10,064**	9,723	**181**	175
Interest income	**262**	285	**4**	5
Return on plan assets (excluding interest income)	**542**	235	**(1)**	6
Employer contributions	**298**	296	**40**	36
Employee contributions	**17**	17	**5**	5
Benefits paid	**(525)**	(516)	**(50)**	(48)
Administrative expenses	**(5)**	(5)	**–**	–
Foreign exchange and other	**(128)**	29	**(13)**	2
Fair value of plan assets at end of year	**10,525**	10,064	**166**	181
Surplus (Deficit) and net defined benefit asset (liability) at end of year	**809**	(429)	**(1,054)**	(1,109)
Recorded in:				
Other assets	**947**	124	**40**	38
Other liabilities	**(138)**	(553)	**(1,094)**	(1,147)
Surplus (Deficit) and net defined benefit asset (liability) at end of year	**809**	(429)	**(1,054)**	(1,109)
Actuarial gains (losses) recognized in other comprehensive income				
Net actuarial gains (losses) on plan assets	**542**	235	**(1)**	6
Actuarial gains (losses) on defined benefit obligation due to:				
Changes in demographic assumptions	**(11)**	(16)	**4**	(12)
Changes in financial assumptions	**700**	(484)	**84**	(45)
Plan member experience	**(29)**	(59)	**(45)**	38
Foreign exchange and other	**20**	(6)	**–**	–
Actuarial gains (losses) recognized in other comprehensive income for the year	**1,222**	(330)	**42**	(13)

Our pension and other employee future benefit plan assets are measured at fair value on a recurring basis. The fair values of plan assets held by our primary plans as at October 31, 2021 and 2020 are as follows:

(Canadian $ in millions)	2021			2020		
	Quoted	**Unquoted**	**Total**	Quoted	Unquoted	Total
Cash and money market funds	**144**	**1**	**145**	208	–	208
Securities issued or guaranteed by:						
Canadian federal government	**26**	**41**	**67**	17	54	71
Canadian provincial and municipal governments	**191**	**364**	**555**	308	404	712
U.S. federal government	**297**	**4**	**301**	393	7	400
Pooled funds	**1,071**	**4,014**	**5,085**	1,331	3,442	4,773
Derivative instruments	**–**	**43**	**43**	1	(16)	(15)
Corporate debt	**3**	**1,391**	**1,394**	2	1,363	1,365
Corporate equity	**1,655**	**–**	**1,655**	1,255	–	1,255
	3,387	**5,858**	**9,245**	3,515	5,254	8,769

No plan assets are directly invested in the bank's or related parties' securities as at October 31, 2021 and 2020. As at October 31, 2021 our primary Canadian plan indirectly held, through pooled funds, approximately $11 million ($9 million as at October 31, 2020) of our common shares and fixed income securities. The plans do not hold any property we occupy or other assets we use.

Sensitivity of Assumptions

Key weighted-average assumptions used in measuring the defined benefit obligations for our primary plans are outlined in the following table. The sensitivity analysis provided in the table should be used with caution, as it is hypothetical and the impact of changes in each key assumption may not be linear. The sensitivities to changes in each key variable have been calculated independently of the impact of changes in other key variables. Actual experience may result in simultaneous changes in a number of key assumptions, which would amplify or reduce certain sensitivities.

	Defined benefit obligation	
(Canadian $ in millions, except as noted)	Pension benefit plans	Other employee future benefit plans
Discount rate (%)	3.2	3.3
Impact of: 1% increase ($)	(1,019)	(111)
1% decrease ($)	1,287	133
Rate of compensation increase (%)	2.2	na
Impact of: 0.25% increase ($)	47	– (1)
0.25% decrease ($)	(46)	– (1)
Mortality		
Impact of: 1 year shorter life expectancy ($)	(179)	(29)
1 year longer life expectancy ($)	176	29
Assumed overall health care cost trend rate (%)	na	4.8 (2)
Impact of: 1% increase ($)	na	49
1% decrease ($)	na	(49)

(1) The change in this assumption is immaterial.
(2) Trending to 4.0% in 2041 and remaining at that level thereafter.
na – not applicable

Maturity Profile

The duration of the defined benefit obligation for our primary plans is as follows:

(Years)	**2021**	2020
Canadian pension plans	**14.5**	15.4
U.S. pension plans	**9.5**	9.9
Canadian other employee future benefit plans	**13.7**	14.3

Cash Flows

Cash payments we made during the year in connection with our employee future benefit plans are as follows:

(Canadian $ in millions)	Pension benefit plans			Other employee future benefit plans		
	2021	2020	2019	**2021**	2020	2019
Contributions to defined benefit plans	**254**	251	203	**–**	–	–
Contributions to defined contribution plans	**160**	169	170	**–**	–	–
Benefits paid directly to pensioners	**44**	45	53	**40**	36	40
	458	465	426	**40**	36	40

Our best estimate of the contributions and benefitsto be paid directly to pensioners for the year ending October 31, 2022 is approximately $486 million for our defined benefit pension plans and $48 million for our other employee future benefit plans. Benefit payments for the year ending October 31, 2022 are estimated to be $542 million.

Note 22: Income Taxes

We report our provision for income taxes in our Consolidated Statement of Income based upon transactions recorded in our consolidated financial statements regardless of when they are recognized for income tax purposes, with the exception of repatriation of retained earnings from our subsidiaries, as noted below.

In addition, we record an income tax expense or benefit in other comprehensive income or directly in equity when the taxes relate to amounts recorded in other comprehensive income or equity. For example, income tax expense (recovery) on hedging gains (losses) related to our net investment in foreign operations is recorded in our Consolidated Statement of Comprehensive Income as part of net gains (losses) on translation of net foreign operations.

Current tax is the amount of income tax recoverable (payable) in respect of the taxable loss (profit) for a period. Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities for accounting and tax purposes. Deferred tax assets and liabilities are measured at the tax rates expected to apply when temporary differences reverse. Changes in deferred tax assets and liabilities related to a change in tax rates are recorded in income in the period the tax rate is substantively enacted, except to the extent that the tax arises from a transaction or event which is recognized either in other comprehensive income or directly in equity. Current and deferred taxes are offset only when they are levied by the same tax authority, on the same entity or group of entities, and when there is a legal right to offset.

Included in deferred tax assets is $nil million ($20 million as at October 31, 2020) related to Canadian tax loss carryforwards and $9 million ($75 million as at October 31, 2020) related to both U.S. tax loss carryforwards and tax credits that will expire in various amounts in U.S. taxation years from 2021 through 2040. On the evidence available, including management projections of income, we believe that it is probable there will be sufficient taxable income generated by our business operations to support these deferred tax assets. The amount of tax on temporary differences, unused tax losses and unused tax credits for which no deferred tax asset is recognized in our Consolidated Balance Sheet as at October 31, 2021 is $118 million ($113 million in 2020), of which $7 million ($7 million in 2020) is scheduled to expire within five years. Deferred tax assets have not been recognized in respect of these items because it is not probable that these assets will be realized.

Income that we earn through our foreign subsidiaries is generally taxed in the foreign country in which they operate. Income that we earn through our foreign branches is also generally taxed in the foreign country in which they operate. Canada also taxes the income we earn through foreign branches and a credit is allowed for certain foreign taxes paid on such income. Repatriation of earnings from certain foreign subsidiaries would require us to pay tax on certain of these earnings. As repatriation of such earnings is not planned in the foreseeable future, we have not recorded a related deferred tax liability. The taxable temporary differences associated with the repatriation of earnings from investments in certain subsidiaries, branches, associates and interests in joint ventures for which deferred tax liabilities have not been recognized totalled $17 billion as at October 31, 2021 ($16 billion in 2020).

Provision for Income Taxes

(Canadian $ in millions)	2021	2020	2019
Consolidated Statement of Income			
Current			
Provision for income taxes for the current period	**2,334**	1,154	1,198
Adjustments for prior periods	**(14)**	10	(14)
Deferred			
Origination and reversal of temporary differences	**173**	91	327
Effect of changes in tax rates	**11**	(4)	3
	2,504	1,251	1,514
Other Comprehensive Income and Equity			
Income tax expense (recovery) related to:			
Unrealized gains (losses) on FVOCI debt securities	**(58)**	143	140
Reclassification to earnings of (gains) on FVOCI debt securities	**(14)**	(25)	(26)
Gains (losses) on derivatives designated as cash flow hedges	**(504)**	541	521
Reclassification to earnings of (gains) losses on derivatives designated as cash flow hedges	**(149)**	(16)	51
Unrealized gains (losses) on hedges of net foreign operations	**180**	(35)	(4)
Gains (losses) on remeasurement of pension and other employee future benefit plans	**341**	(88)	(196)
Gains (losses) on remeasurement of own credit risk on financial liabilities designated at fair value	**(70)**	(10)	27
Unrealized gains on FVOCI equity securities	**6**	–	1
Share-based compensation	**(10)**	3	–
	(278)	513	514
Total provision for income taxes	**2,226**	1,764	2,028

Components of Total Provision for Income Taxes

(Canadian $ in millions)	2021	2020	2019
Canada: Current taxes			
Federal	**650**	694	791
Provincial	**373**	402	465
	1,023	1,096	1,256
Canada: Deferred taxes			
Federal	**233**	(11)	(113)
Provincial	**134**	(6)	(66)
	367	(17)	(179)
Total Canadian	**1,390**	1,079	1,077
Foreign: Current taxes	**940**	450	308
Deferred taxes	**(104)**	235	643
Total foreign	**836**	685	951
Total provision for income taxes	**2,226**	1,764	2,028

Set out below is a reconciliation of our statutory tax rates and income taxes that would be payable at these rates to the effective tax rates and provision for income taxes that we have recorded in our Consolidated Statement of Income:

(Canadian $ in millions, except as noted)		2021		2020		2019
Combined Canadian federal and provincial income taxes at the statutory tax rate	**2,729**	**26.6%**	1,688	26.6%	1,934	26.6%
Increase (decrease) resulting from:						
Tax-exempt income from securities	**(232)**	**(2.3)**	(247)	(3.9)	(220)	(3.0)
Foreign operations subject to different tax rates	**(137)**	**(1.3)**	(175)	(2.8)	(158)	(2.2)
Write-down of goodwill	**202**	**2.0**	–	–	–	–
Change in tax rate for deferred taxes	**11**	**0.1**	(4)	(0.1)	3	–
Income attributable to investments in associates and joint ventures	**(56)**	**(0.6)**	(39)	(0.6)	(37)	(0.5)
Other	**(13)**	**(0.1)**	28	0.5	(8)	(0.1)
Provision for income taxes in the Consolidated Statement of Income and effective tax rate	**2,504**	**24.4%**	1,251	19.7%	1,514	20.8%

Components of Deferred Tax Balances

(Canadian $ in millions)

Deferred Tax Asset (Liability)	Net asset, October 31, 2020	Benefit (expense) to income statement	Benefit (expense) to equity	Translation and other	Net asset, October 31, 2021
Allowance for credit losses	849	**(194)**	**–**	**(4)**	**651**
Employee future benefits	337	**2**	**(9)**	**–**	**330**
Deferred compensation benefits	416	**270**	**–**	**(1)**	**685**
Other comprehensive income	(358)	**–**	**250**	**–**	**(108)**
Tax loss carryforwards	87	**(53)**	**–**	**–**	**34**
Tax credits	31	**(31)**	**–**	**–**	**–**
Premises and equipment	(361)	**(39)**	**–**	**–**	**(400)**
Pension benefits	78	**104**	**(330)**	**–**	**(148)**
Goodwill and intangible assets	(237)	**(6)**	**–**	**2**	**(241)**
Securities	11	**(62)**	**–**	**–**	**(51)**
Other	512	**(175)**	**10**	**(4)**	**343**
Net deferred tax assets (liabilities)	1,365	**(184)**	**(79)**	**(7)**	**1,095**
Comprising					
Deferred tax assets	1,473				**1,287**
Deferred tax liabilities	(108)				**(192)**
Net deferred tax assets (liabilities)	1,365	**–**	**–**	**–**	**1,095**

(Canadian $ in millions)

Deferred Tax Asset (Liability)	Net asset, November 1, 2019 (1)	Benefit (expense) to income statement	Benefit (expense) to equity	Translation and other	Net asset, October 31, 2020
Allowance for credit losses	511	334	–	4	849
Employee future benefits	325	11	1	–	337
Deferred compensation benefits	483	(69)	–	2	416
Other comprehensive income	(143)	–	(218)	3	(358)
Tax loss carryforwards	145	(59)	–	1	87
Tax credits	189	(189)	–	31	31
Premises and equipment	(282)	(78)	–	(1)	(361)
Pension benefits	27	(35)	86	–	78
Goodwill and intangible assets	(217)	(18)	–	(2)	(237)
Securities	50	(39)	–	–	11
Other	441	55	–	16	512
Net deferred tax assets (liabilities)	1,529	(87)	(131)	54	1,365
Comprising					
Deferred tax assets	1,589				1,473
Deferred tax liabilities	(60)				(108)
Net deferred tax assets (liabilities)	1,529	–	–	–	1,365

(1) Includes IFRS 16 adoption adjustment of $21 million (refer to Note 1).

Canadian tax authorities have reassessed us for additional income tax and interest in an amount of approximately $1,210 million, to date, in respect of certain 2011 – 2016 Canadian corporate dividends. Those reassessments denied certain dividend deductions on the basis that the dividends were received as part of a "dividend rental arrangement". The tax rules raised by the Canadian tax authorities were prospectively addressed in the 2015 and 2018 Canadian federal budgets. In October 2021, we filed Notices of Appeal with the Tax Court of Canada and the matter is now in litigation. In the future, we expect to be reassessed for significant income tax for similar activities. We remain of the view that our tax filing positions were appropriate and intend to challenge all reassessments. However, if such challenges are unsuccessful, the additional expense would negatively impact our net income.

Note 23: Earnings Per Share

Basic earnings per share is calculated by dividing net income, after deducting dividends payable on preferred shares and distributions payable on other equity instruments, by the daily average number of fully paid common shares outstanding throughout the year.

Diluted earnings per share is calculated in the same manner, with further adjustments made to reflect the dilutive impact of instruments convertible into our common shares.

The following table presents our basic and diluted earnings per share:

(Canadian $ in millions, except as noted)	2021	2020	2019
Basic Earnings Per Common Share			
Net income	**7,754**	5,097	5,758
Dividends on preferred shares and distributions on other equity instruments	**(244)**	(247)	(211)
Net income available to common shareholders	**7,510**	4,850	5,547
Weighted-average number of common shares outstanding (in thousands)	**647,163**	641,424	638,881
Basic earnings per common share (Canadian $)	**11.60**	7.56	8.68
Diluted Earnings Per Common Share			
Net income available to common shareholders adjusted for impact of dilutive instruments	**7,510**	4,850	5,547
Weighted-average number of common shares outstanding (in thousands)	**647,163**	641,424	638,881
Effect of dilutive instruments			
Stock options potentially exercisable (1)	**6,403**	3,433	5,326
Common shares potentially repurchased	**(4,890)**	(2,729)	(3,847)
Weighted-average number of diluted common shares outstanding (in thousands)	**648,676**	642,128	640,360
Diluted earnings per common share (Canadian $)	**11.58**	7.55	8.66

(1) In computing diluted earnings per share, we did not exclude any stock options outstanding for the year ended October 31, 2021 as the average share price for the year exceeded the exercise price. For the years ended October 31, 2020 and 2019, we excluded average stock options outstanding 3,146,040 and 1,177,152 with a weighted-average exercise price of $99.57 and $101.83, respectively, as the average share price for the year did not exceed the exercise price.

Note 24: Commitments, Guarantees, Pledged Assets, Provisions and Contingent Liabilities

In the normal course of business, we enter into a variety of contracts under which we may be required to make payments to reimburse a counterparty for a loss if a third party does not perform according to the terms of a contract or does not make payments when due under the terms of a debt instrument, and contracts under which we provide indirect guarantees of the indebtedness of another party, all of which are considered guarantees.

Guarantees that qualify as derivatives are accounted for in accordance with the policy for derivative instruments (refer to Note 8). For guarantees that do not qualify as derivatives, the liability is initially recorded at fair value, which is generally the fee received. Subsequently, guarantees are recorded at the higher of the initial fair value, less amortization to recognize any fee income earned over the period, and our best estimate of the amount required to settle the obligation. Any change in the liability is reported in our Consolidated Statement of Income.

We enter into a variety of commitments, including off-balance sheet credit instruments, such as backstop liquidity facilities, securities lending, letters of credit, credit default swaps and commitments to extend credit, as a method of meeting the financial needs of our customers. These commitments include contracts where we may be required to make payments to a counterparty, based on changes in the value of an asset, liability or equity security that the counterparty holds, due to changes in an underlying interest rate, foreign exchange rate or other variable. The contractual amount of our commitments represents our maximum undiscounted potential exposure, before possible recoveries under recourse and collateral provisions. Collateral requirements for these instruments are consistent with our collateral requirements for loans.

A large majority of these commitments expire without being drawn upon. As a result, the total contractual amounts may not be representative of the funding likely to be required for these commitments.

We strive to limit credit risk by dealing only with counterparties that we believe are creditworthy, and we manage our credit risk for these instruments using the same credit risk process that is applied to loans and other credit assets.

The maximum amount payable related to our various commitments is as follows:

(Canadian $ in millions)	2021	2020
Financial Guarantees		
Standby letters of credit	**22,165**	23,144
Credit default swaps (1)	**5,158**	1,795
Other Credit Instruments		
Backstop liquidity facilities (2)	**12,895**	5,601
Securities lending	**3,909**	4,349
Documentary and commercial letters of credit	**1,481**	1,034
Commitments to extend credit (3)	**174,327**	180,384
Other commitments (4)	**8,070**	5,302
Total	**228,005**	221,609

(1) The fair value of the related derivatives included in our Consolidated Balance Sheet was $(4) million as at October 31, 2021 ($(8) million as at October 31, 2020).
(2) Effective October 31, 2021, we deconsolidated our investment in Fairway Financial Company LLC and the total committed undrawn liquidity facility provided to the vehicle was $8,095 million as at October 31, 2021.
(3) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at our discretion.
(4) Other commitments include $1,649 million as at October 31, 2021 ($1,763 million as at October 31, 2020) of underwriting commitments that are extended but not yet accepted by the borrower.

Certain comparative figures have been reclassified to conform with the current year's presentation.

Financial Guarantees

Standby letters of credit represent our obligation to make payments to third parties on behalf of customers if they are unable to make the required payments or meet other contractual requirements. The majority have a term of one year or less. Collateral requirements for standby letters of credit and guarantees are consistent with our collateral requirements for loans. Standby letters of credit and guarantees include our guarantee of a subsidiary's debt directly provided to a third party.

Written credit default swaps require us to compensate a counterparty following the occurrence of a credit event in relation to a specified reference obligation, such as a bond or a loan. The terms of these contracts range from less than one year to 10 years. Refer to Note 8 for details.

Other Credit Instruments

Backstop liquidity facilities are provided to ABCP programs administered by us as an alternative source of financing when ABCP markets cannot be accessed. The terms of the backstop liquidity facilities do not require us to advance money to these programs in the event of insolvency of the borrower. The average term of these liquidity facilities is approximately 2 to 5 years.

We lend eligible customers' securities to third-party borrowers who have been evaluated for credit risk using the same credit risk process that is applied to loans and other credit assets. In connection with these activities, we may provide indemnification to clients against losses resulting from the failure of the borrower to return loaned securities when due. All borrowings are fully collateralized with cash or marketable securities. As securities are loaned, we require borrowers to maintain collateral that is equal to or in excess of 100% of the fair value of the securities borrowed. The collateral is revalued on a daily basis.

Documentary and commercial letters of credit represent our agreement to honour drafts presented by a third party upon completion of specific activities.

Commitments to extend credit represent our commitment to our customers to grant them credit in the form of loans or other financings for specific amounts and maturities, subject to their meeting certain conditions.

Other commitments include commitments to fund external private equity funds and investments in equity and debt securities at market value at the time the commitments are drawn. In addition, we act as underwriter for certain new issuances under which we, alone or together with a syndicate of financial institutions, purchase the new issue for resale to investors.

Indemnification Agreements

In the normal course of operations, we enter into various agreements that provide general indemnifications. These indemnifications typically occur in connection with sales of assets, securities offerings, service contracts, director contracts, membership agreements, clearing arrangements, derivative contracts and leasing transactions. Based on historical experience, we expect the risk of loss to be remote.

Exchange and Clearinghouse Guarantees

We are a member of several securities and futures exchanges and central counterparties. Membership in certain of these organizations may require us to pay a pro rata share of the losses incurred by the organization in the event of default of another member. It is difficult to estimate our maximum exposure under these membership agreements, since this would require an assessment of future claims that may be made against us that have not yet occurred. Based on historical experience, we expect the risk of material loss to be remote.

Pledged Assets and Collateral

In the ordinary course of business, we enter into trading, lending and borrowing activities that require us to pledge assets or provide collateral. Pledging and collateral transactions are typically conducted under terms and conditions that are usual and customary to these activities. If there is no default, the securities or their equivalents must be returned by the pledgee upon satisfaction of the obligation.

The following table summarizes our pledged assets and collateral, and the activities to which they relate:

(Canadian $ in millions)	**2021**	2020
Bank Assets		
Cash and due from banks	**110**	111
Securities (1)	**82,975**	75,104
Loans	**54,656**	58,974
Other assets	**6,436**	6,344
	144,177	140,533
Third-party Assets (2)		
Collateral received and available for sale or re-pledging	**180,705**	169,197
Less: Collateral not sold or re-pledged	**(46,278)**	(58,312)
	134,427	110,885
	278,604	251,418

(Canadian $ in millions)	**2021**	2020
Uses of pledged assets and collateral		
Clearing systems, payment systems and depositories	**9,464**	7,550
Foreign governments and central banks	**110**	111
Obligations related to securities sold short	**32,073**	29,376
Obligations related to securities sold under repurchase agreements	**87,894**	80,962
Securities borrowing and lending (3)	**77,456**	58,791
Derivatives transactions	**11,439**	9,613
Securitization	**26,075**	31,417
Covered bonds	**26,340**	25,948
Other	**7,753**	7,650
Total pledged assets and collateral	**278,604**	251,418

(1) Includes NHA mortgage-backed securities of $4,519 million, which are included in loans in our Consolidated Balance Sheet ($6,121 million as at October 31, 2020).
(2) Includes on-balance sheet securities borrowed or purchased under resale agreements andoff-balance sheet collateral received.
(3) Includes off-balance sheet securities borrowing and lending.

Lease Commitments

We have entered into a number of non-cancellable leases for premises and equipment. Our computer and software leases are typically fixed for one term. Leases that we have signed but have not yet taken possession of, were $248 million as at October 31, 2021 ($991 million as at October 31, 2020).

Provisions and Contingent Liabilities

Provisions are recognized when we have a legal or constructive obligation as a result of past events, such as contractual commitments, legal or other obligations for which we can reliably estimate the obligation, and it is probable we will be required to settle the obligation. We recognize as a provision our best estimate of the amount required to settle the obligations as of the balance sheet date, taking into account the risks and uncertainties surrounding the obligations. Provisions are recorded in other liabilities on the Consolidated Balance Sheet. Contingent liabilities are potential obligations arising from past events, the existence of which will only be confirmed by the occurrence or non-occurrence of one or more future events not wholly within our control, and are not included in the table below.

Legal Proceedings

The bank and its subsidiaries are party to legal proceedings, including regulatory investigations, in the ordinary course of business. We review the status of these proceedings regularly and establish provisions when in our judgment it becomes probable that we will incur a loss and the amount can be reliably estimated. The bank's provisions represent our best estimates based upon currently available information for proceedings for which estimates can be made. However, the bank's provisions may differ significantly from actual losses as a result of, for example, the inherent uncertainty of the various potential outcomes of such proceedings; the varying stages of the proceedings; the existence of multiple defendants whose share of liability may not yet be determined; unresolved issues in such proceedings, some of which involve novel legal theories and interpretations; the fact that the underlying matters will change from time to time; and such proceedings may involve very large or indeterminate damages. While it is inherently difficult to predict the ultimate outcome of these proceedings, based on our current knowledge, we do not expect the outcome of any of these proceedings, individually or in the aggregate, to have a material adverse effect on the consolidated financial position or the results of operations of the bank. However, because of the factors listed above, as well as other uncertainties inherent in litigation and regulatory matters, there is a possibility that the ultimate resolution of legal or regulatory investigations may be material to the bank's consolidated financial position or its results of operations for any particular reporting period.

BMO and its subsidiaries are named as defendants or are otherwise involved in a substantial number of legal proceedings. BMO Harris Bank N.A. (BMO Harris), as successor to M&I Marshall and Ilsley Bank (M&I), has been named as the defendant in a lawsuit filed in the U.S. Bankruptcy Court for the District of Minnesota (Bankruptcy Court) in connection with a Ponzi scheme carried out by Thomas J. Petters and certain affiliated individuals and entities (collectively, Petters) between 1994 and 2008. The lawsuit, brought by a Trustee in bankruptcy proceedings for certain Petters entities, alleges that between 1999 and 2008, M&I (and a predecessor bank) facilitated the Ponzi scheme operated by Petters. BMO denies these allegations and continues to defend itself vigorously. The Trustee seeks US$1.9 billion in compensatory damages, plus prejudgment interest, punitive damages, and attorneys' fees. The Bankruptcy Court: (i) denied BMO Harris's motion for summary judgement; (ii) granted the Trustee's motion for sanctions based on the alleged spoliation of evidence; and (iii) transferred the case to the U.S. District Court for the District of Minnesota (District Court) for trial. BMO Harris filed an objection to the spoliation sanctions, which is still pending before the District Court. BMO Harris anticipates that the trial in this case will take place no earlier than late 2022.

In June 2021, the Ontario Superior Court approved the settlement of $100 million relating to a class action involving BMO Nesbitt Burns Inc., BMO Investorline Inc. and BMO Trust Company regarding disclosures of foreign exchange conversion spreads when converting foreign exchange in registered accounts prior to a system change in 2011.

Restructuring Charges

Provisions for restructuring charges as at October 31, 2021 are $136 million ($336 million as at October 31, 2020), which include severance-related costs to improve efficiency, and accelerate delivery against key bank-wide initiatives focused on digitization, organizational redesign and simplification of the way we do business. This represents our best estimate of the amount that will ultimately be paid out.

Changes in the provision balance during the year were as follows:

(Canadian $ in millions)	**2021**	2020
Balance at beginning of year	**472**	680
Additional provisions/increase in provisions	**166**	141
Provisions utilized	**(340)**	(334)
Amounts reversed	**(44)**	(16)
Foreign exchange and other	**(6)**	1
Balance at end of year (1)	**248**	472

(1) Balance includes severance obligations, restructuring charges and legal provisions.

Note 25: Operating and Geographic Segmentation

Operating Groups

We conduct our business through three operating groups, each of which has a distinct mandate. We determine our operating groups based on our management structure and therefore these groups, and the results attributed to them, may not be comparable with those of other financial services companies. We evaluate the performance of our groups using reported and adjusted measures, such as net income, revenue growth, return on equity, and non-interest expense-to-revenue (efficiency) ratio, as well as operating leverage.

Personal and Commercial Banking

Personal and Commercial Banking (P&C) is comprised of two operating segments: Canadian Personal and Commercial Banking and U.S. Personal and Commercial Banking.

Canadian Personal and Commercial Banking

Canadian Personal and Commercial Banking (Canadian P&C) provides a full range of financial products and services to eight million customers. Personal Banking provides financial solutions through a network of almost 900 branches, contact centres, digital banking platforms and over 3,300 automated teller machines. Commercial Banking serves clients across Canada and delivers sector and industry expertise, as well as a local presence.

U.S. Personal and Commercial Banking

U.S. Personal and Commercial Banking (U.S. P&C) offers a broad range of products and services. Our retail and small and mid-sized business banking customers are served through our branches, contact centres, online and mobile banking platforms, and automated banking machines across eight states. Commercial Banking serves clients across the United States and delivers sector and industry expertise and local presence.

BMO Wealth Management

BMO's group of wealth management businesses (BMO WM) serves a full range of client segments, from mainstream to ultra high net worth and institutional, with a broad offering of wealth management products and services, including insurance products.

BMO Capital Markets

BMO Capital Markets (BMO CM) is a North American-based financial services provider offering a complete range of products and services to corporate, institutional and government clients. Through our Investment and Corporate Banking and Global Markets lines of business, we operate in 32 locations around the world, including 18 offices in North America.

Corporate Services

Corporate Services consists of Corporate Units and Technology and Operations (T&O). Corporate Units provide enterprise-wide expertise, governance and support in a variety of areas, including strategic planning, risk management, finance, legal and regulatory compliance, human resources, communications, marketing, real estate and procurement. T&O develops, monitors, manages and maintains governance of information technology including data and analytics, and also provides cyber security and operations services.

The costs of these Corporate Units and T&O services are largely transferred to the three operating groups (P&C, BMO WM and BMO CM), with any remaining amounts retained in Corporate Services results. As such, Corporate Services results largely reflect the impact of residual treasury-related activities, the elimination of taxable equivalent adjustments and residual unallocated expenses.

Basis of Presentation

The results of these operating groups are based on our internal financial reporting systems. The accounting policies used in these segments are generally consistent with those followed in the preparation of our consolidated financial statements, as disclosed in Note 1 and throughout the consolidated financial statements. Income taxes presented below may not be reflective of taxes paid in each jurisdiction in which we operate. Income taxes are generally applied to each segment based on a statutory tax rate and may be adjusted for items and activities specific to each segment. A notable accounting measurement difference is the taxable equivalent basis adjustment, as described below.

Periodically, certain business lines and units within the business lines are transferred between client and corporate support groups to more closely align our organizational structure with our strategic priorities. In addition, revenue and expense allocations are updated to more accurately align with current experience. Results for prior periods are restated to conform with the current year's presentation.

Taxable Equivalent Basis

We analyze revenue on a taxable equivalent basis (teb) at the operating group level. Revenue and the provision for income taxes are increased on tax-exempt securities to an equivalent before-tax basis to facilitate comparisons of income between taxable and tax-exempt sources. The offset to the operating segments' teb adjustments is reflected in Corporate Services revenue and provision for income taxes. The teb adjustment for the year ended October 31, 2021 was $315 million ($335 million in 2020 and $296 million in 2019).

Inter-Group Allocations

Various estimates and allocation methodologies are used in the preparation of the operating groups' financial information. Overhead expenses are allocated to operating groups using allocation formulas applied on a consistent basis. Operating group net interest income reflects internal funding charges and credits on the groups' assets, liabilities and capital at market rates, taking into account relevant terms and currency considerations. The offset of the net impact of these charges and credits is reflected in Corporate Services. These inter-group allocations are also applied to the geographic segmentation.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Our results and average assets, grouped by operating segment, are as follows:

(Canadian $ in millions)	Canadian P&C	U.S. P&C	BMO WM	BMO CM	Corporate Services (1)	2021 Total
Net interest income (2)	**6,561**	**4,268**	**982**	**3,115**	**(616)**	**14,310**
Non-interest revenue	**2,225**	**1,243**	**6,071**	**3,011**	**326**	**12,876**
Total Revenue	**8,786**	**5,511**	**7,053**	**6,126**	**(290)**	**27,186**
Provision for (recovery of) credit losses on impaired loans	**493**	**22**	**4**	**11**	**(5)**	**525**
Provision for (recovery of) credit losses on performing loans	**(116)**	**(166)**	**(16)**	**(205)**	**(2)**	**(505)**
Total provision for (recovery of) credit losses	**377**	**(144)**	**(12)**	**(194)**	**(7)**	**20**
Insurance claims, commissions and changes in policy benefit liabilities	**–**	**–**	**1,399**	**–**	**–**	**1,399**
Depreciation and amortization	**526**	**487**	**283**	**269**	**–**	**1,565**
Non-interest expense	**3,511**	**2,310**	**3,433**	**3,167**	**1,523**	**13,944**
Income (loss) before taxes	**4,372**	**2,858**	**1,950**	**2,884**	**(1,806)**	**10,258**
Provision for (recovery of) income taxes	**1,135**	**669**	**476**	**744**	**(520)**	**2,504**
Reported net income (loss)	**3,237**	**2,189**	**1,474**	**2,140**	**(1,286)**	**7,754**
Average assets (3)	**262,953**	**129,009**	**48,232**	**372,475**	**168,471**	**981,140**

	Canadian P&C	U.S. P&C	BMO WM	BMO CM	Corporate Services (1)	2020 Total
Net interest income (2)	6,105	4,345	900	3,320	(699)	13,971
Non-interest revenue	1,930	1,186	5,808	2,006	285	11,215
Total Revenue	8,035	5,531	6,708	5,326	(414)	25,186
Provision for credit losses on impaired loans	787	418	4	310	3	1,522
Provision for credit losses on performing loans	623	441	18	349	–	1,431
Total provision for credit losses	1,410	859	22	659	3	2,953
Insurance claims, commissions and changes in policy benefit liabilities	–	–	1,708	–	–	1,708
Depreciation and amortization	517	563	295	243	–	1,618
Non-interest expense	3,375	2,512	3,224	2,993	455	12,559
Income (loss) before taxes	2,733	1,597	1,459	1,431	(872)	6,348
Provision for (recovery of) income taxes	706	320	363	344	(482)	1,251
Reported net income (loss)	2,027	1,277	1,096	1,087	(390)	5,097
Average assets (3)	251,471	137,644	45,573	369,518	138,244	942,450

	Canadian P&C	U.S. P&C	BMO WM	BMO CM	Corporate Services (1)	2019 Total
Net interest income (2)	5,885	4,216	935	2,390	(538)	12,888
Non-interest revenue	2,099	1,162	6,727	2,369	238	12,595
Total Revenue	7,984	5,378	7,662	4,759	(300)	25,483
Provision for (recovery of) credit losses on impaired loans	544	160	2	52	(7)	751
Provision for (recovery of) credit losses on performing loans	63	37	(2)	28	(5)	121
Total provision for (recovery of) credit losses	607	197	–	80	(12)	872
Insurance claims, commissions and changes in policy benefit liabilities	–	–	2,709	–	–	2,709
Depreciation and amortization	355	459	230	161	–	1,205
Non-interest expense	3,481	2,677	3,293	3,118	856	13,425
Income (loss) before taxes	3,541	2,045	1,430	1,400	(1,144)	7,272
Provision for (recovery of) income taxes	917	434	371	309	(517)	1,514
Reported net income (loss)	2,624	1,611	1,059	1,091	(627)	5,758
Average assets (3)	237,742	126,539	40,951	342,626	85,394	833,252

(1) Corporate Services includes Technology and Operations.
(2) Operating groups report on a taxable equivalent basis – see Basis of Presentation section.
(3) Included within average assets are average earning assets, which are comprised of deposits with other banks, deposits at central banks, reverse repos, loans and securities. Total average earning assets for 2021 are $897,302, including $248,215 for Canadian P&C, $122,166 for U.S. P&C, and $526,921 for all other operating segments including Corporate (2020 - Total: $853,336, Canadian P&C: $234,953, U.S. P&C: $130,190 and all other operating segments: $488,193; 2019 - Total: $759,395, Canadian P&C: $222,260, U.S. P&C: $119,640 and all other operating segments: $417,495).

Certain comparative figures have been reclassified to conform with the current year's presentation.

Geographic Information
We operate primarily in Canada and the United States, but we also have operations in theUnited Kingdom, Europe, the Caribbean and Asia, which are grouped in other countries in the table below. We allocate our results by geographic region based on the location of the unit responsible for managing the related assets, liabilities, revenues and expenses.

Our results and average assets, grouped by geographic region, are as follows:

(Canadian $ in millions)				2021
	Canada	**United States**	**Other countries**	**Total**
Total Revenue	**15,983**	**9,242**	**1,961**	**27,186**
Income (loss) before taxes	**6,242**	**4,224**	**(208)**	**10,258**
Reported net income (loss)	**4,809**	**3,254**	**(309)**	**7,754**
Average Assets	**544,652**	**376,102**	**60,386**	**981,140**
				2020
Total Revenue	14,515	8,659	2,012	25,186
Income before taxes	3,815	1,891	642	6,348
Reported net income	3,021	1,554	522	5,097
Average Assets	522,155	361,651	58,644	942,450
				2019
Total Revenue	14,998	8,282	2,203	25,483
Income before taxes	4,218	2,367	687	7,272
Reported net income	3,313	1,903	542	5,758
Average Assets	462,427	316,983	53,842	833,252

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 26: Significant Subsidiaries

As at October 31, 2021, the bank, either directly or indirectly through its subsidiaries, controls the following significant operating subsidiaries.

Significant subsidiaries (1)(2)	Head or principal office	Book value of shares owned by the bank (Canadian $ in millions)
Bank of Montreal (China) Co. Ltd.	Beijing, China	411
Bank of Montreal Europe plc	Dublin, Ireland	1,001
Bank of Montreal Holding Inc. and subsidiaries , including:	Toronto, Canada	35,384
Bank of Montreal Mortgage Corporation	Calgary, Canada	
BMO Mortgage Corp.	Vancouver, Canada	
BMO Investments Limited	Hamilton, Bermuda	
BMO Reinsurance Limited	St. Michael, Barbados	
BMO Nesbitt Burns Holdings Corporation	Toronto, Canada	
BMO Nesbitt Burns Inc.	Toronto, Canada	
BMO Investments Inc.	Toronto, Canada	
BMO InvestorLine Inc.	Toronto, Canada	
BMO Capital Markets Limited	London, England	310
BMO Financial Corp. and subsidiaries , including:	Chicago, United States	26,775
BMO Asset Management Corp. and subsidiaries	Chicago, United States	
BMO Capital Markets Corp.	New York, United States	
BMO Family Office, LLC	Palo Alto, United States	
BMO Harris Bank National Association and subsidiaries , including:	Chicago, United States	
BMO Harris Investment Company LLC	Chicago, United States	
BMO Harris Financing, Inc. and subsidiaries	Chicago, United States	
BMO Global Asset Management (Asia) Limited (3)	Hong Kong, China	
BMO Global Asset Management (Europe) Limited and subsidiaries (3), including:	London, England	395
BMO Asset Management (Holdings) plc and subsidiaries (3)	London, England	
BMO Life Insurance Company and subsidiaries , including:	Toronto, Canada	1,369
BMO Life Holdings (Canada), ULC	Halifax, Canada	
BMO Life Assurance Company	Toronto, Canada	
BMO Trust Company	Toronto, Canada	589
LGM Investments Limited (3)	London, England	39
Pyrford International Limited (3)	London, England	73

(1) Each subsidiary is incorporated or organized under the laws of the state or country in which the principal office is situated, except for BMO Financial Corp., BMO Asset Management Corp., BMO Capital Markets Corp., BMO Harris Financing, Inc., and BMO Family Office, LLC, which are incorporated under the laws of the state of Delaware, United States. BMO Asset Management (Holdings) plc is incorporated under the laws of Scotland. BMO Harris Investment Company LLC is organized under the laws of the state of Nevada, United States.
(2) Unless otherwise noted, the bank, either directly or indirectly through its subsidiaries, owns 100% of the outstanding voting shares of each subsidiary.
(3) These subsidiaries are part of the sale of our EMEA asset management business which was completed on November 8, 2021. Refer to Note 10 for further information.

Significant Restrictions

Our ability to transfer funds between our subsidiaries may be restricted by statutory, contractual, capital and regulatory requirements. Restrictions include:

- Assets pledged as security for various liabilities we incur. Refer to Note 24 for details.
- Assets of our consolidated structured entities that are held for the benefit of the note holders. Refer to Note 7 for details.
- Assets held by our insurance subsidiaries. Refer to Note 12 for details.
- Regulatory and statutory requirements that reflect capital and liquidity requirements.
- Funds required to be held with central banks. Refer to Note 2 for details.

Note 27: Related Party Transactions

Related parties include subsidiaries, joint ventures, associates, employee future benefit plans and key management personnel and their close family members. Close family members include spouses, common-law partners and dependent minors. Transactions with our subsidiaries are eliminated on consolidation, and are not disclosed as related party transactions.

Key Management Personnel Compensation

Key management personnel is defined as those persons having authority and responsibility for planning, directing and/or controlling the activities of an entity, being the members of our Board of Directors (directors) and certain senior executives.

The following table presents the compensation of our key management personnel:

(Canadian $ in millions)	**2021**	2020	2019
Base salary and incentives	**22**	20	22
Post-employment benefits	**3**	3	2
Share-based payments (1)	**32**	32	43
Total key management personnel compensation	**57**	55	67

(1) Amounts included in share-based payments are the fair values of awards granted in the year.

We offer senior executives market interest rates on credit card balances, a fee-based subsidy on annual credit card fees, and a select suite of customer loan and mortgage products at rates normally accorded to preferred customers. At October 31, 2021, loans to key management personnel totalled $22 million ($19 million in 2020). We have no provision for credit losses related to these amounts as at October 31, 2021 and 2020.

Directors receive a specified amount of their annual retainer in deferred stock units. Until a director's shareholdings (including deferred stock units) are eight times greater than their annual retainer, they are required to take 100% of their annual retainer and other fees in the form of either our common shares or deferred stock units. Once the shareholding requirements have been met, directors may elect to receive the remainder of such retainer fees and other remuneration in cash, common shares or deferred stock units.

Directors of our wholly owned subsidiary, BMO Financial Corp., are required to take a specified minimum amount of their annual retainer and other fees in the form of deferred stock units.

Joint Ventures and Associates

We provide banking services to our joint ventures and associates on the same terms offered to our customers for these services.

The following table presents the carrying amount of our interests in joint ventures and associates accounted for under the equity method as well as our share of the income of those entities:

(Canadian $ in millions)	Joint ventures		Associates	
	2021	2020	**2021**	2020
Carrying amount	**474**	412	**661**	573
Share of net income	**107**	99	**141**	62

We do not have any joint ventures or associates that are individually material to our consolidated financial statements.

The following table presents transactions with our joint ventures and associates:

(Canadian $ in millions)	**2021**	2020
Loans	**791**	560
Deposits	**117**	124
Fees paid for services received	**59**	63
Guarantees and commitments	**73**	57

Certain comparative figures have been reclassified to conform with the current year's presentation.

Exhibit 99.4

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CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors of Bank of Montreal:

We consent to the use of the following reports that are included in this annual report on Form 40-F:

i) our report of independent registered public accounting firm dated December 3, 2021 to the Shareholders and the Board of Directors of Bank of Montreal (the "Bank") on the consolidated financial statements of the Bank, which comprise the consolidated balance sheets as at October 31, 2021 and October 31, 2020, the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended October 31, 2021, and the related notes; and

ii) our report of independent registered public accounting firm dated December 3, 2021 to the Shareholders and the Board of Directors of the Bank on the effectiveness of internal control over financial reporting as of October 31, 2021.

each of which is contained in this annual report on Form 40-F of the Bank for the fiscal year ended October 31, 2021.

We also consent to the use of the above-mentioned reports, which are incorporated by reference, and to the reference to our firm under the heading "Experts", in the following Registration Statements of the Bank:

1. Registration Statement – Form F-3 – File No. 333-237342
2. Registration Statement – Form F-3 – File No. 333-214934

We also consent to the use of the above-mentioned reports which are incorporated by reference in the following Registration Statements of the Bank:

1. Registration Statement – Form S-8 – File No. 333-191591
2. Registration Statement – Form S-8 – File No. 333-180968
3. Registration Statement – Form S-8 – File No. 333-177579
4. Registration Statement – Form S-8 – File No. 333-177568
5. Registration Statement – Form S-8 – File No. 333-176479
6. Registration Statement – Form S-8 – File No. 333-175413
7. Registration Statement – Form S-8 – File No. 333-175412
8. Registration Statement – Form S-8 – File No. 333-113096
9. Registration Statement – Form S-8 – File No. 333-14260
10. Registration Statement – Form S-8 – File No. 33-92112
11. Registration Statement – Form S-8 – File No. 333-207739
12. Registration Statement – Form S-8 – File No. 333-237522

/s/ KPMG LLP

Chartered Professional Accountants, Licensed Public Accountants

December 3, 2021
Toronto, Canada

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Exhibit 99.5

Certifications

Pursuant to Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Darryl White, Chief Executive Officer of Bank of Montreal, certify that:

1. I have reviewed this annual report on Form 40-F (the "report") of Bank of Montreal (the "issuer");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;

4. The issuer's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and

5. The issuer's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Date: December 3, 2021

/s/ Darryl White
Darryl White
Chief Executive Officer

Exhibit 99.6

Certifications

Pursuant to Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Tayfun Tuzun, Chief Financial Officer of Bank of Montreal, certify that:

1. I have reviewed this annual report on Form 40-F (the "report") of Bank of Montreal (the "issuer");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;

4. The issuer's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and

5. The issuer's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Date: December 3, 2021

/s/ Tayfun Tuzun
Tayfun Tuzun
Chief Financial Officer

Exhibit 99.7

Certifications

Pursuant to Rule 13(a) or 15(d) under the Securities Exchange Act of 1934, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to 18 U.S.C. 1350, the undersigned officers of Bank of Montreal (the *"Bank"*), hereby certify that, to his knowledge, (a) the annual report on Form 40-F for the period ended October 31, 2021 (the *"Report"*) fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and (b) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Bank.

Date: December 3, 2021

/s/ Darryl White
Darryl White
Chief Executive Officer

Date: December 3, 2021

/s/ Tayfun Tuzun
Tayfun Tuzun
Chief Financial Officer