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, 2018 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, P.O. Box 755, Chicago, Illinois 60690 (312-461-7745)
(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	Name Of Each Exchange On Which Registered
Common Shares	**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	647,816,318
Class B Preferred Shares Series 25	9,425,607
Class B Preferred Shares Series 26	2,174,393
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 35 (Non-Viability Contingent Capital (NVCC))	6,000,000
Class B Preferred Shares Series 36 (Non-Viability Contingent Capital (NVCC))	600,000
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

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.

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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 123) contained in the Bank’s Management’s Discussion and Analysis for the fiscal year ended October 31, 2018 (“2018 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 123) contained in the 2018 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 142 of the Bank’s Consolidated Financial Statements for the fiscal year ended October 31, 2018 (“2018 Financial Statements”), 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 123) contained in the 2018 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” (page 13) identifying the 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 4, 2018), 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 122) contained in the 2018 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 "Off-Balance Sheet Arrangements" (page 77) contained in the 2018 MD&A, filed as Exhibit 99.2 to this annual report on Form 40-F, is incorporated by reference herein.

TABULAR DISCLOSURE OF CONTRACTUAL OBLIGATIONS

The information provided under the heading "Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments" (pages 107 and 108) contained in the 2018 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" (page 13) 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 4, 2018), 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) is available on the Bank's website at www.bmo.com.

NOTE ON CERTAIN ACTIVITIES

In 2014, through a subsidiary, the Bank acquired F&C Asset Management plc ("F&C"), a company located in the United Kingdom. In 2016, the Bank identified that a subsidiary of F&C maintained an investment account for an individual 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 F&C subsidiary closed that investment account in May 2016, and has engaged in no further activities with that individual. There had been no activity on that investment account from the time that the Bank identified such account until the closure of such account.

During the year ended October 31, 2018, the Bank maintained a Canadian dollar personal chequing account and personal savings account with a Canadian resident citizen that appears on the SDN list of OFAC under the Executive Order. The Bank continues to maintain these accounts and monitors their use, prohibiting access to U.S. currency and the U.S. financial system.

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 is 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/ Thomas E. Flynn
Thomas E. Flynn
Chief Financial Officer

Date: December 4, 2018

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99.3	Consolidated Financial Statements for the Fiscal Year Ended October 31, 2018
99.4	Consent of Independent Registered Public Accounting Firm dated December 4, 2018
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
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BANK OF MONTREAL



ANNUAL INFORMATION FORM

FOR THE YEAR ENDED OCTOBER 31, 2018

Dated December 4, 2018

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[1] As indicated, parts of the Bank's Consolidated Financial Statements (2018 Financial Statements) and Management's Discussion and Analysis (2018 MD&A) for the fiscal year ended October 31, 2018 are incorporated by reference into this Annual Information Form. The 2018 Financial Statements and the 2018 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, 2018

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 2019 and beyond, our strategies or future actions, our targets, expectations for our financial condition or share price, the regulatory environment in which we operate and the results of or outlook for our operations or for the Canadian, U.S. and international economies, and include statements of our management. Forward-looking statements are typically identified by words such as "will", "would", "should", "believe", "expect", "anticipate", "project", "intend", "estimate", "plan", "goal", "target", "may" and "could".

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. 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; the Canadian housing market; weak, volatile or illiquid capital and/or credit markets; interest rate and currency value fluctuations; changes in monetary, fiscal, or economic policy and tax legislation and interpretation; the level of competition in the geographic and business areas in which we operate; changes in laws or in supervisory expectations or requirements, including capital, interest rate and liquidity requirements and guidance, and the effect of such changes on funding costs; 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 and integrate acquisitions, including obtaining regulatory approvals; critical accounting estimates and the effect 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; political conditions, including changes relating to or affecting economic or trade matters; global capital markets activities; the possible effects on our business of war or terrorist activities; outbreaks of disease or illness that affect local, national or international economies; natural disasters and disruptions to public infrastructure, such as transportation, communications, power or water supply; technological changes; information and cyber security, including the threat of 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; 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 see the discussion in the Risks That May Affect Future Results section on page 79 of the 2018 MD&A and the sections related to credit and counterparty, market, insurance, liquidity and funding, operational, model, legal and regulatory, business, strategic, environmental and social, and reputation risk, in the Enterprise-Wide Risk Management section on page 78 of the 2018 MD&A, 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 our shareholders 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 on page 30 of the 2018 MD&A. 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, both broadly and in the financial services sector, we primarily consider historical economic data provided by governments, historical relationships between economic and financial variables, 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 2018 Financial Statements lists the intercorporate relationships among Bank of Montreal and its significant subsidiaries. We incorporate this Note 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 Financial Advisors, Inc.; BMO Harris Financing, Inc. and CTC myCFO, LLC, which are incorporated under the laws of the State of Delaware, U.S. F&C Asset Management plc is incorporated under the laws of Scotland.

GENERAL DEVELOPMENT OF THE BUSINESS

Three-Year History

As at October 31, 2018, BMO was the eighth largest bank in North America by assets.

On December 1, 2015, BMO completed the acquisition of General Electric Capital Corporation's (GE Capital) Transportation Finance business in the United States and Canada with net assets on closing of approximately $12.1 billion (U.S. $9.0 billion), and rebranded it BMO Transportation Finance. The acquisition built on our position as a market leader in commercial banking, and enhanced our business position in the United States by further diversifying net income, adding scale and enhancing profitability and margins. In fiscal 2017, BMO completed the integration of BMO Transportation Finance, allowing us to leverage the combined capabilities and suite of financial solutions to better meet our customers' needs.

On October 28, 2016, BMO announced the appointments of Franklin J. Techar as Vice-Chair, BMO Financial Group, Darryl White as Chief Operating Officer, BMO Financial Group, Patrick Cronin as Group Head, BMO Capital Markets, Gilles Ouellette as Group Head, BMO Asset Management and Joanna Rotenberg as Group Head, BMO Wealth Management. Each of these appointments was effective November 1, 2016.

On April 7, 2017, BMO announced its intention to appoint Darryl White, Chief Operating Officer, BMO Financial Group, to the office of Chief Executive Officer, BMO Financial Group effective November 1, 2017, as successor to William Downe, who had announced his intention to retire effective October 31, 2017. Mr. White was appointed to the Bank's board of directors on May 24, 2017. On October 31, 2017, Mr. Downe retired as Chief Executive Officer of the Bank and, on November 1, 2017, Mr. White became Chief Executive Officer.

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.

BMO has had common share buyback programs in place for several years. The 2018-2019 program expires on May 31, 2019. During the year ended October 31, 2018, the Bank repurchased and cancelled a total of 10 million common shares, 3 million of which were purchased pursuant to a specific share repurchase program agreement.

For additional information on the general development of BMO's business and our strategies for the upcoming year, see pages 25, 28, and 43 to 61 of the 2018 MD&A, which we incorporate 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 offers a broad range of products and services directly and through Canadian and non-Canadian subsidiaries, offices, and branches. As at October 31, 2018, BMO had more than 12 million customers and more than 45,000 full-time equivalent employees. The Bank has approximately 1,500 bank branches in Canada and the United States and operates internationally in major financial markets and trading areas through its offices in 27 jurisdictions. 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 select markets in the U.S. Midwest. 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 securities 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; Wealth Management; and BMO Capital Markets. Canadian P&C operates across Canada, offering a broad range of products and services, including banking, lending and treasury management. Operating predominately in the U.S. Midwest under the BMO Harris brand, U.S. P&C offers personal and commercial clients banking, lending, and treasury management products and services. Wealth Management serves a full range of clients from mainstream to ultra-high net worth and institutional, with a broad offering of wealth management products and services including insurance. Wealth Management is a global business with an active presence in markets across Canada, the United States, Europe, the Middle East and Africa (EMEA) and Asia. 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 underwriting, institutional sales and trading, corporate lending and project financing, mergers and acquisitions advisory services, securitization, treasury management, risk management and equity and fixed income research. 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, procurement, data and analytics, and innovation. T&O manages, maintains and provides governance of information technology, cyber security and operations services for BMO Financial Group.

For additional information regarding BMO's businesses, see pages 25, 28, and 43 to61 of the 2018 MD&A and Note 25 to the 2018 Financial Statements. We incorporate these pages and Note 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 making 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 our 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 "Capital Regulatory Developments" in the Enterprise-Wide Capital Management section on pages 69 to 71, "Regulatory Requirements" in the Risks That May Affect Future Results section on page 80, "Regulatory Developments" in the Liquidity and Funding Risk section on page 106, and "Legal and Regulatory Risk" on pages 112 to 114 of the 2018 MD&A, which we incorporate 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 in select markets 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. We have certified our 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. EGRRCP rulemaking will likely continue for at least the next year and may impact our U.S. operations, including with respect to any changes to the FBO Rule.

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" and "Capital Regulatory Developments" in the Enterprise-Wide Capital Management section on pages 69 to 71, "Regulatory Requirements" in the Risks That May Affect Future Results section on page 80, and "Legal and Regulatory Risk" on pages 112 to 114 of the 2018 MD&A, which we incorporate herein by reference.

This Supervision and Regulation in the United States section contains forward-looking statements. Please see the Cautionary Statement 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 Ratios", "Regulatory Capital Elements" and "Capital Regulatory Developments" in the Enterprise-Wide Capital Management section on pages 69 to 71, "Regulatory Requirements" in the Risks That May Affect Future Results section on page 80, and "Legal and Regulatory Risk" on pages 112 to 114 of the 2018 MD&A, which we incorporate herein by reference.

Competition

Canada's financial services industry is highly competitive. It includes 35 domestic banks and 53 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 our different businesses. However, our range of services compares to those of the other five major Canadian banks, and they are our direct competitors in almost all our 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, 2018. In North America, we are the eighth largest bank by assets, tenth largest by equity and by market capitalization as at October 31, 2018 for BMO. BMO is the second largest Canadian bank as measured by retail branches in Canada and the United States.

The financial services industry continues its rapid change, as technology enables newnon-traditional entrants to compete in certain segments of banking, in some cases with reduced regulatory requirements and oversight. New entrants may leverage new technologies, advanced data and analytical tools, lower cost to serve and/or faster processes to challenge traditional banks, including new business models in retail payments, consumer and commercial lending, foreign exchange and low-cost investment advisory services. Failure to keep pace with these new technologies and competition may potentially impact our overall revenues and earnings if customers choose the services of these new market entrants. While we closely monitor technology disruptors, we also continue to adapt by increasing our investment in technology and innovation to keep pace with dynamic client expectations. This includes improving our mobile and internet banking capabilities, building new branch formats, and refining our credit decisioning, analytic and modelling data and tools and, where appropriate, bringing new and enhanced customer solutions to market. We further mitigate this risk by providing our customers with access to banking services across different channels, focusing on improving customer loyalty and trust, enhancing our advanced data and analytical tools, and leveraging current and future partnerships in order to deliver an exceptional customer experience with reduced costs and simplified processes. However, matching the pace of innovation exhibited by new and differently-situated competitors may require us and policy-makers to adapt at a faster pace.

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, as well as telephone, internet, and mobile banking systems. The industry is considered mature with moderate growth, supported by an overall focus on productivity, investments in infrastructure and technology integration. Although the major banks offer similar products and services, they compete on offerings, pricing, service models and technology, as well as entering into partnerships and alliances, with a goal of gaining a strategic advantage and serving customers better. Increased competition is also evident in the drive for scale and operating efficiencies.

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 and everyday financial and investment advice. Our employees are focused on providing exceptional service to all of our customers every time they interact with us.

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 small business and commercial banking customers 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. Our Commercial bankers partner with our customers to help them grow and manage their business.

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[1] In 2018, the Bank was named the Best Commercial Bank in Canada by World Finance Magazine for the fourth consecutive year.

In Canada, Wealth Management competes with domestic banks, insurance companies, trust companies, global private banks, investment counselling firms, and mutual fund companies. Wealth Management's Canadian businesses have strong brand recognition and market position. Wealth Management has a strong market share in each of its full-service brokerage, online brokerage, and private banking businesses and investment funds. In the United States, Wealth Management competes primarily in U.S. personal wealth and asset management, with our strategic presence in the Chicago and Milwaukee area and in select high-growth wealth markets across the country. In EMEA and Asia, Wealth Management competes primarily in asset management through BMO Global Asset Management.

BMO Capital Markets operates in a highly competitive environment and our businesses face a diverse range of competitors. With approximately 2,700 professionals in 33 locations around the world, including 19 offices in North America, BMO Capital Markets works proactively with clients to provide innovative ideas and tailored financial solutions. Our 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.

Competition in the United States is more complex than in Canada, given the market's size and activity, as well as personal and commercial banking competitors at the community, regional, and national level, plus other financial service providers. U.S. P&C operations are primarily based in the six states of the U.S. Midwest (Illinois, Wisconsin, Indiana, Minnesota, Missouri and Kansas). In addition, our personal business serves customers in Arizona and Florida, while our commercial business provides targeted nationwide coverage for key specialty sectors. The personal and commercial banking environment is vibrant and competitive, and with a rising rate environment, there is added pressure on deposit market share. Indicators of sustainable economic growth within our footprint include unemployment rates that are at historic lows, higher consumer and commercial spending amid lower income taxes, encouraging credit growth and a healthy housing market. Financial conditions reflect improved business spend, driven by economic growth and the benefit from corporate tax reform. The main risks to the U.S. economic outlook relate to trade protectionism, geopolitical tensions and the possibility of rising inflation. The commercial business remains the engine of our growth, as our main priorities are to build out a presence in new markets, accelerate growth in existing markets and deepen our relationships with our current customers. We're committed to achieving growth in loans that leads our peer group by investing in talent and enhancing the customer experience. We're also committed to the development of our personal banking business through the adoption of digital solutions and progressive product offerings as we align our strategic initiatives with market trends and consumer needs. Our initiatives include operational efficiencies, market penetration efforts, online mobility and product offering enhancements. To support these initiatives as they begin to drive customer adoption and growth, we're investing in competitive digital capabilities that address the needs of our current and potential customers.

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. Canadian federal government policy discourages large banks from merging. 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.

Environmental, Social and Governance Issues

The Bank publishes an *Environmental, Social and Governance 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. Additional information about our environmental and social risks is under the heading "Risks that May Affect Future Results – Other Factors that May Affect Future Results – Environmental Events" and "Environmental and Social Risk" in the Enterprise-Wide Risk Management section on page 81 and pages 115-116 of the 2018 MD&A, which we incorporate 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 in Note 16 of the 2018 Financial Statements and under the heading "Outstanding Shares and NVCC Capital Instruments" on page 75 of the 2018 MD&A, which Note and page we incorporate herein by reference.

We cannot declare dividends on our preferred or common shares if paying those dividends would contravene the capital adequacy, liquidity, or other regulations under the Bank Act. Also, we cannot pay common share dividends unless we have paid all dividends declared and payable on the Bank's preferred shares or set aside sufficient funds to do so. 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 our dividends and our dividend payout range on page 75 of the 2018 MD&A, which we incorporate herein by reference.

DESCRIPTION OF CAPITAL STRUCTURE

The following summarizes certain provisions of our common and preferred shares. This summary is qualified in its entirety by the actual terms and conditions of such shares. For more detail on the Bank's capital structure, see pages 71 to 75 of the 2018 MD&A and Notes 16 and 19 of the 2018 Financial Statements. We incorporate those pages and Notes 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 3, 2018, 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, we need 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.

We do 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, we have 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, we need 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.

We do 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, we have 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 3, 2018, 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 35 (Non-Viability Contingent Capital (NVCC)), Class B Preferred Shares Series 36 (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)) and Class B Preferred Shares Series 44 (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.

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 following table sets out ratings the Bank has received for its outstanding securities from the rating agencies, which are current as at December 3, 2018.

	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 6
Senior debt[4]	A-	3 of 10	A2	3 of 9	AA (low)	2 of 10	AA-	2 of 10
Long Term Deposits / Legacy Senior Debt[5]	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	4 of 9	A (low)	3 of 10	A+	3 of 10
Preferred shares[3]	BBB	4 of 10	Baa3	4 of 9	Pfd-2 (high)	2 of 6	N/A	N/A
Preferred shares – NVCC[2,3]	BBB-	4 of 10	Baa3	4 of 9	Pfd-2	2 of 6	N/A	N/A
Trend/Outlook	Stable	--	Stable	--	Stable	--	Stable	--

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] It is the practice of S&P to present an issuer's preferred share ratings on both the global rating scale and on the Canadian national scale when listing the ratings for a particular issuer.
[4] Subject to conversion under the Bank Recapitalization ("Bail-In") Regime. Defined as "Junior Senior Unsecured" by Moody's, "Bail-in Eligible Senior Debt" by S&P, "Bail-in Eligible Debt" by Fitch, and "Bailinable Senior Debt" by DBRS.
[5] 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 Bank Recapitalization ("Bail-In") Regime. Defined as "Senior Unsecured" by Moody's and S&P; and "Legacy Senior" by Fitch and DBRS.

A definition of the categories of each rating as at December 3, 2018 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 DBRS and Fitch each have a stable outlook on BMO's long-term credit ratings.

On April 19, 2018, following the finalization of the Bail-In Regime in Canada, DBRS changed the trend to Stable from Negative on the long-term issuer ratings, senior debt ratings and deposit ratings of Bank of Montreal; ratings of legacy subordinated debt were downgraded by one notch for all Canadian domestic systemically important banks.

On July 16, 2018, Moody's took various actions on its ratings of Canadian banks following the introduction of a bank resolution framework. The actions included an upgrade to the ratings for BMO's senior unsecured debt and junior subordinated bank debt (NVCC). The outlook was changed to Stable from Negative.

On August 14, 2018, S&P upgraded its stand-alone credit profile on BMO to 'a' from 'a-', to reflect improvements in its assessment of BMO's risk position. S&P affirmed its 'A+/A-1' long-term and short-term issuer credit ratings on BMO and its operating subsidiaries, and the outlook remains Stable. At the same time, S&P raised its ratings on BMO's subordinated debt and additional Tier 1 instruments by one notch, reflecting improvements in the bank's stand-alone creditworthiness.

All of the rating agencies have also assigned provisional ratings to senior unsecured debt subject to theBail-In Regime. Moody's, S&P, Fitch and DBRS have assigned provisional ratings of A2, A-, AA- and AA (low) respectively.

The credit ratings that external rating agencies assign to some of our securities are important in the raising of both capital and funding to support our business operations. Maintaining strong credit ratings allows the Bank to access the capital markets at competitive pricing levels. Should our credit ratings experience a downgrade, our cost of funds would likely increase and our access to funding and capital through capital markets could be reduced. A material downgrade of our ratings could also have other consequences, including those set out in Note 8 of the 2018 Financial Statements.

Credit ratings are not recommendations to purchase, hold, or sell securities and do not address the market price or suitability of a specific security for a particular investor. 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. We 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.Q for the Class B Preferred Shares Series 25, BMO.PR.A for the Class B Preferred Shares Series 26, 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.Z for the Class B Preferred Shares Series 35 (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)) and BMO.PR.E for the Class B Preferred Shares Series 44 (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. The Class B Preferred Shares Series 16 (BMO.PR.M) and the Class B Preferred Shares Series 17 (BMO.PR.R) were redeemed by the Bank on August 25, 2018.

	BMO Common Shares	PR.M Series 16	PR.R Series 17	PR.Q Series 25	PR.A Series 26	PR.S Series 27	PR.T Series 29	PR.W Series 31	PR.Y Series 33	PR.Z Series 35	PR.B Series 38	PR.C Series 40	PR.D Series 42	PR.E Series 44
November 2017														
- High Price ($)	100.00	24.96	24.98	22.79	22.59	24.04	23.35	23.41	24.92	25.40	26.47	25.94	25.75	n.a.
- Low Price ($)	97.51	24.72	24.55	22.34	22.10	23.70	22.95	22.80	24.40	25.10	26.08	25.35	25.25	n.a.
- Volume	21,343,615	447,688	68,430	115,368	12,809	332,286	270,684	383,788	45,738	69,616	165,697	521,034	279,647	n.a.
December 2017														
- High Price ($)	101.62	25.08	25.07	23.94	23.28	24.00	23.38	23.15	25.10	25.49	26.37	25.95	25.59	n.a.
- Low Price ($)	98.61	24.88	24.74	22.25	22.38	23.03	22.31	22.25	24.06	25.10	25.90	25.25	25.00	n.a.
- Volume	24,355,569	149,078	17,816	101,896	24,158	364,439	364,974	159,955	135,638	49,477	784,350	158,506	289,015	n.a.
January 2018														
- High Price ($)	105.55	25.28	25.08	23.44	23.43	24.71	24.25	24.00	25.34	25.49	26.46	25.90	25.59	n.a.
- Low Price ($)	100.04	24.86	24.89	22.66	22.73	23.89	23.30	23.16	24.44	25.00	26.04	25.26	25.15	n.a.
- Volume	30,215,256	226,456	217,007	130,419	45,624	329,238	683,200	166,754	81,272	195,495	412,647	286,343	349,357	n.a.
February 2018														
- High Price ($)	101.35	24.95	24.85	22.93	22.88	24.40	23.94	23.57	24.86	25.10	26.49	25.57	25.42	n.a.
- Low Price ($)	93.60	24.66	24.68	22.28	22.49	23.58	23.18	22.92	24.27	24.76	25.75	25.15	24.90	n.a.
- Volume	32,985,346	594,430	233,757	96,055	13,511	170,388	320,233	434,421	50,317	132,010	135,200	315,865	332,189	n.a.
March 2018														
- High Price ($)	99.92	24.82	24.97	22.60	22.98	23.98	23.56	23.26	24.55	24.87	26.30	25.42	25.25	n.a.
- Low Price ($)	95.58	24.75	24.66	22.16	22.45	23.47	22.99	22.70	24.10	24.42	25.94	25.10	24.98	n.a.
- Volume	33,321,359	25,591	21,115	77,609	12,700	198,153	149,977	148,767	109,982	67,269	454,126	372,238	253,797	n.a.
April 2018														

- High Price ($)	98.59	25.05	25.04	22.95	23.10	23.66	23.03	22.78	24.55	25.05	26.26	25.59	25.55	n.a.
- Low Price ($)	94.67	24.70	24.80	22.20	22.45	23.10	22.57	22.42	24.03	24.47	25.83	25.18	25.00	n.a.
- Volume	22,724,888	136,682	37,355	236,947	15,960	253,421	453,247	179,848	42,910	51,103	176,444	274,428	153,576	n.a.
May 2018														
- High Price ($)	102.29	24.95	25.00	23.31	23.60	24.14	23.67	23.50	24.89	25.07	26.45	25.63	25.39	n.a.
- Low Price ($)	96.97	24.76	24.80	22.55	23.01	23.30	22.69	22.50	24.19	24.65	25.95	25.17	25.05	n.a.
- Volume	31,037,783	203,788	378,234	211,579	12,639	724,572	285,792	140,792	55,470	40,890	193,714	95,867	249,445	n.a.
June 2018														
- High Price ($)	103.89	25.14	25.10	23.11	23.42	23.70	23.34	23.10	24.88	25.35	26.27	25.42	25.09	n.a.
- Low Price ($)	99.78	24.90	24.76	22.62	23.10	23.23	23.05	22.84	24.52	24.82	26.08	25.08	24.82	n.a.
- Volume	28,311,180	67,442	112,900	37,942	7,830	447,445	137,203	234,400	31,908	57,070	164,694	229,456	221,594	n.a.
July 2018														
- High Price ($)	104.68	25.20	25.15	23.26	23.57	23.77	23.48	23.31	24.88	25.34	26.47	25.55	25.39	n.a.
- Low Price ($)	101.31	25.12	24.96	22.70	23.12	23.23	23.02	22.84	24.36	24.96	26.08	25.10	24.93	n.a.
- Volume	18,980,616	45,035	398,120	57,230	12,904	147,335	258,354	253,072	356,578	36,146	113,117	581,387	211,752	n.a.
August 2018														
- High Price ($)	107.93	24.99	25.00	23.70	24.00	23.87	23.35	23.27	24.74	25.50	26.29	25.55	25.50	n.a.
- Low Price ($)	102.26	24.97	24.97	22.95	23.25	23.50	23.10	22.98	24.50	24.89	26.09	25.27	25.11	n.a.
- Volume	26,588,582	76,315	359,727	268,049	29,636	114,377	415,311	389,001	63,037	67,616	183,284	455,240	229,247	n.a.
September 2018														
- High Price ($)	109.00	n.a.	n.a.	23.68	24.52	23.86	23.35	23.22	24.70	25.40	26.27	25.56	25.55	25.15
- Low Price ($)	105.51	n.a.	n.a.	23.41	23.93	23.39	22.93	22.69	24.39	25.00	25.93	25.27	25.04	24.90
- Volume	24,532,187	n.a.	n.a.	174,642	27,463	487,613	501,575	138,720	171,270	27,526	119,327	200,162	307,788	2,796,859
October 2018														
- High Price ($)	107.64	n.a.	n.a.	23.51	24.40	23.99	23.99	23.57	24.96	25.10	26.29	25.99	25.95	25.48
- Low Price ($)	97.39	n.a.	n.a.	23.03	23.91	22.25	22.03	21.95	23.50	24.12	25.45	24.96	24.50	24.71
- Volume	36,190,464	n.a.	n.a.	105,156	33,575	208,892	527,672	208,805	64,534	56,538	154,299	492,885	423,175	1,489,319

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. For information about the Bank's issuances of subordinated indebtedness since October 31, 2017, see the "Subordinated Debt" section on page 68 of our 2018 MD&A and Note 15 of our 2018 financial statements, which section and note are incorporated herein by reference.

DIRECTORS AND EXECUTIVE OFFICERS

Board of Directors

As at December 3, 2018, 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 Énergir, a diversified energy company	Bromont, Québec Canada	March 22, 2011
Craig Broderick Senior Director Goldman, Sachs & Co., a global investment bank	Greenwich, Connecticut	August 27, 2018
George A. Cope, C.M. President and Chief Executive Officer BCE and Bell Canada, communications companies	Toronto, Ontario Canada	July 25, 2006
Christine Edwards Capital Partner Winston & Strawn LLP, a law firm	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
Ronald H. Farmer Managing Director Mosaic Capital Partners, a management and holding company	Markham, Ontario Canada	November 25, 2003
David Harquail Chief Executive Officer Franco-Nevada Corporation, a royalty and streaming company	Toronto, Ontario	April 5, 2018
Linda S. Huber Corporate Director	New York, New York U.S.A.	April 4, 2017

DIRECTOR NAME AND PRINCIPAL OCCUPATION	MUNICIPALITY OF RESIDENCE	DIRECTOR SINCE
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
Philip S. Orsino, O.C., F.C.A. President and Chief Executive Officer Brightwaters Strategic Solutions Inc., a consulting and advisory services company	Toronto, Ontario Canada	July 1, 1999
J. Robert S. Prichard, O.C., O.Ont., FRSC Chairman of the Board, Bank of Montreal Non-Executive Chair, Torys LLP, a law firm	Toronto, Ontario Canada	July 18, 2000
Darryl White Chief Executive Officer BMO Financial Group	Toronto, Ontario Canada	May 24, 2017
Don M. Wilson III Corporate Director	Vero Beach, Florida U.S.A	March 28, 2008

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, 2013, the directors have held the principal occupations above, or other positions with the same, predecessor, or associated firms except for Mr. Broderick who before January 2018 was Chief Risk Officer of Goldman Sachs & Co., Ms. Huber who before July 2018 was the Executive Vice-President and Chief Financial Officer of Moody's Corporation, Mr. Orsino, who, before April 2014, was the President and Chief Executive Officer of Jeld-Wen Inc., 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 and Mr. White who, from November 2016 until October 2017 was Chief Operating Officer of the Bank, from November 2014 until October 2016, was Group Head, BMO Capital Markets, and, from April 2012 until October 2014, was Global Head, Investment and Corporate Banking.

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), Sophie Brochu, Dr. Martin S. Eichenbaum, David Harquail, Linda S. Huber and Philip Orsino.

Governance and Nominating Committee: Christine Edwards (Chair), Jan Babiak, George Cope, Ronald Farmer, Robert Prichard, and Don Wilson III.

Human Resources Committee: Ronald Farmer (Chair), George Cope, Christine Edwards, Lorraine Mitchelmore, Robert Prichard and Don Wilson III.

Risk Review Committee: Don Wilson III (Chair), Craig Broderick, Christine Edwards, Dr. Martin S. Eichenbaum, Ronald Farmer, Linda Huber, Eric La Flèche, Lorraine Mitchelmore, Philip Orsino and Robert Prichard.

Executive Officers

At December 1, 2018, 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 Corporation and Group Head, North America Commercial Banking	Northbrook , Illinois U.S.A.
Patrick Cronin	Chief Risk Officer	Toronto, Ontario Canada
Simon A. Fish	General Counsel	Toronto, Ontario Canada
Thomas E. Flynn	Chief Financial Officer	Toronto, Ontario Canada
Cameron Fowler	President, North American Personal and Business Banking	Toronto, Ontario Canada
Ernie Johannson	Group Head, U.S. Personal and Business Banking	Toronto, Ontario Candida
Gilles G. Ouellette	Group Head, BMO Asset Management and Vice-Chair, International	Toronto, Ontario Canada
Catherine Roche	Head, Marketing and Strategy	Toronto, Ontario Canada

EXECUTIVE OFFICER NAME	PRINCIPAL OCCUPATION	MUNICIPALITY OF RESIDENCE
Joanna Rotenberg	Group Head, BMO Wealth Management	Toronto, Ontario Canada
Richard Rudderham	Chief Human Resources Officer	West Vancouver, British Columbia Canada
Steve Tennyson	Chief Technology Officer & Operations Officer	Toronto, Ontario Canada

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, except for Catherine Roche who, prior to May 2016, was Partner and Managing Director at the Boston Consulting Group.

Shareholdings of Directors and Executive Officers

To the knowledge of the Bank, as at October 31, 2018, 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 318,887 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, 2018, 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, 2018, 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, 2018, 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 our 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 2018 Financial Statements.

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 2018 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, 2017, 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, who have prepared the Shareholders' Auditors' Reports on pages 141 and 142 of the 2018 Financial Statements. KPMG LLP have confirmed that they are independent with respect to the Bank and 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 six members make up the Bank's Audit and Conduct Review Committee: Jan Babiak (Chair), Sophie Brochu, Dr. Martin S. Eichenbaum, David Harquail, Linda S. Huber and Philip Orsino. The Committee's responsibilities and duties are set out in the Committee's charter. We include the charter 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 Mr. Orsino 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.

Ms. Brochu is a graduate in economics from Université Laval and is the President and Chief Executive Officer of Énergir (formerly Gaz Metro), part of Valener Inc., a publicly traded company. Ms. Brochu also serves on the board of another Canadian public company. Ms. Brochu is a member of the Order of Canada.

Dr. Eichenbaum received a B.Comm from McGill University and a Doctorate in Economics from the University of Minnesota. He serves 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 is Chief Executive Officer of Franco-Nevada Corporation, a publicly traded company. He is also the current Chair of the World Gold Council which works to stimulate the demand for gold on behalf of the leading gold producers. Mr. Harquail has over 35 years of experience on public and non-profit boards and task force advisories. He is currently active on the United Way Toronto & York Region Campaign Cabinet. 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. He is also a major benefactor of the School of Earth Sciences and its Mineral Exploration Research Centre (MERC) at Laurentian University in Sudbury as well as the Centre for Neuromodulation at Sunnybrook Health Sciences Centre in Toronto.

Ms. Huber was formerly Executive Vice President and Chief Financial Officer of Moody's Corporation, with executive responsibility for the corporation's global finance, information technology, communications and corporate services functions, as well as the The Moody's Foundation. 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. 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.

Mr. Orsino has a B.A. from University of Toronto and is a Fellow of the Chartered Professional Accountants of Canada. He is the President and Chief Executive Officer of Brightwaters Strategic Solutions Inc., a consulting and advisory services company. He was formerly the President and Chief Executive Officer of Jeld-Wen Inc., a global integrated manufacturer of building products until April 2014, and was also formerly the President and Chief Executive Officer of Masonite International Corporation until October 2005, which was listed on the TSX and NYSE. Mr. Orsino was appointed an Officer of the Order of Canada in 2004 and received the 2003 Canada's Outstanding CEO of the Year Award.

Shareholders' Auditors Pre-Approval Policies and Procedures and Fees

For information about the fees paid to KPMG LLP, in the years ended October 31, 2018 and 2017, and the related pre-approval policies and procedures, see page 122 of the 2018 MD&A, which we incorporate 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.

Our 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 12, 2018, in connection with the Bank's Annual Meeting of Shareholders on April 5, 2018 (the 2018 Proxy Circular). We expect the next proxy circular to be dated as of February 7, 2019, in connection with the Bank's Annual Meeting of Shareholders on April 2, 2019 (the 2019 Proxy Circular).

The 2018 Financial Statements and the 2018 MD&A for the fiscal year ended October 31, 2018 provide additional financial information.

You can get copies of this Annual Information Form, as well as copies of the 2018 Financial Statements, the 2018 MD&A, the Bank's 2018 Annual Report, and the 2018 Proxy Circular (after we have mailed these documents to shareholders) by contacting us 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 reviewing and approving the Bank's Internal Control Corporate Policy and 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 this 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 and 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 reviewing and, jointly with the Human Resources Committee, recommending to the Board the appointment,re-assignment or dismissal of the Chief Anti-Money Laundering Officer, as required; and annually assessing, in conjunction with the Human Resources Committee, the effectiveness of the Chief Anti-Money Laundering Officer, and reviewing and approving his or her mandate;

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

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

1.5.5 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 and 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, and reviewing and approving the Bank's Disclosure and Anti-Money Laundering and Anti-Terrorist Financing Corporate Policies;

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 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 environmental social and governance 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 Chairman 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 following considerations: likelihood of payment—capacity and willingness of the obligor to meet its financial commitment on a financial obligation in accordance with the terms of the obligation; nature of and provisions of the financial obligation; and protection afforded by, 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. A rating in the 'A' category 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 in the BBB category indicates that the obligation exhibits adequate protection parameters, however, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment 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 major 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. A reference to "high", "medium" or "low" reflects the relative strength within the rating category.

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

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, based on its global long-term and short-term rating scales, 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 on contractually promised payments and the expected financial loss suffered in the event of default. 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 one-year or more and reflect both on the likelihood of a default on contractually promised payments and the expected financial loss suffered in the event of default. Obligations rated in the Aa category are judged to be of high quality and are subject to very low credit risk. Obligations rated in the A category are judged to be upper-medium grade and subject to low credit risk. Obligations rated in the Baa category 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.

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" rating 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

capacity for the 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 capacity for payment is considered substantial, but of lesser credit quality than AA, and 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 is meant to give an indication of the risk that a borrower will not fulfill its full obligations in a timely manner, with respect to both dividend and principal commitments. Each rating category is 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 indicates that the preferred shares are of satisfactory credit quality.

Rating trends provide guidance in respect of DBRS's opinion regarding the outlook for a rating.

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. Short-Term Ratings are assigned to obligations whose initial maturity is viewed as "short term" based on market convention. A rating of F1+ indicates the strongest intrinsic capacity for the timely payment of financial commitments. The added "+" denotes an exceptionally strong credit feature.

Rated entities in a number of sectors, including financial and non-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 denotes expectation of very low default risk and indicates very strong capacity for payment of financial commitments; this capacity is not significantly vulnerable to foreseeable events. A rating of A denotes expectations of low default risk and the capacity for payment of financial commitments is considered strong; this capacity may, nevertheless, be more vulnerable to adverse business or economic conditions than is the case for higher ratings. Within some of the rating categories, Fitch may append the rating with the modifiers "+" or "-" to denote relative status within major rating categories.

Rating Outlooks indicate the direction a rating is likely to move over a one-to-two year period.

The "Stable" rating outlook means that the rating is not likely to change over a one to two-year period.

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MANAGEMENT'S DISCUSSION AND ANALYSIS

Management's Discussion and Analysis

BMO's Chief Executive Officer and its Chief Financial Officer have signed a statement that outlines management's responsibility for financial information in the annual consolidated financial statements and Management's Discussion and Analysis (MD&A). The statement, which can be found on page 140, 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 BMO's operations and financial condition for the years ended October 31, 2018 and 2017. The MD&A should be read in conjunction with our consolidated financial statements for the year ended October 31, 2018. The MD&A commentary is as of December 4, 2018. 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 2018, the bank prospectively adopted IFRS 9, *Financial Instruments* (IFRS 9). Prior periods have not been restated. Since November 1, 2011, the bank's financial results have been reported in accordance with IFRS. Results for years prior to 2011 have not been restated and are presented in accordance with Canadian GAAP as defined at that time (CGAAP). As such, certain growth rates and compound annual growth rates (CAGR) may not be meaningful. Prior periods have been reclassified for methodology changes and transfers of certain businesses between operating groups. See page 44.

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26 **Financial Highlights**

27 **Non-GAAP Measures**

28 **Enterprise-Wide Strategy** outlines our enterprise-wide strategy and the context in which it is developed.

29 **Caution Regarding Forward-Looking Statements** advises readers about the limitations and inherent risks and uncertainties of forward-looking statements.

30 **Economic Developments and Outlook** includes commentary on the Canadian, U.S. and international economies in 2018 and our expectations for 2019.

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43 **2018 Operating Groups Performance Review** outlines the strategies and key priorities of our operating groups and the challenges they face, along with their strengths and value drivers. It also includes a summary of their achievements in 2018, their focus for 2019, and a review of their financial performance for the year and the business environment in which they operate.
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62 **Summary Quarterly Earnings Trends, Review of Fourth Quarter 2018 Performance** and **2017 Financial Performance Review** provide commentary on results for relevant periods other than fiscal 2018.

67 **Financial Condition Review** comments on our assets and liabilities by major balance sheet category. It includes a review of our capital adequacy and our approach to optimizing our capital position to support our business strategies and maximize returns to our shareholders. It also includes a review of off-balance sheet arrangements and certain select financial instruments.
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126 **Supplemental Information** presents other useful financial tables and more historical detail.

Regulatory Filings
Our continuous disclosure materials, including our interim consolidated financial statements and interim MD&A, annual audited 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 SEC's website at www.sec.gov. BMO's Chief Executive Officer and its 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.

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Who We Are

Established in 1817, BMO Financial Group is a highly diversified financial services provider based in North America. We are the eighth largest bank in North America by assets, with total assets of $774 billion, and an engaged and diverse base of employees. BMO provides a broad range of personal and commercial banking, wealth management 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 arm, BMO Bank of Montreal. In the United States, we serve customers through BMO Harris Bank, based in the U.S. Midwest, with more than two million personal, business banking and commercial customers. We also serve customers through our wealth management businesses – BMO Global Asset Management, BMO Nesbitt Burns, BMO Private Banking, BMO Insurance and BMO InvestorLine. BMO Capital Markets, our investment and corporate banking and trading products division, provides a full suite of financial products and services to North American and international clients.

Our Financial Objectives

BMO's medium-term financial objectives for certain important performance measures are set out below. These objectives establish a range of expected performance over time. We believe we will deliver top-tier total shareholder return and meet 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 and North American peer groups.

BMO's business planning process is rigorous, sets ambitious goals and considers the 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 progress toward our strategic priorities.

Our medium-term financial objectives on an adjusted basis are to achieve average annual earnings per share (adjusted EPS) growth of 7% to 10%, earn an average annual return on equity (adjusted ROE) of 15% or more, generate average annual net operating leverage of 2% or more and maintain capital ratios that exceed regulatory requirements. These objectives are guideposts as we execute against our strategic priorities. In managing our operations and risk, we recognize that current profitability and the ability to meet these objectives in a single period must be balanced with the need to invest in our businesses for their future long-term health and growth prospects.

Our one-year adjusted EPS growth rate in 2018 was 10.1%, slightly above our target growth range of 7% to 10%. After achieving our adjusted net operating leverage target of 2% or more in each of the prior two years, adjusted net operating leverage for 2018 was 1.2%, in part reflecting softer Capital Markets revenue and continued investment in our business. Our one-year adjusted ROE was 14.6%, up from 13.7% in 2017, and nearing our target of 15% or more. We are well-capitalized with a Common Equity Tier 1 Ratio of 11.3%.

Reasons to Invest in BMO

- Diversified businesses that continue to deliver robust earnings growth and long-term value for shareholders
- Strong foundation built for growth and differentiating strengths that drive competitive advantage:
  - Large and growing North American commercial banking business with advantaged market share
  - Well-established, highly profitable flagship banking business in Canada
  - Diversified U.S. operations well positioned to capture growth opportunities
  - Award-winning wealth franchise with an active presence in markets across Canada, the United States, Europe and Asia, well positioned to accelerate growth
  - Competitively advantaged Canadian capital markets franchise with a scalable U.S. platform
  - Transformative technology architecture, data and digital capabilities delivering customer and business value
- Well-capitalized with an attractive dividend yield
- Creating sustainable efficiency and reinvestment capacity through resource optimization, simplification and innovation
- Leading employee engagement and award-winning culture
- Adherence to industry-leading standards of corporate governance, including principles that ensure our strategic goals are aligned with managing our environmental and social impacts to deliver long-term sustainable growth for our stakeholders

As at and for the periods ended October 31, 2018	1-year	5-year*	10-year*
Average annual total shareholder return	3.3	10.5	13.7
Average growth in annual EPS	3.1	5.9	9.4
Average growth in annual adjusted EPS	10.1	7.7	7.1
Average annual ROE	13.2	13.0	13.6
Average annual adjusted ROE	14.6	13.8	14.3
Compound growth in annual dividends declared per share	6.2	5.2	3.0
Dividend yield**	3.8	3.9	4.3
Price-to-earnings multiple**	12.1	12.2	12.4
Market value/book value ratio**	1.52	1.52	1.55
Common Equity Tier 1 Ratio	11.3	na	na

* 5-year and 10-year growth rates reflect growth based on CGAAP in 2008 and IFRS in 2013 and 2018, respectively.
** 1-year measure as at October 31, 2018; 5-year and 10-year measures are the average of year-end values.
na – not applicable

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

The Our Financial Objectives section above and the Enterprise-Wide Strategy and Economic Developments and Outlook sections that follow contain certain forward-looking statements. By their nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties. Please refer to the Caution Regarding Forward-Looking Statements on page 29 of this MD&A for a discussion of such risks and uncertainties and the material factors and assumptions related to the statements set forth in such sections.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Financial Highlights

(Canadian $ in millions, except as noted)	2018	2017	2016
Summary Income Statement			
Net interest income	**10,313**	10,007	9,872
Non-interest revenue	**12,724**	12,253	11,215
Revenue	**23,037**	22,260	21,087
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**1,352**	1,538	1,543
Revenue, net of CCPB	**21,685**	20,722	19,544
Provision for credit losses on impaired loans (1)	**700**	na	na
Provision for (recovery of) credit losses on performing loans (1)	**(38)**	na	na
Total provision for credit losses (1)	**662**	746	771
Non-interest expense	**13,613**	13,330	13,041
Provision for income taxes	**1,960**	1,296	1,101
Net income	**5,450**	5,350	4,631
Attributable to bank shareholders	**5,450**	5,348	4,622
Attributable to non-controlling interest in subsidiaries	**–**	2	9
Net income	**5,450**	5,350	4,631
Adjusted net income	**5,979**	5,508	5,020
Common Share Data ($, except as noted)			
Earnings per share	**8.17**	7.92	6.92
Adjusted earnings per share	**8.99**	8.16	7.52
Earnings per share growth (%)	**3.1**	14.5	5.3
Adjusted earnings per share growth (%)	**10.1**	8.5	7.4
Dividends declared per share	**3.78**	3.56	3.40
Book value per share	**64.73**	61.92	59.56
Closing share price	**98.43**	98.83	85.36
Number of common shares outstanding (in millions)			
End of period	**639.3**	647.8	645.8
Average diluted	**644.9**	652.0	646.1
Total market value of common shares ($ billions)	**62.9**	64.0	55.1
Dividend yield (%)	**3.8**	3.6	4.0
Dividend payout ratio (%)	**46.2**	44.8	49.0
Adjusted dividend payout ratio (%)	**41.9**	43.5	45.0
Financial Measures and Ratios (%)			
Return on equity	**13.2**	13.3	12.1
Adjusted return on equity	**14.6**	13.7	13.1
Return on tangible common equity	**16.2**	16.3	15.3
Adjusted return on tangible common equity	**17.5**	16.5	16.1
Net income growth	**1.9**	15.5	5.1
Adjusted net income growth	**8.6**	9.7	7.2
Revenue growth	**3.5**	5.6	8.8
Revenue growth, net of CCPB	**4.6**	6.0	7.8
Non-interest expense growth	**2.1**	2.2	6.5
Adjusted non-interest expense growth	**3.4**	3.6	5.9
Efficiency ratio, net of CCPB	**62.8**	64.3	66.7
Adjusted efficiency ratio, net of CCPB	**62.2**	62.9	64.1
Operating leverage, net of CCPB	**2.5**	3.8	1.3
Adjusted operating leverage, net of CCPB	**1.2**	2.0	2.3
Net interest margin on average earning assets	**1.51**	1.55	1.59
Effective tax rate	**26.5**	19.5	19.2
Adjusted effective tax rate	**20.7**	19.8	19.9
Total PCL-to-average Net Loans and acceptances (annualized)	**0.17**	0.20	0.22
PCL on impaired loans-to-average net loans and acceptances (annualized)	**0.18**	0.22	0.22
Balance Sheet (as at, $ millions, except as noted)			
Assets	**774,048**	709,580	687,935
Gross loans and acceptances	**404,215**	376,886	372,464
Net loans and acceptances	**402,576**	375,053	370,539
Deposits	**522,051**	479,792	470,281
Common shareholders' equity	**41,387**	40,114	38,464
Cash and securities-to-total assets ratio (%)	**29.9**	28.5	27.1
Capital Ratios (%)			
Common Equity Tier 1 Ratio	**11.3**	11.4	10.1
Tier 1 Capital Ratio	**12.9**	13.0	11.6
Total Capital Ratio	**15.2**	15.1	13.6
Leverage Ratio	**4.2**	4.4	4.2
Foreign Exchange Rates ($)			
As at Canadian/U.S. dollar	**1.3169**	1.2895	1.3411
Average Canadian/U.S. dollar	**1.2878**	1.3071	1.3251

(1) Effective the first quarter of 2018, the bank prospectively adopted IFRS 9, *Financial Instruments* (IFRS 9). Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. Prior periods have not been restated. The provision for credit losses in prior periods is comprised of both specific and collective provisions. Refer to the Changes in Accounting Policies section on page 121 for further details.

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

Adjusted results in this table are non-GAAP amounts or non-GAAP measures. Please see the Non-GAAP Measures section on page 27.

na – not applicable

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Non-GAAP Measures

Results and measures in this document are presented on a GAAP basis. Unless otherwise indicated, all amounts are in Canadian dollars, and they have been derived from our consolidated financial statements prepared in accordance with International Financial Reporting Standards (IFRS). References to GAAP mean IFRS. They are also presented on an adjusted basis that excludes the impact of certain items as set out in the table below. Results and measures that exclude the impact of Canadian/U.S. dollar exchange rate movements on our U.S. segment are non-GAAP measures (please see the Foreign Exchange section on page 34 for a discussion of the effects of changes in exchange rates on our results). Management assesses performance on a reported basis and on an adjusted basis and considers both to be useful in assessing underlying ongoing business performance. Presenting results on both bases provides readers with a better understanding of how management assesses results. It also 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 results. As such, the presentation may facilitate readers' analysis of trends, as well as comparisons with our competitors. Except as otherwise noted, management's discussion of changes in reported results in this document applies equally to changes in the corresponding adjusted results. Adjusted results and measures are non-GAAP and as such 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.

(Canadian $ in millions, except as noted)	**2018**	2017	2016
Reported Results			
Revenue	**23,037**	22,260	21,087
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**(1,352)**	(1,538)	(1,543)
Revenue, net of CCPB	**21,685**	20,722	19,544
Provision for credit losses	**(662)**	(746)	(771)
Non-interest expense	**(13,613)**	(13,330)	(13,041)
Income before income taxes	**7,410**	6,646	5,732
Provision for income taxes	**(1,960)**	(1,296)	(1,101)
Net Income	**5,450**	5,350	4,631
Diluted EPS ($)	**8.17**	7.92	6.92
Adjusting Items (Pre-tax) (1)			
Acquisition integration costs (2)	**(34)**	(87)	(104)
Amortization of acquisition-related intangible assets (3)	**(116)**	(149)	(160)
Cumulative accounting adjustment (4)	**–**	–	(85)
Restructuring costs (5)	**(260)**	(59)	(188)
Decrease in the collective allowance for credit losses (6)	**–**	76	–
Benefit from the remeasurement of an employee benefit liability (7)	**277**	–	–
Adjusting items included in reported pre-tax income	**(133)**	(219)	(537)
Adjusting Items (After tax) (1)			
Acquisition integration costs (2)	**(25)**	(55)	(71)
Amortization of acquisition-related intangible assets (3)	**(90)**	(116)	(124)
Cumulative accounting adjustment (4)	**–**	–	(62)
Restructuring costs (5)	**(192)**	(41)	(132)
Decrease in the collective allowance for credit losses (6)	**–**	54	–
Benefit from the remeasurement of an employee benefit liability (7)	**203**	–	–
U.S. net deferred tax asset revaluation (8)	**(425)**	–	–
Adjusting items included in reported net income after tax	**(529)**	(158)	(389)
Impact on diluted EPS ($)	**(0.82)**	(0.24)	(0.60)
Adjusted Results			
Revenue	**23,037**	22,260	21,171
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**(1,352)**	(1,538)	(1,543)
Revenue, net of CCPB	**21,685**	20,722	19,628
Provision for credit losses	**(662)**	(822)	(771)
Non-interest expense	**(13,480)**	(13,035)	(12,588)
Income before income taxes	**7,543**	6,865	6,269
Provision for income taxes	**(1,564)**	(1,357)	(1,249)
Net Income	**5,979**	5,508	5,020
Diluted EPS ($)	**8.99**	8.16	7.52

(1) Adjusting items are generally included in Corporate Services, with the exception of the amortization of acquisition-related intangible assets and certain acquisition integration costs, which are charged to the operating groups.

(2) Acquisition integration costs related to F&C Asset Management plc (F&C) are charged to Wealth Management. Acquisition integration costs related to BMO Transportation Finance are charged to Corporate Services, since the acquisition impacts both Canadian and U.S. P&C businesses. KGS-Alpha acquisition-related integration costs are reported in BMO Capital Markets. Acquisition integration costs are recorded in non-interest expense.

(3) These expenses were charged to the non-interest expense of the operating groups. Before-tax and after-tax amounts for each operating group are provided on pages 44, 46, 50, 54 and 58.

(4) Cumulative accounting adjustment recognized in other non-interest revenue related to foreign currency translation, largely impacting prior periods.

(5) In 2018, we recorded a restructuring charge, primarily related to severance costs, as a result of an ongoing bank-wide initiative to simplify how we work, drive increased efficiency and invest in technology to move our business forward. Restructuring charges in 2017 and 2016 were also taken as we continued to accelerate the use of technology to enhance customer experience and focused on driving operational efficiencies. Restructuring costs are included in non-interest expense in Corporate Services.

(6) Adjustments to the collective allowance for credit losses are recorded in Corporate Services provision for credit losses in 2017 and prior years.

(7) The current year included a benefit of $203 million after-tax ($277 million pre-tax) from the remeasurement of an employee benefit liability as a result of an amendment to our other employee future benefits plan for certain employees that was announced in the fourth quarter of 2018. This amount has been included in Corporate Services in non-interest expense.

(8) Charge due to the revaluation of our U.S. net deferred tax asset as a result of the enactment of the U.S. *Tax Cuts and Jobs Act*. For more information on the impact of the U.S. *Tax Cuts and Jobs Act*, see Provision for Income Taxes section on page 42.

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

Adjusted results and measures in this table are non-GAAP amounts or non-GAAP measures.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Enterprise-Wide Strategy

Our Strategy in Context

Customers inspire what we do every day.

Our aim is to deliver top-tier shareholder return as we balance our commitments to our customers and employees, the environment and the communities in which we live and work. We are unified in our focus – and we are accelerating.

Our strategy is built on a strong foundation of assets and capabilities that position us well for future growth. Adapting and innovating, we are working hard to anticipate customers' expectations and deliver growing value to shareholders, as we continue to navigate an increasingly complex world characterized by mixed macroeconomic performance, rapid advances in technology, competitive intensity and a dynamic regulatory environment.

We have a clear plan, anchored in our strategy. Although the fundamentals of our strategy remain consistent, we have refocused our priorities for 2019 to address the changing market landscape. Our group strategic priorities align with and support our enterprise-wide strategy, positioning us well to drive competitive performance. Group strategies are outlined in the 2018 Operating Groups Performance Review, which starts on page 43.

Our Strategic Priorities

- Drive leading growth in priority areas by earning customer loyalty
- Simplify, speed up, and improve productivity
- Harness the power of digital and data to grow
- Be leaders in taking and managing risk, consistent with our overall risk appetite
- Activate a high-performance culture

Our Sustainability Principles

BMO is dedicated to pursuing growth in a responsible and sustainable manner. Our sustainability principles sit alongside our strategic priorities and represent the inextricable connection between financial performance and corporate responsibility. Our success as a business depends on meeting our commitments to our community and our planet, our employees and our customers. Where they connect is the source of sustainable growth.

Social Change

Helping people adapt and thrive by embracing diversity and tailoring our products and services to meet changing expectations

Financial Resilience

Working with our customers to achieve their goals, and providing guidance and support to underserved communities

Community-Building

Fostering social and economic well-being in the places where we live, work and give back

Environmental Impact

Reducing our environmental footprint while considering the impacts of our business

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 starting on page 78 describes a number of risks, including credit and counterparty, market, insurance, liquidity and funding, operational, model, legal and regulatory, business, 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.

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 2019 and beyond, our strategies or future actions, our targets, expectations for our financial condition or share price, the regulatory environment in which we operate and the results of or outlook for our operations or for the Canadian, U.S. and international economies, and include statements of our management. Forward-looking statements are typically identified by words such as "will", "would", "should", "believe", "expect", "anticipate", "project", "intend", "estimate", "plan", "goal", "target", "may" and "could".

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. 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; the Canadian housing market, weak, volatile or illiquid capital and/or credit markets; interest rate and currency value fluctuations; changes in monetary, fiscal, or economic policy and tax legislation and interpretation; the level of competition in the geographic and business areas in which we operate; changes in laws or in supervisory expectations or requirements, including capital, interest rate and liquidity requirements and guidance, and the effect of such changes on funding costs; 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 and integrate acquisitions, including obtaining regulatory approvals; critical accounting estimates and the effect 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; political conditions, including changes relating to or affecting economic or trade matters; global capital markets activities; the possible effects on our business of war or terrorist activities; outbreaks of disease or illness that affect local, national or international economies; natural disasters and disruptions to public infrastructure, such as transportation, communications, power or water supply; technological changes; information and cyber security, including the threat of 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; 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 see the discussion in the Risks That May Affect Future Results section on page 79, and the sections related to credit and counterparty, market, insurance, liquidity and funding, operational, model, legal and regulatory, business, strategic, environmental and social, and reputation risk, in the Enterprise-Wide Risk Management section on page 78, 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 our shareholders 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 on page 30. 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, both broadly and in the financial services sector, we primarily consider historical economic data provided by governments, historical relationships between economic and financial variables, and the risks to the domestic and global economy.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Economic Developments and Outlook

Economic Developments in 2018 and Outlook for 2019

Growth in the Canadian economy moderated in 2018 after a robust expansion in 2017. Consumer spending slowed in response to higher interest rates, elevated household debt and slower employment growth. The level of housing market activity fell in the first half of the year as stricter mortgage rules took effect, although markets in most regions stabilized in the second half of the year as a result of population growth that was the highest in 27 years, reflecting record net immigration. Business investment strengthened early in the year, but weakened subsequently in response to rising concerns about trade protectionism. After a disappointing performance in 2017, export growth accelerated in response to stronger U.S. demand, a robust global economy and the relatively low value of the Canadian dollar compared with the U.S. dollar. The Bank of Canada raised its policy rate by 125 basis points over a 16-month period that ended in October 2018, and it is expected to increase rates by an additional 75 basis points before the end of 2019. After leading all other G7 countries with GDP growth of 3.0% in 2017, the rate of economic expansion in Canada is projected to moderate to 2.1% in 2018 and 2.0% in 2019, while remaining slightly above the country's longer-term potential growth rate. The unemployment rate is expected to decline modestly to a 45-year low of 5.6% before the end of 2019 from 5.8% in October 2018. Industry-wide consumer credit growth is projected to slow from an estimated 4.7% in 2018 to 3.2% in 2019. Residential mortgage growth is anticipated to moderate to below 4% in both years, the slowest pace since 2001, in response to higher borrowing costs and stricter mortgage rules. Non-financial business loan growth is projected to decelerate from an estimated 6.2% in 2018 to a still-healthy rate of 5.6% in 2019. By removing a downside risk that had been facing Canada's economy, the new United States-Mexico-Canada Agreement, assuming it is ratified by the legislatures in each country, should support an improvement in business spending and a modest increase in the value of the Canadian dollar to around US$0.78 by year-end 2019.

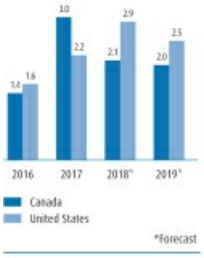
Growth in the U.S. economy strengthened in 2018 due to expansionary fiscal policies. Deregulation and tax reform, including a sizeable decrease in corporate tax rates, led to sustained increases in business investment. Consumer spending remained strong in response to reductions in personal income taxes, healthy employment growth and record levels of household wealth. However, housing market activity moderated as higher borrowing costs and rising home prices eroded affordability. Despite an appreciation of the U.S. dollar, exports strengthened in response to robust global demand. After accelerating from a rate of 2.2% in 2017 to an estimated 2.9% in 2018, real GDP growth is projected to moderate to 2.5% in 2019 as a result of higher interest rates and reduced fiscal stimulus. The continued economic expansion is expected to reduce the unemployment rate to a 49-year low of 3.5% by the end of 2019 from 3.7% in October 2018. The Federal Reserve is expected to increase policy rates by a further 75 basis points before the end of 2019. The higher cost of borrowing will likely cause industry-wide consumer credit growth to moderate from an estimated 3.9% in 2018 to 3.7% in 2019, with residential mortgage growth easing from 3.9% to 3.8%. Slower growth in business spending is projected to reduce the rate of non-financial business loan growth to a still-healthy 5.8% rate in 2019. The main risks to the U.S. economic outlook relate to trade protectionism, geopolitical tensions and the possibility of rising inflation. While the tariffs imposed to date are unlikely to markedly slow the economy, additional protectionist measures could lead to more pronounced weakness and a rising unemployment rate.

The U.S. Midwest region, which includes the six contiguous states within the BMO footprint, has benefited from the pickup in national and global economic activity and manufacturing. Growth in the region's GDP is expected to improve from 1.0% in 2017 to 2.1% in 2018 and 1.9% in 2019. However, the regional rate of growth will likely continue to lag the national rate due to slower population growth, downshifting of automobile production in Indiana and continued budgetary constraints in Illinois.

This Economic Developments and Outlook section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements on page 29.

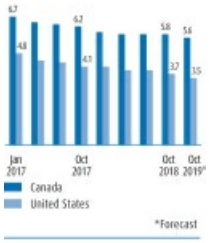
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Real Growth in Gross Domestic Product (%)



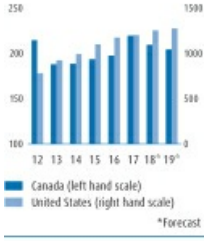
The U.S. economy is expected to grow modestly faster than the Canadian economy in 2019.

Canadian and U.S. Unemployment Rates (%)



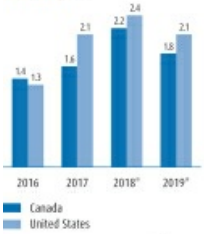
Unemployment rates in Canada and the United States are projected to further modestly decline.

Housing Starts (in thousands)



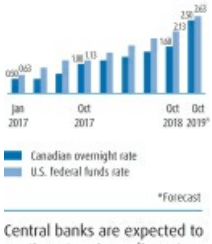
Housing market activity is expected to decline modestly in Canada, but strengthen somewhat in the United States.

Consumer Price Index Inflation (%)



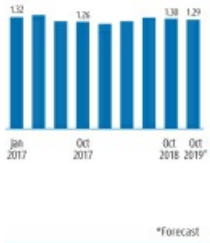
Inflation is expected to remain low.

Canadian and U.S. Interest Rates (%)



Central banks are expected to continue to raise policy rates slowly.

Canadian/U.S. Dollar Exchange Rates



The Canadian dollar is expected to strengthen slightly in 2019.

Data points are averages for the month, quarter or year, as appropriate. References to years are calendar years.

Value Measures

Total Shareholder Return

The average annual total shareholder return (TSR) is a key measure of shareholder value, and confirms that our strategic priorities drive value creation for our shareholders. Our one-year TSR of 3.3% outperformed the corresponding average returns of both our Canadian bank peer group and the overall market in Canada. Our three-year average annual TSR of 13.3% and our five-year average annual TSR of 10.5% were strong, and each outperformed the corresponding average returns of both our Canadian bank peer group and the overall market in Canada.

The table below summarizes dividends paid on BMO common shares over the past five years and the movements in BMO's share price. An investment of $1,000 in BMO common shares made at the beginning of fiscal 2014 would have been worth $1,650 at October 31, 2018, assuming reinvestment of dividends, for a total return of 65.0%.

On December 4, 2018, BMO announced that the Board of Directors had declared a quarterly dividend on common shares of $1.00 per share, up $0.04 per share or 4% from the prior quarter and up $0.07 per share or 8% from the prior year. The dividend is payable on February 26, 2019 to shareholders of record on February 1, 2019. We have increased our quarterly dividend declared four times over the past two years from $0.86 per common share for the first quarter of 2017. Dividends paid over a five-year period have increased at an average annual compound rate of 5.0%.







*All returns represent total returns.

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	**2018**	2017	2016	2015	2014	**3-year CAGR** (1)	**5-year CAGR** (1)
Closing market price per common share ($)	**98.43**	98.83	85.36	76.04	81.73	**9.0**	**6.3**
Dividends paid ($ per share)	**3.72**	3.52	3.36	3.20	3.04	**5.1**	**5.0**
Dividend yield (%)	**3.8**	3.6	4.0	4.3	3.8	**nm**	**nm**
Increase (decrease) in share price (%)	**(0.4)**	15.8	12.3	(7.0)	12.5	**nm**	**nm**
Total annual shareholder return (%) (2)	**3.3**	20.2	17.0	(3.0)	17.1	**13.3**	**10.5**

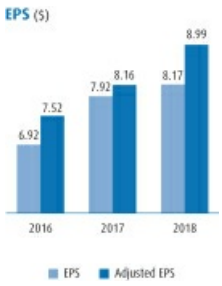
(1) Compound annual growth rate (CAGR) expressed as a percentage.
(2) Total annual shareholder return assumes reinvestment of quarterly dividends and therefore does not equal the sum of dividend and share price returns in the table.
nm – not meaningful

Earnings per Share Growth

The year-over-year percentage changes 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 $8.17, up $0.25 or 3% from $7.92 in 2017. Adjusted EPS was $8.99, up $0.83 or 10% from $8.16 in 2017, consistent with our objective of achieving average annual adjusted EPS growth of 7% to 10%. EPS growth primarily reflected increased earnings. Reported net income available to common shareholders was 2% higher year-over-year, while the average number of diluted common shares outstanding decreased by 1%, primarily due to share buybacks.

Earnings per share (EPS) is calculated by dividing net income attributable to bank shareholders, after deducting preferred share dividends, by the average number of common shares outstanding. Diluted EPS, which is our 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 on page 200 of the consolidated financial statements. Adjusted EPS is calculated in the same manner using adjusted net income.

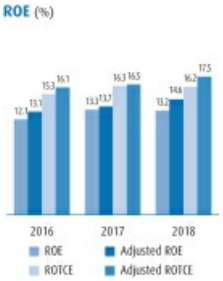


Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

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Return on Equity

Reported return on equity (ROE) was 13.2% in 2018 and adjusted ROE was 14.6%, compared with 13.3% and 13.7%, respectively, in 2017. Reported ROE decreased in 2018, primarily due to growth in common equity exceeding growth in income, in part due to reported income being impacted by a $425 million one-time non-cash charge due to the revaluation of our U.S. net deferred tax asset due to U.S. tax reform. Adjusted ROE increased in 2018, primarily due to growth in income exceeding growth in common equity. There was an increase of $102 million or 2% in net income available to common shareholders and an increase of $473 million or 9% in adjusted net income available to common shareholders in 2018. Average common shareholders' equity increased $792 million or 2% from 2017, primarily due to increased retained earnings, partially offset by lower accumulated other comprehensive income. The reported return on tangible common equity (ROTCE) was 16.2%, compared with 16.3% in 2017, and adjusted ROTCE was 17.5%, compared with 16.5% in 2017. Book value per share increased 5% from the prior year to $64.73, largely reflecting the increase in shareholders' equity.



Return on common shareholders' equity (ROE) is calculated as net income, less non-controlling interest in subsidiaries and preferred dividends, as a percentage of average common shareholders' equity. Common shareholders' equity is comprised of 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. ROTCE 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.

Return on Equity and Return on Tangible Common Equity

(Canadian $ in millions, except as noted)

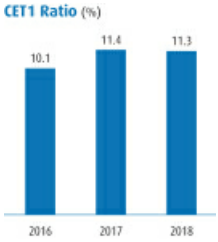
For the year ended October 31	**2018**	2017	2016
Reported net income	**5,450**	5,350	4,631
Attributable to non-controlling interest in subsidiaries	**–**	(2)	(9)
Preferred dividends	**(184)**	(184)	(150)
Net income available to common shareholders (A)	**5,266**	5,164	4,472
After-tax amortization of acquisition-related intangible assets	**90**	116	124
Net income available to common shareholders after adjusting for amortization of acquisition-related intangible assets (B)	**5,356**	5,280	4,596
After-tax impact of other adjusting items (1)	**439**	42	265
Adjusted net income available to common shareholders (C)	**5,795**	5,322	4,861
Average common shareholders' equity (D)	**39,754**	38,962	36,997
Return on equity (%) (= A/D)	**13.2**	13.3	12.1
Adjusted return on equity (%) (= C/D)	**14.6**	13.7	13.1
Average tangible common equity (E)	**33,125**	32,303	30,101
Return on tangible common equity (%) (= B/E)	**16.2**	16.3	15.3
Adjusted return on tangible common equity (%) (= C/E)	**17.5**	16.5	16.1

(1) Other adjusting items include a charge related to the revaluation of our U.S. net deferred tax asset and the benefit on an employee future benefit liability in 2018, a decrease in the collective allowance in 2017 and a cumulative accounting adjustment in 2016. All periods also include restructuring and acquisition integration costs.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.
Certain comparative figures have been reclassified to conform with the current period's presentation.

Common Equity Tier 1 Ratio

BMO's Common Equity Tier 1 (CET1) Ratio reflects a well-capitalized position relative to the risk in our business. Our CET1 Ratio was 11.3% at October 31, 2018, compared with 11.4% at October 31, 2017. The CET1 Ratio decreased from the end of fiscal 2017 as higher CET1 capital from retained earnings growth, net of share repurchases, was more than offset by higher risk-weighted assets, including an acquisition.



Common Equity Tier 1 (CET1) Ratio is calculated as CET1 capital, which is comprised of common shareholders' equity less deductions for goodwill, intangible assets, pension assets, certain deferred tax asset and other items, divided by risk-weighted assets for CET1.

MANAGEMENT'S DISCUSSION AND ANALYSIS

2018 Financial Performance Review

This section provides a review of our enterprise financial performance for 2018 that focuses on the Consolidated Statement of Income included in our consolidated financial statements, which begin on page 143. A review of our operating groups' strategies and performance follows the enterprise review. A summary of the enterprise financial performance for 2017 appears on page 65.

Foreign Exchange

The Canadian dollar equivalents of BMO's U.S. results that are denominated in U.S. dollars decreased relative to 2017 due to the weaker U.S. dollar. The table below indicates the relevant average Canadian/U.S. dollar exchange rates and the impact of changes in the rates on our 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.

Changes in the exchange rate will affect future results measured in Canadian dollars, and the impact on those results is a function of the periods in which revenues, expenses and provisions for (recoveries of) credit losses arise. If future results are consistent with results in 2018, each one cent increase (decrease) in the Canadian/U.S. dollar exchange rate, expressed in terms of how many Canadian dollars one U.S. dollar buys, would be expected to increase (decrease) the Canadian dollar equivalent of our U.S. segment net income before income taxes for the year by $14 million, in the absence of hedging transactions.

Economically, our U.S. dollar income stream was unhedged to changes in foreign exchange rates during 2018 and 2017. During 2016, a portion of the BMO Capital Markets U.S. dollar net income was economically hedged. We regularly determine whether to execute hedging transactions in order to mitigate the impact of foreign exchange rate movements on net income.

See the Enterprise-Wide Capital Management section on page 69 for a discussion of the impact that changes in foreign exchange rates can have on our capital position.

Changes in foreign exchange rates will also affect accumulated other comprehensive income primarily, as a result of the translation of our investment in foreign operations. Each one cent increase (decrease) in the Canadian/U.S. dollar exchange rate, expressed in terms of how many Canadian dollars one U.S. dollar buys, would be expected to increase (decrease) the translation of the unhedged portion of our investment in foreign operations by $148 million.

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

(Canadian $ in millions, except as noted)	**2018 vs. 2017**	2017 vs. 2016
Canadian/U.S. dollar exchange rate (average)		
2018	**1.2878**	
2017	**1.3071**	1.3071
2016		1.3251
Effects on U.S. segment reported results		
Decreased net interest income	**(58)**	(51)
Decreased non-interest revenue	**(47)**	(40)
Decreased revenues	**(105)**	(91)
Decreased provision for credit losses	**3**	–
Decreased expenses	**76**	68
Decreased income taxes	**21**	6
Decreased reported net income	**(5)**	(17)
Effects on U.S. segment adjusted results		
Decreased net interest income	**(58)**	(51)
Decreased non-interest revenue	**(47)**	(40)
Decreased revenues	**(105)**	(91)
Decreased provision for credit losses	**4**	2
Decreased expenses	**74**	66
Decreased income taxes	**5**	5
Decreased adjusted net income	**(22)**	(18)

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

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

Caution

This Foreign Exchange section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements.

Net Income

Reported net income was $5,450 million in 2018, an increase of $100 million or 2% from the prior year. Adjusted net income was $5,979 million, an increase of $471 million or 9%. Adjusted net income excludes a one-time non-cash charge related to the revaluation of our U.S. net deferred tax asset due to U.S. tax reform and a benefit of the remeasurement of an employee benefit liability in the current year, restructuring and acquisition integration costs and the amortization of acquisition-related intangible assets in both years, and a decrease in the collective allowance in the prior year. For more information, see the Non-GAAP Measures section on page 27. The impact of the weaker U.S. dollar on net income was not significant.

Reported and adjusted net income growth largely reflects the benefit of good performance in U.S. P&C, Wealth Management and Canadian P&C. BMO Capital Markets results declined, while Corporate Services net loss was higher on a reported basis, but lower on an adjusted basis.

Canadian P&C reported net income of $2,554 million increased $43 million or 2%, and adjusted net income of $2,556 million, which excludes the amortization of acquisition-related intangible assets, increased $42 million or 2% from the prior year. The prior year benefited from a $168 million after-tax gain on the sale of Moneris Solutions Corporation (Moneris US), which had a negative impact of approximately 7% on net income growth in 2018. Excluding the gain, net income increased as a result of higher balances across most products, higher non-interest revenue, and wider margins, partially offset by higher expenses.

U.S. P&C reported net income of $1,394 million increased $367 million or 36%, and adjusted net income of $1,439 million increased $366 million or 34% from the prior year. Adjusted net income excludes the amortization of acquisition-related intangible assets. On a U.S. dollar basis, reported net income of $1,083 million increased $296 million or 37%, and adjusted net income of $1,118 million increased $295 million or 36% from the prior year, due to higher revenue, the benefit of U.S. tax reform and lower provisions for credit losses, partially offset by higher expenses. The benefit of U.S. tax reform was approximately $91 million in reported net income and $95 million in adjusted net income. The prior year results included a $27 million after-tax loss on a loan sale.

Wealth Management reported net income of $1,072 million increased $105 million or 11% from the prior year. Adjusted net income of $1,113 million, which excludes the amortization of acquisition-related intangible assets, increased $81 million or 8%. Traditional wealth reported net income of $805 million increased $76 million or 11% from the prior year. Adjusted net income in traditional wealth of $846 million increased $52 million or 7%, primarily due to growth from our diversified businesses and higher equity markets on average, partially offset by higher expenses and a legal provision. Net income in insurance of $267 million increased $29 million or 12%, primarily due to less elevated reinsurance claims in the current year and business growth, partially offset by unfavourable market movements in the current year relative to favourable market movements in the prior year.

BMO Capital Markets reported net income of $1,156 million decreased $119 million or 9% from the prior year. Adjusted net income of $1,169 million, which excludes the amortization of acquisition-related intangible assets and acquisition integration costs, decreased $108 million or 8%, primarily due to lower revenue.

Corporate Services reported net loss for the year was $726 million, compared with a reported net loss of $430 million a year ago. The adjusted net loss for the year was $298 million, compared with an adjusted net loss of $388 million a year ago. The adjusted net loss excludes a one-time non-cash charge of $425 million related to the revaluation of our U.S. net deferred tax asset due to U.S. tax reform and a benefit of $203 million as a result of the remeasurement of an employee benefit liability in the current year, restructuring costs and acquisition integration costs in both years with higher costs incurred in 2018, and a $54 million decrease in the collective allowance in the prior year. The adjusted net loss improved primarily due to lower expenses and higher revenue, excluding the taxable equivalent basis (teb) adjustment. The reported net loss increased $296 million from the prior year, due to the impact of the adjusting items and other drivers noted above.

Further discussion is provided in the 2018 Operating Groups Performance Review section on pages 43 to 61.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

Revenue (1)

Revenue of $23,037 million increased $777 million or 3% from $22,260 million in the prior year. On a basis that nets insurance claims, commissions and changes in policy benefit liabilities (CCPB) against insurance revenue (net revenue), revenue increased $963 million or 5% to $21,685 million, driven by good performance in U.S. P&C, Canadian P&C, Wealth Management and higher Corporate Services revenue, partially offset by a decrease in revenue in BMO Capital Markets. The impact of the weaker U.S. dollar on revenue growth was not significant.

BMO analyzes revenue at the consolidated level based on GAAP revenue as reported in the consolidated financial statements, and on an adjusted basis. Consistent with our Canadian peer group, we analyze revenue on a taxable equivalent basis (teb) at the operating group level. The teb adjustments for 2018 totalled $313 million, down from $567 million in 2017.

Canadian P&C revenue increased $269 million or 4% from the prior year. Revenue increased due to higher balances across most products, higher non-interest revenue, including a $39 million gain related to the restructuring of Interac Corporation in the current year, and wider margins. The prior year benefited from a $187 million gain on the sale of Moneris US, which had a negative impact of approximately 3% on revenue growth in 2018.

U.S. P&C revenue increased $366 million or 8% from the prior year on a Canadian dollar basis . On a U.S. dollar basis, revenue of $3,869 million increased $334 million or 9%, mainly due to higher deposit revenue and loan volumes in the current year, and the impact of a loss on a loan sale in the prior year, net of loan spread compression.

Wealth Management revenue, net of CCPB, of $4,942 million increased $266 million or 6% from the prior year. Revenue in traditional wealth of $4,463 million increased $257 million or 6%, due to growth in client assets, including a benefit from higher equity markets on average, and higher deposit and loan revenue, partially offset by the impact of the divestiture of a non-core business in the prior year. Insurance revenue, net of CCPB, of $479 million increased $9 million or 2%, due to less elevated reinsurance claims in the current year and business growth, partially offset by unfavourable market movements in the current year relative to favourable market movements in the prior year.

BMO Capital Markets revenue of $4,355 million decreased $214 million or 5% from the prior year, or 4% excluding the impact of the weaker U.S. dollar, driven by lower revenue in our Trading Products business, primarily in interest rate trading, and lower revenue in Investment and Corporate Banking due to lower underwriting and advisory revenue, partially offset by higher corporate banking-related revenue.

Corporate Services reported and adjusted revenue both increased $276 million from the prior year, largely driven by a lower teb adjustment.

Further discussion is provided in the 2018 Operating Groups Performance Review section on pages 43 to 61.

(1) Insurance revenue can experience variability arising from fluctuations in the fair value of insurance assets, caused by movements in interest rates and equities markets. The investments which 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 insurance claims, commissions and changes in policy benefit liabilities. The discussion of revenue on a net basis reduces this variability in results, which allows for a better discussion of operating results. For additional discussion of insurance claims, commissions and changes in policy benefit liabilities, see page 39.

Taxable equivalent basis (teb) Revenues of operating groups are presented in our MD&A on a taxable equivalent basis (teb). 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.

Revenue and Adjusted Revenue

(Canadian $ in millions, except as noted) For the year ended October 31	**2018**	2017	2016	**Change from 2017 (%)**
Net interest income	**10,313**	10,007	9,872	**3**
Non-interest revenue	**12,724**	12,253	11,215	**4**
Total revenue	**23,037**	22,260	21,087	**3**
Total revenue, net of CCPB	**21,685**	20,722	19,544	**5**
Adjusted net interest income	**10,313**	10,007	9,872	**3**
Adjusted non-interest revenue	**12,724**	12,253	11,299	**4**
Total adjusted revenue	**23,037**	22,260	21,171	**3**
Total adjusted revenue, net of CCPB	**21,685**	20,722	19,628	**5**

Net Interest Income

Net interest income of $10,313 million increased $306 million or 3%, due to increased loan volumes and higher deposit volumes and margins in the P&C businesses, partially offset by lower net interest income in BMO Capital Markets, due to certain trading businesses where the related revenue is recorded in trading income, non-interest revenue.

Net interest income excluding trading of $10,735 million increased $595 million or 6%, due to increased loan and deposit volumes, and wider margins in the P&C businesses.

Average earning assets of $682.9 billion increased $36.1 billion or 6%, due to loan growth, higher securities, increased cash resources and higher securities borrowed or purchased under resale agreements.

BMO's overall net interest margin of 1.51% decreased 4 basis points, primarily due to lower net interest income from trading businesses. Net interest margin on an excluding trading basis of 1.87% was flat, compared with the prior year, as higher margins in the P&C businesses were mostly offset by higher volume of lower spread assets.

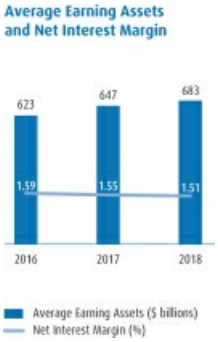
Table 3 on page 128 provides further details on net interest income and net interest margin.

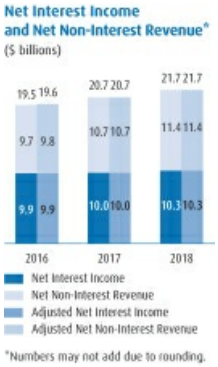
Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

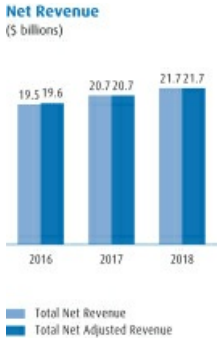
Net interest income is comprised of earnings on assets, such as loans and securities, including interest and certain dividend income, less interest expense paid on liabilities, such as deposits.

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).







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

(Canadian $ in millions, except as noted)	Net interest income (teb)			Average earning assets			Net interest margin		
			Change			Change	(in basis points)		
For the year ended October 31	**2018**	2017	**%**	**2018**	2017	**%**	**2018**	2017	**Change**
Canadian P&C	**5,541**	5,261	**5**	**212,965**	207,815	**2**	**260**	253	**7**
U.S. P&C	**3,843**	3,551	**8**	**103,394**	96,363	**7**	**372**	368	**4**
Personal and Commercial Banking (P&C)	**9,384**	8,812	**6**	**316,359**	304,178	**4**	**297**	290	**7**
Wealth Management	**826**	722	**14**	**31,167**	28,026	**11**	**265**	257	**8**
BMO Capital Markets	**659**	1,233	**(47)**	**271,839**	263,128	**3**	**24**	47	**(23)**
Corporate Services	**(556)**	(760)	**27**	**63,580**	51,467	**24**	**nm**	nm	**nm**
Total BMO reported	**10,313**	10,007	**3**	**682,945**	646,799	**6**	**151**	155	**(4)**
U.S. P&C (US$ in millions)	**2,983**	2,718	**10**	**80,255**	73,752	**9**	**372**	369	**3**

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

nm – not meaningful

Non-Interest Revenue

Non-interest revenue, which comprises all revenues other than net interest income, increased $471 million or 4% to $12,724 million in 2018. Reported and adjusted non-interest revenue, net of CCPB, both increased $657 million or 6% to $11,372 million with the majority of the growth driven by BMO Capital Markets. Excluding trading revenue, non-interest revenue, net of CCPB, increased $179 million or 2%.

Trading revenues increased $478 million and are discussed in the Trading-Related Revenues section that follows.

Investment management and custodial fees increased $120 million from the prior year, mainly due to business growth in Wealth Management, partially offset by the impact of a divestiture of a non-core business in the prior year. Mutual fund revenue increased $62 million. Both investment management and custodial fees and mutual fund revenues benefited from higher equity markets on average, compared with the prior year.

Card fees increased $85 million, driven by higher interchange revenue in Canadian P&C.

Lending fees increased $80 million, primarily due to increased lending activity in Canadian P&C and in BMO Capital Markets.

Securities gains, other than trading, increased $68 million, due to higher net securities gains in Corporate Services, Canadian P&C and U.S. P&C, partially offset by lower net securities gains in BMO Capital Markets and Wealth Management.

Securities commissions and fees increased $60 million. These revenues largely consist of brokerage commissions within Wealth Management and institutional equity trading commissions within BMO Capital Markets. The increase was due to growth in fee-based businesses in Wealth Management and higher levels of client activity in both Wealth Management and BMO Capital Markets.

Deposit and payment service charges increased $21 million and other non-interest revenue increased $16 million.

Investments in associates and joint ventures decreased $219 million, primarily due to the $187 million pre-tax gain on sale of Moneris US in 2017.

Gross insurance revenue decreased $191 million from 2017, due to higher increases in long-term interest rates decreasing the fair value of insurance investments in the current year, and stronger equity markets in the prior year, partially offset by higher annuity sales and underlying business growth in the current year. 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. These fair value changes are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in insurance claims, commissions and changes in policy benefit liabilities (CCPB), as discussed on page 39.

Underwriting and advisory fees decreased $100 million, primarily due to lower equity underwriting activity.

Foreign exchange, other than trading, decreased $9 million.

Table 3 on page 128 provides further details on revenue and revenue growth.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Non-Interest Revenue

(Canadian $ in millions) For the year ended October 31	2018	2017	2016	Change from 2017 (%)
Securities commissions and fees	**1,029**	969	924	**6**
Deposit and payment service charges	**1,144**	1,123	1,076	**2**
Trading revenues	**1,830**	1,352	1,192	**35**
Lending fees	**997**	917	859	**9**
Card fees	**564**	479	526	**18**
Investment management and custodial fees	**1,742**	1,622	1,556	**7**
Mutual fund revenues	**1,473**	1,411	1,364	**4**
Underwriting and advisory fees	**936**	1,036	820	**(10)**
Securities gains, other than trading	**239**	171	84	**39**
Foreign exchange, other than trading	**182**	191	162	**(5)**
Insurance revenue	**1,879**	2,070	2,023	**(9)**
Investments in associates and joint ventures	**167**	386	140	**(57)**
Other	**542**	526	489	**3**
Total reported	**12,724**	12,253	11,215	**4**
Reported, net of CCPB	**11,372**	10,715	9,672	**6**
Total adjusted	**12,724**	12,253	11,299	**4**
Adjusted, net of CCPB	**11,372**	10,715	9,756	**6**
Insurance revenue, net of CCPB	**527**	532	480	**(1)**

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

Trading-Related Revenues

Trading-related revenues are 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. BMO earns a spread or profit on the net sum of its client positions by profitably managing, within prescribed limits, the overall risk in its net positions. On a limited basis, BMO also earns revenue from principal trading positions.

Interest and non-interest trading-related revenues on a taxable equivalent basis (teb) decreased $39 million or 2%. Interest rate trading-related revenues decreased $43 million or 9%, primarily due to decreased client activity. Foreign exchange trading-related revenues increased $8 million or 2%, driven by increased client activity. Equities trading-related revenues decreased $18 million or 2%, reflecting lower activity with corporate clients. Commodities trading-related revenues decreased $21 million or 25%, due to decreased client hedging activity in energy products. Other trading-related revenues increased $35 million or 76%, primarily due to fair value gains associated with hedging exposures in our structural balance sheet. These fair value gains were largely offset by lower net interest income.

The Market Risk section on page 95 provides more information on trading-related revenues.

Trading-related revenues include 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 revenues also include income (expense) and gains (losses) from both on-balance sheet instruments and interest rate, foreign exchange (including spot positions), equity, commodity and credit contracts.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

Interest and Non-Interest Trading-Related Revenues (1)

(Canadian $ in millions) (taxable equivalent basis) For the year ended October 31	2018	2017	2016	Change from 2017 (%)
Interest rates	**437**	480	663	**(9)**
Foreign exchange	**377**	369	349	**2**
Equities	**709**	727	629	**(2)**
Commodities	**63**	84	66	**(25)**
Other (2)	**82**	47	25	**76**
Total (teb)	**1,668**	1,707	1,732	**(2)**
Teb offset	**260**	488	441	**(47)**
Reported total	**1,408**	1,219	1,291	**16**
Reported as:				
Net interest income	**(162)**	355	540	**(+100)**
Non-interest revenue – trading revenues	**1,830**	1,352	1,192	**35**
Total (teb)	**1,668**	1,707	1,732	**(2)**
Teb offset	**260**	488	441	**(47)**
Reported total, net of teb offset	**1,408**	1,219	1,291	**16**
Adjusted net interest income, net of teb offset	**(422)**	(133)	99	**(+100)**
Adjusted non-interest revenue – trading revenues	**1,830**	1,352	1,192	**35**
Adjusted total, net of teb offset	**1,408**	1,219	1,291	**16**

(1) Trading-related revenues are presented on a taxable equivalent basis.
(2) Includes nominal revenues from run-off structured credit activities and hedging exposures in BMO's structural balance sheet.

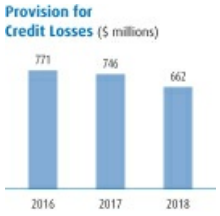
Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Insurance claims, commissions and changes in policy benefit liabilities (CCPB) were $1,352 million in 2018, a decrease of $186 million pre-tax from $1,538 million in 2017, due to the impact of higher increases in long-term interest rates decreasing the fair value of policy benefit liabilities in the current year, stronger equity markets in the prior year and less elevated reinsurance claims in the current year, partially offset by higher annuity sales and underlying business growth in the current year. The decrease related to the fair value of policy benefit liabilities and the increase related to annuity sales were largely offset in revenue, as discussed on page 37.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Provision for Credit Losses



Effective the first quarter of 2018, the bank prospectively adopted IFRS 9. Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. The provision for credit losses on impaired loans under IFRS 9 is consistent with the specific provision under IAS 39 in prior years. The provision for credit losses on performing loans replaces the collective provision under IAS 39. Refer to Note 4 on page 157 of the consolidated financial statements for an explanation of the provision for credit losses. Prior periods have not been restated.

The total provision for credit losses (PCL) was $662 million in the current year, down from $746 million in 2017. Adjusted PCL, which excludes a $76 million pre-tax decrease in the collective allowance in the prior year, decreased $160 million. The PCL on impaired loans of $700 million decreased from $822 million in the prior year, reflecting a net recovery of credit losses in BMO Capital Markets in the current year, compared with net provisions in the prior year, lower provisions in Canadian and U.S. P&C and Wealth Management, and higher recoveries in Corporate Services. There was a $38 million net recovery of credit losses on performing loans in the current year, primarily in the U.S. P&C business.

Total PCL as a percentage of average net loans and acceptances was 0.17% in 2018, down from 0.20% in the prior year. PCL on impaired loans as a percentage of average net loans and acceptances was 0.18%, down from 0.22% in the prior year.

Total PCL in Canadian P&C decreased $14 million to $469 million, due to lower commercial provisions, partially offset by higher consumer provisions. Total U.S. P&C provisions of $220 million decreased $69 million, reflecting lower consumer and commercial PCL on impaired loans, and a $38 million net recovery of credit losses on performing loans. BMO Capital Markets had a net recovery of credit losses of $18 million, compared with net provisions of $44 million in the prior year. Corporate Services total recoveries of credit losses of $15 million decreased $63 million, due to the $76 million collective allowance reduction in the prior year.

On a geographic basis, the majority of our provisions relate to our Canadian loan portfolio, reflecting the larger size of this portfolio compared with our U.S. and international loan portfolios. Total PCL in Canada and other countries (excluding the U.S.) was $424 million, compared with $452 million in 2017. Total PCL in the U.S. was $238 million, down from $294 million in 2017. Note 4 on page 157 of the consolidated financial statements provides provision for credit losses information on a geographic basis. Table 15 on page 138 provides further provision for credit losses segmentation information.

Provision for Credit Losses by Operating Group (1)

(Canadian $ in millions)	Canadian P&C	U.S. P&C	Total P&C	Wealth Management	BMO Capital Markets	Corporate Services (2)	Total Bank
2018							
Provision for (recovery of) credit losses on impaired loans	**466**	**258**	**724**	**6**	**(17)**	**(13)**	**700**
Provision for (recovery of) credit losses on performing loans	**3**	**(38)**	**(35)**	**–**	**(1)**	**(2)**	**(38)**
Total provision for (recovery of) credit losses	**469**	**220**	**689**	**6**	**(18)**	**(15)**	**662**
2017							
Total specific and collective provision for (recovery of) credit losses	483	289	772	8	44	(78)	746
2016							
Total specific and collective provision for (recovery of) credit losses	506	249	755	9	81	(74)	771

(1) Effective the first quarter of 2018, the bank prospectively adopted IFRS 9, *Financial Instruments* (IFRS 9). Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. Prior periods have not been restated. The provision for credit losses in periods prior to 2018 is comprised of specific provisions for operating groups and includes both specific and collective provisions for Corporate Services. Refer to the Changes in Accounting Policies section on page 121 for further details.

(2) In prior years the reduction in the collective provision for credit losses was recorded in Corporate Services.

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

Provision for Credit Losses Performance Ratios

	2018	2017	2016
Total PCL-to-average net loans and acceptances (annualized) (%)	**0.17**	0.20	0.22
PCL on impaired loans-to-average net loans and acceptances (annualized) (%)	**0.18**	0.22	0.22

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Non-Interest Expense

Non-interest expense increased $283 million or 2% to $13,613 million in 2018.

Adjusted non-interest expense excludes a benefit from the remeasurement of an employee benefit liability in the current year, restructuring costs, the amortization of acquisition-related intangible assets and acquisition integration costs in both years. The benefit from the remeasurement was $277 million pre-tax in the current year and was recorded in other employee compensation. Restructuring costs were $260 million and $59 million in 2018 and 2017, respectively. The amortization of acquisition-related intangible assets was $116 million and $149 million in 2018 and 2017, respectively. Acquisition integration costs were $34 million and $87 million in 2018 and 2017, respectively.

Adjusted non-interest expense increased $445 million or 3% to $13,480 million, primarily due to increased technology investments and higher employee-related expenses, partially offset by benefits from disciplined expense management. Reported non-interest expense increased $283 million or 2%, due to the same drivers as adjusted non-interest expense growth, partially offset by the net benefit of the adjusting items noted above. The impact of the weaker U.S. dollar on non-interest expense growth was not significant.

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 on page 129 provides more detail on expenses and expense growth.

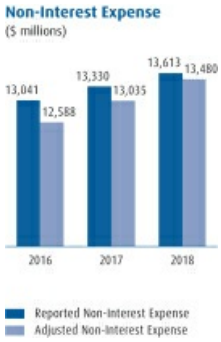
Performance-based compensation on a reported basis increased $124 million or 5% and on an adjusted basis increased $127 million or 5%, primarily due to improved performance across most operating groups and growth initiatives. Other employee compensation, which includes salaries, benefits and severance, on a reported basis decreased $132 million or 3%, reflecting the benefit resulting from a remeasurement of an employee benefit liability, partially offset by higher restructuring costs in the current year. Other employee compensation decreased $13 million on an adjusted basis, mainly reflecting lower pension costs.

Premises and equipment costs on a reported basis increased $262 million or 11% and on an adjusted basis increased $308 million or 13%, primarily due to an increase in technology investments. Other reported expenses increased $11 million and adjusted other expenses decreased $28 million or 1%.

BMO's reported efficiency ratio improved 80 basis points to 59.1% and the adjusted efficiency ratio improved 10 basis points to 58.5% in 2018. On a net revenue basis(1), the reported efficiency ratio improved 150 basis points to 62.8% and the adjusted efficiency ratio improved 70 basis points to 62.2% in 2018.

On a net revenue basis (1), reported operating leverage was 2.5% and adjusted operating leverage was 1.2%.

(1) This ratio is calculated excluding insurance claims, commissions and changes in policy benefit liabilities (CCPB).



The **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. The **adjusted efficiency ratio** is calculated in the same manner, utilizing adjusted revenue and adjusted non-interest expense.

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.

Non-Interest Expense

(Canadian $ in millions) For the year ended October 31	**2018**	2017	2016	**Change from 2017 (%)**
Performance-based compensation	**2,510**	2,386	2,278	**5**
Other employee compensation	**4,949**	5,081	5,104	**(3)**
Total employee compensation	**7,459**	7,467	7,382	**–**
Premises and equipment	**2,753**	2,491	2,393	**11**
Other	**2,898**	2,887	2,822	**–**
Amortization of intangible assets	**503**	485	444	**4**
Total non-interest expense	**13,613**	13,330	13,041	**2**

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

Adjusted Non-Interest Expense (1)

(Canadian $ in millions) For the year ended October 31	**2018**	2017	2016	**Change from 2017 (%)**
Performance-based compensation	**2,508**	2,381	2,248	**5**
Other employee compensation	**4,994**	5,007	4,894	**–**
Total employee compensation	**7,502**	7,388	7,142	**2**
Premises and equipment	**2,738**	2,430	2,357	**13**
Other	**2,853**	2,881	2,805	**(1)**
Amortization of intangible assets	**387**	336	284	**15**
Total adjusted non-interest expense	**13,480**	13,035	12,588	**3**

(1) Adjusted non-interest expense excludes restructuring costs, the amortization of acquisition-related intangible assets, acquisition integration costs, and the benefit on an employee future benefit liability.

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

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

Provision for Income Taxes

The provision for income taxes reflected in the Consolidated Statement of Income is based upon transactions recorded in income, regardless of when such transactions are subject to taxation by taxing authorities, with the exception of the repatriation of retained earnings from subsidiaries, as outlined in Note 22 on page 198 of the consolidated financial statements.

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

On December 22, 2017, the U.S. *Tax Cuts and Jobs Act* (the Act) was signed into law in the United States. Consequently, effective January 1, 2018, the U.S. federal corporate tax rate was reduced from 35% to 21%. The tax rate change resulted in a one-time non-cash charge of $425 million to our net income due to the revaluation of our U.S. net deferred tax asset to the lower tax rate. This one-time non-cash charge for the reduction in the U.S. federal tax rate was recorded in income taxes in the current year. For more information on the impact of U.S. tax reform, see the discussion in the Critical Accounting Estimates section on page 117.

The provision for income taxes was $1,960 million in 2018, compared with $1,296 million in 2017. The reported effective tax rate in 2018 was 26.5%, compared with 19.5% in 2017. The higher reported effective tax rate was primarily due to the one-time non-cash charge due to the revaluation of our U.S. net deferred tax asset noted above. The adjusted provision for income taxes[1] was $1,564 million in 2018, compared with $1,357 million in 2017. The adjusted effective tax rate in 2018 was 20.7%, compared with 19.8% in 2017. The higher adjusted effective tax rate was primarily due to lower tax-exempt income from securities and changes in earnings mix, partially offset by the benefit of U.S. tax reform of approximately US$100 million. On a teb basis, the reported effective tax rate was 29.4% in 2018, compared with 25.8% in 2017. On a teb basis, the adjusted effective tax rate was 23.9% in 2018, compared with 25.9% in 2017.

BMO partially hedges, for accounting purposes, the foreign exchange risk arising from its foreign operations by funding the investments in the corresponding foreign currency. A gain or loss on hedging and an unrealized gain or loss on translation of foreign operations is charged or credited to shareholders' equity. For income tax purposes, a gain or loss on the hedging activities results in an income tax charge or credit in the current period that is charged or credited to shareholders' equity, while the associated unrealized gain or loss on the 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 foreign operations has given rise to an income tax recovery in shareholders' equity of $56 million for the current year, compared with an income tax expense of $8 million in 2017. Refer to the Consolidated Statement of Changes in Equity on page 146 of the consolidated financial statements for further details.

Legislative changes and changes in tax policy, including their interpretation by taxing authorities and the courts, may impact our earnings. See the discussion in the Critical Accounting Estimates section on page 117 for additional related details. For instance, the 2018 Canadian federal budget introduced a rule that impacts the tax deductibility of Canadian dividends in certain circumstances, which was effective February 27, 2018. The impact of this rule is to increase our effective tax rate.

Table 4 on page 129 details the $2,714 million of total government levies and taxes incurred by BMO in 2018. $1,539 million of this amount is incurred in Canada, with $990 million included in our provision for income taxes and the remaining $549 million included in total government levies other than income taxes. The increase from $2,025 million in 2017 was primarily due to a higher provision for income taxes.

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

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

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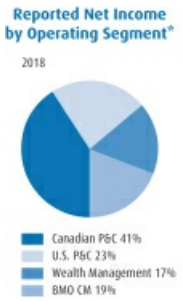
2018 Operating Groups Performance Review

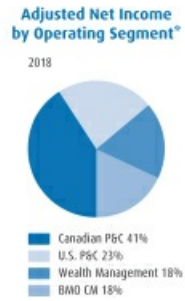
Summary

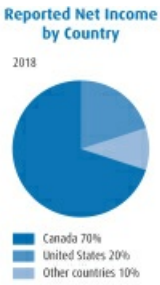
This section includes an analysis of the financial results of our operating groups and descriptions of their operating segments, businesses, strategies, strengths, challenges, key value drivers, achievements and outlooks.

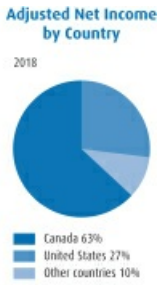
	BMO Financial Group			
Operating Groups	**Personal and Commercial (P&C) Banking**		**BMO Wealth Management**	**BMO Capital Markets**
Operating Segments	**Canadian P&C**	**U.S. P&C**		
Lines of Business	• Personal Banking • Commercial Banking	• Personal Banking • Commercial Banking	• BMO Nesbitt Burns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

BMO's business mix is well diversified by operating segment and by geography. This robust business mix has long been a key driver of growth, comprising the key geographies and customer segments that are critical to our strategic plans for sustaining growth and delivering value to our shareholders.









*Percentages determined excluding results in Corporate Services.

MANAGEMENT'S DISCUSSION AND ANALYSIS

How BMO Reports Operating Group Results

Periodically, certain business lines and units within the business lines are transferred between client and corporate support groups to more closely align BMO's organizational structure with its 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 period's presentation.

Effective the first quarter of 2018, the allocation of certain revenue items from Corporate Services to the operating groups was updated to better align with underlying business activity. Results for prior periods and related ratios have been reclassified to conform with the current presentation.

The following additional reclassifications were made effective the first quarter of 2018. Loan losses related to certain fraud costs have been reclassified from provision for credit losses to other non-interest expense in Canadian P&C and U.S. P&C. Certain fees have been reclassified from deposit and payment service charges to card fees within non-interest revenue in Canadian P&C. Also, cash collateral balances were reclassified from loans and deposits to other assets and other liabilities in BMO Capital Markets. Results for prior periods and related ratios have been reclassified to conform with the current period's presentation.

Restructuring costs and acquisition integration costs that impact more than one operating group are included in Corporate Services.

BMO analyzes revenue at the consolidated level based on GAAP revenue as reported in the consolidated financial statements rather than on a taxable equivalent basis (teb), which is consistent with our Canadian peer group. Like many banks, we analyze 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 before-tax basis 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.

Effective with the adoption of IFRS 9, we allocate the provision for credit losses on performing loans and the related allowance to the operating groups. In 2017 and prior years, the collective provision and allowance was held in Corporate Services.

Personal and Commercial Banking

(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	**2018**	2017	2016	**2018**	2017	2016	**2018**	2017	2016
Net interest income (teb)	**5,541**	5,261	5,080	**3,843**	3,551	3,491	**9,384**	8,812	8,571
Non-interest revenue	**2,171**	2,182	1,909	**1,140**	1,066	1,119	**3,311**	3,248	3,028
Total revenue (teb)	**7,712**	7,443	6,989	**4,983**	4,617	4,610	**12,695**	12,060	11,599
Provision for credit losses on impaired loans (1)	**466**	na	na	**258**	na	na	**724**	na	na
Provision for (recovery of) credit losses on performing loans (1)	**3**	na	na	**(38)**	na	na	**(35)**	na	na
Total provision for credit losses (1)	**469**	483	506	**220**	289	249	**689**	772	755
Non-interest expense	**3,805**	3,622	3,500	**3,012**	2,944	2,914	**6,817**	6,566	6,414
Income before income taxes	**3,438**	3,338	2,983	**1,751**	1,384	1,447	**5,189**	4,722	4,430
Provision for income taxes (teb)	**884**	827	766	**357**	357	396	**1,241**	1,184	1,162
Reported net income	**2,554**	2,511	2,217	**1,394**	1,027	1,051	**3,948**	3,538	3,268
Amortization of acquisition-related intangible assets (2)	**2**	3	2	**45**	46	50	**47**	49	52
Adjusted net income	**2,556**	2,514	2,219	**1,439**	1,073	1,101	**3,995**	3,587	3,320
Key Performance Metrics and Drivers									
Net income growth (%)	**1.7**	13.2	4.8	**35.7**	(2.2)	28.4	**11.6**	8.3	11.4
Adjusted net income growth (%)	**1.7**	13.2	4.7	**34.0**	(2.4)	26.3	**11.4**	8.0	11.0
Revenue growth (%)	**3.6**	6.5	5.0	**7.9**	0.1	27.9	**5.3**	4.0	13.0
Non-interest expense growth (%)	**5.0**	3.5	3.1	**2.3**	1.0	21.0	**3.8**	2.4	10.5
Adjusted non-interest expense growth (%)	**5.0**	3.5	3.2	**2.6**	1.2	21.7	**3.9**	2.5	10.7
Return on equity (%)							**18.6**	16.7	15.8
Adjusted return on equity (%)							**18.8**	16.9	16.1
Operating leverage (teb) (%)	**(1.4)**	3.0	1.9	**5.6**	(0.9)	6.9	**1.5**	1.6	2.5
Adjusted operating leverage (teb) (%)	**(1.4)**	3.0	1.8	**5.3**	(1.1)	6.2	**1.4**	1.5	2.3
Efficiency ratio (teb) (%)	**49.3**	48.7	50.1	**60.4**	63.8	63.2	**53.7**	54.4	55.3
Adjusted efficiency ratio (teb) (%)	**49.3**	48.6	50.0	**59.3**	62.4	61.7	**53.2**	53.9	54.7
Net interest margin on average earning assets (teb) (%)	**2.60**	2.53	2.55	**3.72**	3.68	3.58	**2.97**	2.90	2.88
Average common equity							**20,914**	20,849	20,241
Average earning assets	**212,965**	207,815	199,527	**103,394**	96,363	97,651	**316,359**	304,178	297,178
Average gross loans and acceptances	**223,536**	215,848	205,973	**98,001**	90,533	90,959	**321,537**	306,381	296,932
Average net loans and acceptances	**222,673**	215,667	205,813	**97,346**	90,572	90,865	**320,019**	306,239	296,678
Average deposits	**159,483**	152,492	142,132	**90,738**	85,927	87,881	**250,221**	238,419	230,013
Assets under administration	**28,313**	29,267	25,439	**178,600**	148,753	159,448	**206,913**	178,020	184,887
Full-time equivalent employees	**14,644**	14,559	14,803	**7,188**	7,138	7,055	**21,832**	21,697	21,858

(1) Effective the first quarter of 2018, the bank prospectively adopted IFRS 9, *Financial Instruments* (IFRS 9). Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. Prior periods have not been restated. The provision for credit losses in periods prior to 2018 is comprised of specific provisions. Refer to the Changes in Accounting Policies section on page 121 for further details.

(2) Total P&C before tax amounts of $61 million in 2018, $66 million in 2017 and $71 million in 2016 are included in non-interest expense.

Adjusted results in this table are non-GAAP amounts or non-GAAP measures. Please see the Non-GAAP Measures section.

na – not applicable

The Personal and Commercial Banking (P&C) operating group represents the sum of our two retail and business 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 of $3,948 million increased $410 million or 12% from the prior year. Adjusted net income, which excludes the amortization of acquisition-related intangible assets, was $3,995 million, an increase of $408 million or 11%. These operating segments are reviewed separately in the sections that follow.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

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Canadian Personal and Commercial Banking

Canadian Personal and Commercial Banking provides financial products and services to eight million customers. We're here to help our customers make the right financial decisions as they bank with us across our network of 900 branches, contact centres, digital banking platforms and over 3,300 automated teller machines. Our top-tier commercial franchise serves as an advisor and trusted partner to our clients across multiple industry sectors throughout Canada.



Cameron Fowler
President
North American Personal and Business Banking, BMO Financial Group

Lines of Business

Personal Banking provides customers with a wide range of products and services, including chequing and savings accounts, credit cards, mortgages and everyday financial and investment advice. Our employees are focused on providing all of our customers with an exceptional experience every time they interact with us.

Commercial Banking provides small business and commercial banking customers 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 services and specialized banking programs. Our Commercial bankers partner with our customers to help them grow and manage their business.

Strengths and Value Drivers

- Highly engaged team of dedicated employees focused on providing a personalized banking experience, anticipating customers' needs and finding new ways to help.
- Top-tier commercial banking business, as evidenced by BMO's number two ranking in Canadian market share for business loans up to $25 million.
- Strong and growing retail banking business, benefiting from nearly 50% year-over-year digital sales growth and 25% digital sales penetration.
- Largest Mastercard® and AIR MILES® card issuer in Canada for retail cards and largest Mastercard ® card issuer for commercial cards.
- Consistently applied credit risk management practices that provide customers with reliable access to appropriate financing solutions. Our prudent underwriting standards support responsible personal lending and long-term financial sustainability.
- Proud to be working with Indigenous communities to provide improved access to employment opportunities, education and financial services for more than 25 years.
- The official bank of the Canadian defence community, serving the unique needs of members of the Canadian military and their families since 2008.

Strategy and Key Priorities

Capture key growth and loyalty opportunities by delivering a leading digital experience and personalized advice.

Key Priority	2018 Achievements	2019 Focus
Continue our focus on customer loyalty and growth	• Achieved strong employee engagement survey results, above leading company benchmarks, demonstrating our employees' ongoing commitment to deliver a leading customer experience • Created dedicated teams focused on improving moments that matter, to help enhance the overall experience for our customers • Upgraded 44 branches across Canada and opened three new Smart Branch locations in Manitoba and Alberta, providing customers with access to the best of our innovative technologies in a unique, smaller format tailored to their needs • Continued enhancing our automated teller machine (ATM) network by extending the flexibility of choosing bill denominations at 75% of our ATMs across Canada **Personal Banking** • Ran effective campaigns in support of key offerings, ranging from home financing and credit cards to Everyday Banking, which helped to increase our new-to-BMO customer base and deepen existing relationships • Continued to grow our mix of advice-based roles, strengthening our ability to engage with customers on financial issues that are important to them, whenever and however they choose to interact with us	Continue to improve customer loyalty by deepening primary relationships In Personal Banking, deliver a leading customer experience by leveraging new digital channels and enhancing existing networks

Key Priority	2018 Achievements	2019 Focus
Continue our focus on customer loyalty and growth (continued)	**Commercial Banking** • Improved processes and increased platform efficiencies, allowing our sales force to spend more time engaging directly with customers • Launched new suite of Small Business Banking Mastercard® products that were well received by our clients, with the number of new clients acquired increasing more than 30% from the prior year • Proud to be named Best Commercial Bank in Canada for the fourth consecutive year by *World Finance Magazine* at its 2018 Banking Awards in recognition of our strong regional and industry focus, as well as our commitment to building customer relationships and providing innovative solutions, notably in the area of Indigenous banking	In Commercial Banking, focus on maintaining our core strengths, while targeting opportunities for diversification across high-value sectors and businesses
Deliver a leading digital experience	• Recognized as a leader in mobile banking by Forrester in The Forrester Banking Sales Wave ™: Canadian Mobile Sites, Q4 2018 • Continued to enhance and simplify the account opening process, and launched a new Business Xpress lending platform that has enabled a 95% faster approval time for Small Business loans • Enhanced customer experience driven by our mobile-first approach throughout 2018, resulting in a 16% growth year-over-year in the number of active mobile users • Leveraged the power of artificial intelligence in the rollout of BMO Bolt (chatbot for Facebook Messenger) and BMO's Virtual Assistant (chatbot for Twitter)	Continue to enhance the digital experience through sales and service transactions

Canadian P&C

(Canadian $ in millions, except as noted)

As at or for the year ended October 31	2018	2017	2016
Net interest income	**5,541**	5,261	5,080
Non-interest revenue	**2,171**	2,182	1,909
Total revenue (teb)	**7,712**	7,443	6,989
Provision for credit losses on impaired loans (1)	**466**	na	na
Provision for credit losses on performing loans (1)	**3**	na	na
Total provision for credit losses (1)	**469**	483	506
Non-interest expense	**3,805**	3,622	3,500
Income before income taxes	**3,438**	3,338	2,983
Provision for income taxes	**884**	827	766
Reported net income	**2,554**	2,511	2,217
Amortization of acquisition-related intangible assets (2)	**2**	3	2
Adjusted net income	**2,556**	2,514	2,219
Key Performance Metrics and Drivers			
Personal revenue	**5,013**	4,718	4,568
Commercial revenue	**2,699**	2,725	2,421
Net income growth (%)	**1.7**	13.2	4.8
Revenue growth (%)	**3.6**	6.5	5.0
Non-interest expense growth (%)	**5.0**	3.5	3.1
Adjusted non-interest expense growth (%)	**5.0**	3.5	3.2
Operating leverage (%)	**(1.4)**	3.0	1.9
Adjusted operating leverage (%)	**(1.4)**	3.0	1.8
Efficiency ratio (%)	**49.3**	48.7	50.1
Net interest margin on average earning assets (%)	**2.60**	2.53	2.55
Average earning assets	**212,965**	207,815	199,527
Average gross loans and acceptances	**223,536**	215,848	205,973
Average net loans and acceptances	**222,673**	215,667	205,813
Average deposits	**159,483**	152,492	142,132
Full-time equivalent employees	**14,644**	14,559	14,803

(1) Effective the first quarter of 2018, the bank prospectively adopted IFRS 9, *Financial Instruments* (IFRS 9). Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. Prior periods have not been restated. The provision for credit losses in prior periods is comprised of specific provisions. Refer to the Changes in Accounting Policies section on page 121 for further details.

(2) Before tax amounts of $2 million in 2018 and $3 million in both 2017 and 2016 are included in non-interest expense.

Adjusted results in this table are non-GAAP amounts or non-GAAP measures. Please see the Non-GAAP Measures section.

na – not applicable



Financial Review

Canadian P&C reported net income of $2,554 million increased $43 million or 2%, and adjusted net income of $2,556 million increased $42 million or 2% from the prior year. Adjusted net income excludes the amortization of acquisition-related intangible assets. Net income in the prior year included a $168 million after-tax ($187 million pre-tax) gain on the sale of Moneris US, which had a negative impact of approximately 7% on net income growth and 3% on revenue growth in the year.

Revenue increased $269 million or 4% to $7,712 million. In our personal banking business, revenue increased $295 million or 6% due to an increase in non-interest revenue, including a $39 million gain related to the restructuring of Interac Corporation, higher margins and higher balances across most products. In our commercial banking business, revenue decreased $26 million or 1% as the benefit from higher balances and higher margins was more than offset by lower non-interest revenue, due to the gain on sale of Moneris US in the prior year, which had a 7% negative impact on revenue growth in the current year.

Net interest margin increased 7 basis points to 2.60%, due to higher spreads and a favourable product mix.

The provision for credit losses decreased $14 million or 3% to $469 million. The provision for credit losses on impaired loans decreased $17 million due to lower commercial provisions, partially offset by higher consumer provisions. There was a $3 million provision for credit losses on performing loans in the current year.

Non-interest expense was $3,805 million, an increase of $183 million or 5% from a year ago, largely reflecting continued investment in the business, including increases in technology and sales force investments.

Average gross loans and acceptances increased $7.7 billion or 4% from a year ago to $223.5 billion. Total personal lending balances (excluding retail cards) increased 1% from the prior year, reflecting certain participation choices, including reduced participation in non-proprietary mortgage channels, offset by 4% growth in proprietary mortgages and amortizing home equity line of credit (HELOC) loans. Commercial loan balances (excluding corporate cards) increased 10% year-over-year, with good growth across a number of industry sectors.

Average deposits increased $7.0 billion or 5% to $159.5 billion. Personal deposit balances increased 2%, including growth in chequing account balances of 7%. Commercial deposit balance growth was broad-based, with balances growing 8% from the prior year.

Business Environment, Outlook and Challenges

The personal and commercial banking business in Canada is highly competitive in a rapidly changing environment. Traditional competitors continue to invest in innovative technologies that allow them to serve customers in new ways and focus more effectively on the customer experience. Non-traditional competitors have continued to gain momentum and are deepening their connections with banks in order to enhance their products and build customer relationships.

Growth in the Canadian economy for 2019 is expected to be in line with 2018, with rising interest rates and modestly lower unemployment. This interest rate environment is expected to put pressure on growth in consumer loans, residential mortgages and business lending. Personal and commercial term deposits are expected to grow modestly as interest rates trend higher. Margins are expected to increase slightly as a result of rising interest rates, although any increase may be dampened by the effects of competitive pricing in the market.

We are committed to building out our commercial business by expanding our advisory sales force and targeting commercial opportunities across geographic regions, market segments and industry sectors, especially in high-value sectors and businesses.

We continue to develop our personal business by growing our sales force and deepening primary customer relationships, while leveraging digital technologies to deliver an exceptional customer experience. We are positioning ourselves to thrive in a digital future, investing in talent and enhancing our customers' experience.

Technology will continue to play a leading role in delivering exceptional experiences for all our customers, while enhancing the efficiency of our operations.

The Canadian economic environment in 2018 and the outlook for 2019 are discussed in more detail in the Economic Developments and Outlook section on page 30.

Caution

This Canadian P&C Banking section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

MANAGEMENT'S DISCUSSION AND ANALYSIS

U.S. Personal and Commercial Banking

We help more than two million customers by providing a banking experience with a human touch – delivering a broad range of financial services. Our commercial bank provides a combination of sector expertise, local knowledge, and a breadth of products and services as a trusted partner to our clients. We serve our personal and business banking customers seamlessly across our extensive network of more than 560 branches, our dedicated contact centres, our digital banking platforms, and nationwide access to more than 43,000 automated teller machines.

David R. Casper
Chief Executive Officer, BMO Financial Corporation
Group Head, North American Commercial Banking

Ernie (Erminia) Johannson
Group Head
U.S. Personal and Business Banking



Lines of Business

Personal and Business Banking offers a variety of products and services, including deposits, home lending, consumer credit, business lending, credit cards, and other banking services. Our goal in everything we do is to help our customers make sense of complexity, make better choices in saving, investing, and borrowing, and have confidence in their decisions.

Commercial Banking provides clients with a broad range of banking products and services, including multiple financing options and treasury solutions, as well as risk management products. We believe in partnering with our clients, anticipating their financial needs and sharing our expertise and knowledge to help them grow their businesses.

Strengths and Value Drivers

- Rich Midwestern heritage dating back to 1847, with a long-standing commitment to the success of our customers and the communities in which our employees work and live.
- Talented and experienced team that understands our customers and knows how to compete and perform well in our markets.
- Large-scale, diversified national commercial business, centred in the U.S. Midwest and supported by in-depth industry knowledge, best-in-class customer experience, and top-tier market share in our flagship businesses.
- Increasing momentum for continued growth in personal banking, driven by a large and growing customer base, our extensive branch network, a broad suite of products and services and accelerated investment in digital capabilities.
- Comprehensive and integrated control structure that supports the active management of risk and regulatory compliance.

Strategy and Key Priorities

We aim to grow our business and be a leader in our markets by creating a differentiated and intuitive partnership with our customers to address all of their financial needs.

Key Priority	2018 Achievements	2019 Focus
Deliver a great experience for our customers and employees	• Ranked second among the 40 leading banks in the 2018 Survey of Bank Reputations by *American Banker*, which assesses financial institutions for their governance, products and services, and innovation • *Community Reinvestment Act* performance that was rated Outstanding by the Office of the Comptroller of the Currency, recognizing our commitment to help support low and moderate-income communities • Named to the 2017 list of America's Top Corporations for Women's Business Enterprises by the Women's Business Enterprise National Council, reflecting our commitment to creating a level playing field for women-owned businesses • Maintained robust customer growth, continuing to lead in household acquisition for retail deposits and building momentum across commercial segments • Further improved customer loyalty as measured by Net Promoter Score across all businesses • Reinforced our second-place ranking in deposit market share in our core Chicago and Wisconsin markets and our top-five ranking across our Midwest footprint	Continue to strengthen our competitive position by investing in key capabilities, such as digital and talent, while leveraging our distinctive cross-border advantage and differentiated "One Bank" value proposition to deliver a great customer experience

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Key Priority	2018 Achievements	2019 Focus
In Personal and Business Banking, accelerate digitization and guidance delivery, drive deposit growth, build a flagship franchise in business banking, and optimize our lending portfolio	• Enhanced our digital capabilities with new online banking features, including the ability to open accounts digitally, and enhanced branch infrastructure, including instant debit card and in-branch Wi-Fi • Continued to enhance our deposit product suite with a new Platinum Money Market product, designed to help our customers grow their savings while also maintaining the convenience of liquidity • Opened our 12th Smart Branch over the past three years, bringing together high-tech convenience and personalized services to offer customers a new and engaging environment • Launched the second annual BMO Harris/1871 Innovation Program to continue to engage with and mentor early-stage fintech startups across Chicagoland and Wisconsin	Deliver leading deposit growth, build a business banking franchise, drive profitable growth in lending and accelerate digitization and guidance delivery
In Commercial Banking, accelerate growth in high-potential geographies, invest in specialty businesses and high-growth sectors, and deepen deposit capture and share of wallet	• Continued to grow our geographic footprint, with expansion of our coverage in Dallas, Texas and Columbus, Ohio and investment to build out our presence in the Southeast (Atlanta) • Developed and launched new sales initiatives and products, including variable rate and term certificates of deposit and increased emphasis on select sectors, as part of a new deposit growth strategy • Added to our offering in specialty sectors, including expansion of asset-based lending to cover more industries and geographies and the launch of unitranche financing in sponsor finance, to further reinforce our market position and value proposition • Launched new digital capabilities, such as eSign, to enhance the customer experience in onboarding with our treasury and payment solutions	Invest in underpenetrated markets, expand national presence in high-potential geographies, establish new specialty businesses, increase investment in treasury and payment solutions, and enhance cross-bank collaboration

U.S. P&C

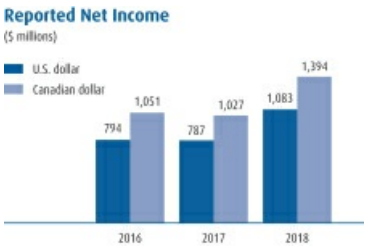
(Canadian $ equivalent in millions, except as noted) As at or for the year ended October 31	2018	2017	2016
Reported net income	**1,394**	1,027	1,051
Adjusted net income	**1,439**	1,073	1,101
Net income growth (%)	**35.7**	(2.2)	28.4
Adjusted net income growth (%)	**34.0**	(2.4)	26.3
(US$ in millions, except as noted)			
Net interest income (teb)	**2,983**	2,718	2,635
Non-interest revenue	**886**	817	845
Total revenue (teb)	**3,869**	3,535	3,480
Provision for credit losses on impaired loans (1)	**201**	na	na
Provision for (recovery of) credit losses on performing loans (1)	**(31)**	na	na
Total provision for credit losses (1)	**170**	221	188
Non-interest expense	**2,338**	2,253	2,199
Income before income taxes	**1,361**	1,061	1,093
Provision for income taxes (teb)	**278**	274	299
Reported net income	**1,083**	787	794
Amortization of acquisition-related intangible assets (2)	**35**	36	37
Adjusted net income	**1,118**	823	831
Key Performance Metrics and Drivers (US$ basis)			
Personal revenue	**1,559**	1,386	1,417
Commercial revenue	**2,310**	2,149	2,063
Net income growth (%)	**37.5**	(0.8)	21.8
Adjusted net income growth (%)	**35.8**	(1.0)	19.8
Revenue growth (%)	**9.4**	1.6	21.1
Non-interest expense growth (%)	**3.8**	2.4	14.6
Adjusted non-interest expense growth (%)	**4.0**	2.6	15.3
Operating leverage (teb) (%)	**5.6**	(0.8)	6.5
Adjusted operating leverage (teb) (%)	**5.4**	(1.0)	5.8
Efficiency ratio (teb) (%)	**60.4**	63.7	63.2
Adjusted efficiency ratio (teb) (%)	**59.3**	62.4	61.7
Net interest margin on average earning assets (teb) (%)	**3.72**	3.69	3.57
Average earning assets	**80,255**	73,752	73,724
Average gross loans and acceptances	**76,067**	69,294	68,670
Average net loans and acceptances	**75,558**	69,324	68,599
Average deposits	**70,431**	65,724	66,343
Full-time equivalent employees	**7,188**	7,138	7,055

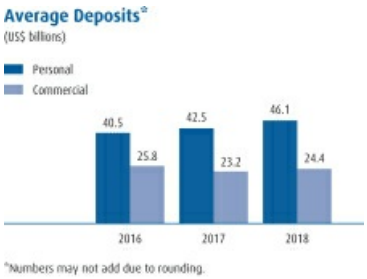
(1) Effective the first quarter of 2018, the bank prospectively adopted IFRS 9, *Financial Instruments* (IFRS 9). Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. Prior periods have not been restated. The provision for credit losses in prior periods is comprised of specific provisions. Refer to the Changes in Accounting Policies section on page 121 for further details.

(2) Before tax amounts of US$45 million in 2018, US$49 million in 2017 and US$52 million in 2016 are included in non-interest expense.

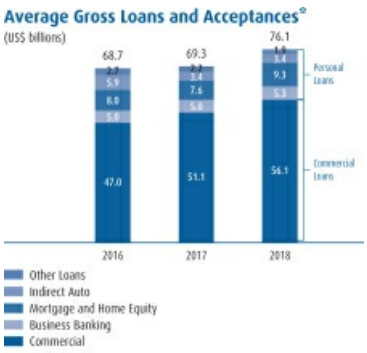
Adjusted results in this table are non-GAAP amounts or non-GAAP measures. Please see the Non-GAAP Measures section.

na – not applicable





*Numbers may not add due to rounding.



*Numbers may not add due to rounding.

Financial Review

U.S. P&C reported net income of $1,394 million increased $367 million or 36%, and adjusted net income of $1,439 million increased $366 million or 34% from the prior year. Adjusted net income excludes the amortization of acquisition-related intangible assets. All amounts in the remainder of this section are on a U.S. dollar basis.

Reported net income of $1,083 million increased $296 million or 37%, and adjusted net income of $1,118 million increased $295 million or 36%, due to higher revenue, the benefit of U.S. tax reform and lower provisions for credit losses, partially offset by higher expenses. The benefit of U.S. tax reform was $91 million in reported net income and $95 million in adjusted net income. The prior year results included a $27 million after-tax ($43 million pre-tax) loss on a loan sale, which had a favourable impact of approximately 5% on reported net income growth, and 4% on an adjusted basis.

Revenue of $3,869 million increased $334 million or 9%, mainly due to higher deposit revenue and loan volumes in the current year, and the impact of the loss on a loan sale in the prior year, net of loan spread compression.

In our commercial banking business, revenue increased $161 million or 7% to $2,310 million, mainly due to increased loan volumes and deposit revenue, net of loan spread compression.

In our personal and business banking business, revenue increased $173 million or 13% to $1,559 million, primarily due to higher deposit revenue, reflecting higher spreads, and the loss on a loan sale in the prior year.

Net interest margin increased 3 basis points to 3.72%, mainly due to higher deposit revenue driven by higher interest rates, partially offset by loan spread compression and change in business mix.

The provision for credit losses decreased $51 million or 23% to $170 million. The provision for credit losses on impaired loans decreased $20 million, due to lower consumer and commercial provisions. There was a $31 million net recovery of credit losses on performing loans in the current year.

Non-interest expense of $2,338 million and adjusted non-interest expense of $2,293 million both increased 4%, primarily due to technology and other investments in the business.

Average gross loans and acceptances increased $6.8 billion or 10% to $76.1 billion, driven by growth of 10% in both commercial and personal loan volumes. Commercial loan growth was driven by robust diversified growth from most of our segments, while personal loan growth benefited from the purchase of a mortgage portfolio in the first quarter of 2018, as well as organic growth.

Average deposits of $70.4 billion increased $4.7 billion or 7% from the prior year, driven by 8% growth in personal volumes and 5% growth in commercial volumes.

Business Environment, Outlook and Challenges

U.S. P&C operations are primarily based in the six states of the U.S. Midwest (Illinois, Wisconsin, Indiana, Minnesota, Missouri and Kansas). In addition, our personal business serves customers in Arizona and Florida, while our commercial business provides targeted nationwide coverage for key specialty sectors.

The personal and commercial banking environment is competitive, and with the rising rate environment, there is added pressure on deposit market share and pricing. Indications of sustainable economic growth within our footprint include unemployment rates that are at historic lows, higher consumer and commercial spending amid lower income taxes, encouraging credit growth and a healthy housing market. The main risks to the U.S. economic outlook relate to trade protectionism, geopolitical tensions and the possibility of rising inflation.

Economic growth is expected to moderate, but remain solid in 2019. This growth environment offers notable opportunities for both our businesses, in particular for the expansion of our personal business and for greater national coverage in our commercial business.

In our personal banking business, the adoption of digital solutions and progressive product offerings that align our strategic initiatives with market trends and consumer needs will help drive growth.

In our flagship commercial business, our main priorities of building out a presence in new markets, maintaining good momentum in existing markets and deepening our relationships with customers, will help us to continue to achieve peer-leading growth.

The U.S. economic environment in 2018 and the outlook for 2019 are discussed in more detail in the Economic Developments and Outlook section on page 30.

Caution

This U.S. P&C Banking section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

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MANAGEMENT'S DISCUSSION AND ANALYSIS

BMO Wealth Management

BMO's wealth management business serves a full range of clients, from mainstream to ultra-high net worth and institutional, with a broad offering of wealth management products and services, including insurance. BMO Wealth Management is a global business with an active presence in markets across Canada, the United States, EMEA and Asia.

Joanna Rotenberg
Group Head
BMO Wealth Management (1)

Gilles Ouellette
Group Head, BMO Asset Management and
Vice-Chair, International, BMO Financial Group (1)



Lines of Business

BMO Nesbitt Burns, our full-service investing business in Canada, offers a broad range of client-focused investment and wealth advisory services delivered with our comprehensive wealth planning capabilities, as well as Canada's first bank-owned digital portfolio management platform, SmartFolio®.

BMO InvestorLine is an online investing service that offers clients two ways to invest: our top-ranked self-directed service, which provides tools to help investors make independent investment decisions; and adviceDirect™, which provides investors with continuous portfolio monitoring and industry-leading analysis.

BMO's Private Banking businesses in Canada, Hong Kong and Singapore offer a comprehensive range of financial services and solutions to high net worth and ultra-high net worth clients.

BMO's U.S. Wealth Management businesses offer financial solutions to high net worth and ultra-high net worth families and businesses, and under BMO Harris Financial Advisors, to clients in the mass affluent segment.

BMO Global Asset Management (GAM) is a globally significant asset manager offering a comprehensive range of investment products and solutions to institutional, retail and high net worth investors around the world.

BMO Insurance provides life insurance and wealth solutions. We manufacture life insurance, accident and sickness insurance, annuity products and segregated funds that are marketed through advisors to individuals and group pension customers. We also offer group creditor and travel insurance to bank customers and reinsurance solutions to international reinsurers.

Strengths and Value Drivers

- Planning and advice-based approach for individuals, families and businesses that integrates investment, insurance, specialized wealth management and core banking solutions, offered by a team of highly skilled wealth professionals committed to making a meaningful difference in the lives of our clients.
- Diversified portfolio of solutions, ranging from self-directed online investment to professional money management and integrated trust/banking services, for both retail and institutional clients.
- Well-established presence in North American wealth management, as well as private banking capabilities in Asia.
- Globally significant asset manager with broad distribution capabilities in North America, as well as Europe, the Middle East and Africa (EMEA) and Asia.
- Prestigious brand that is widely recognized and trusted, with access to BMO's broad client base and distribution networks, and a culture of innovation that anticipates clients' needs.
- Robust risk management framework supporting alignment with heightened regulatory expectations.

Strategy and Key Priorities

Deliver on our clients' current and evolving personal wealth, insurance and institutional asset management needs through an exceptional client experience, a focus on innovation and productivity, and strong collaboration across BMO, while maintaining a robust risk management framework.

Key Priority	2018 Achievements	2019 Focus
Deliver on our clients' current and evolving personal wealth management and insurance needs, with an exceptional client experience	• Continued to drive stronger client loyalty scores across all our businesses with our focus on delivering holistic wealth planning and great client experiences • Continued to invest in digital technology solutions to improve processes, drive productivity and provide greater mobility for our client-facing professionals, enabling them to serve clients in the manner most convenient for them • Launched new digital capabilities to enhance self-serve options for our clients • Transformed the digital journey for our SmartFolio® clients from onboarding through account funding, and continued to improve their mobile experience	Provide outstanding support and innovative wealth and insurance offerings that anticipate clients' evolving needs and exceed their expectations

(1) Gilles Ouellette, Group Head, BMO Asset Management and Vice-Chair, International, BMO Financial Group, plans to retire in 2019. Joanna Rotenberg, Group Head, BMO Wealth Management, will then assume an expanded mandate, leading BMO Global Asset Management in addition to her current responsibilities.

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Key Priority	2018 Achievements	2019 Focus
Deliver on our clients' current and evolving personal wealth management and insurance needs, with an exceptional client experience (continued)	• Strengthened our cross-border banking capabilities, providing Wealth Management clients with more ways to access and transfer funds, complemented by new outreach and education initiatives • Added to BMO's financial planning team, which has doubled in size since 2013, to provide clients and wealth professionals with regional technical expertise in areas such as estate and cross-border planning • Launched a Cross-Pacific Referral Program with BMO Private Banking Canada and BMO Private Banking Asia to help meet our clients' global needs • Continued to address the unique needs of women business owners and clients with our industry-leading BMO for Women program • Ongoing positive response to the simplicity and flexibility of our Whole Life insurance offering, with sales doubling year-over-year • Maintained and reinforced our leading position in pension de-risking, supported by a prudent approach to underwriting	Make a meaningful difference in the lives of our clients, enabled by a distinctive talent approach, strong technology and operations, world-class marketing and analytics and client-focused risk and regulatory compliance
Build on our leadership position in key asset management markets through enhanced investment and distribution capabilities	• Leveraged global investment capabilities to enable delivery of solutions to new markets • Focused distribution on targeted channels, geographic markets and client segments to differentiate and capture share, for example, in the fiduciary market in EMEA • Achieved strong investment performance, with 83% of assets under management meeting or surpassing the relevant benchmark over a five-year period • Ranked #2 in Canadian ETF market share, while leading the market in net sales for the past five years • BMO Global Asset Management was named the *Best Environmental Social and Governance (ESG) Research Team* in the Investment Week Sustainable & ESG Investment Awards 2018. This award recognizes our long-standing commitment and leadership in responsible investing, and our belief that prudent management of ESG issues can have an important impact on the creation of long-term investor value	Continue to build scale at BMO Global Asset Management by extending award-winning global investment capabilities for clients around the world, supported by our global operating platform
Bring the best of BMO to our clients through effective collaboration	• Advanced collaboration among BMO Private Banking Canada, BMO Nesbitt Burns and Business Banking, as well as between U.S. Wealth Management and Commercial partners, to offer banking, investment and holistic wealth planning services to business and commercial clients in Canada and the United States • Continued to make co-location arrangements for our banking, planning, estate and trust, and investment teams, making it easier for clients to access the best of BMO • Made further improvements to our engagement model and delivered innovative BMO Global Asset Management offerings to Personal and Commercial Banking clients	Continue to strengthen one team across Wealth Management, across the enterprise and across borders to bring the best of BMO to all clients

MANAGEMENT'S DISCUSSION AND ANALYSIS

BMO Wealth Management

(Canadian $ in millions, except as noted) As at or for the year ended October 31	2018	2017	2016
Net interest income	**826**	722	635
Non-interest revenue	**5,468**	5,492	5,274
Total revenue	**6,294**	6,214	5,909
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**1,352**	1,538	1,543
Revenue, net of CCPB	**4,942**	4,676	4,366
Provision for credit losses on impaired loans (1)	**6**	na	na
Provision for credit losses on performing loans (1)	**–**	na	na
Total provision for credit losses (1)	**6**	8	9
Non-interest expense	**3,509**	3,351	3,337
Income before income taxes	**1,427**	1,317	1,020
Provision for income taxes	**355**	350	245
Reported net income	**1,072**	967	775
Acquisition integration costs (2)	**–**	–	30
Amortization of acquisition-related intangible assets (3)	**41**	65	71
Adjusted net income	**1,113**	1,032	876
Key Performance Metrics and Drivers			
Traditional wealth businesses net income	**805**	729	552
Traditional wealth businesses adjusted net income	**846**	794	653
Insurance net income	**267**	238	223
Net income growth (%)	**11.0**	24.5	(10.0)
Adjusted net income growth (%)	**8.0**	17.6	(9.4)
Revenue growth (%)	**1.3**	5.2	2.2
Revenue growth, net of CCPB (%)	**5.7**	7.1	(3.6)
Non-interest expense growth (%)	**4.7**	0.4	(0.6)
Adjusted non-interest expense growth (%)	**5.7**	1.9	(0.4)
Return on equity (%)	**17.8**	15.9	12.7
Adjusted return on equity (%)	**18.5**	17.0	14.3
Operating leverage, net of CCPB (%)	**1.0**	6.7	(3.0)
Adjusted operating leverage, net of CCPB (%)	**–**	5.2	(3.2)
Efficiency ratio, net of CCPB (%)	**71.0**	71.7	76.4
Adjusted efficiency ratio (%)	**54.9**	52.6	54.3
Adjusted efficiency ratio, net of CCPB (%)	**70.0**	70.0	73.5
Net interest margin on average earning assets (%)	**2.65**	2.57	2.45
Average common equity	**5,989**	6,040	6,078
Average earning assets	**31,167**	28,026	25,898
Average gross loans and acceptances	**20,290**	18,068	16,464
Average net loans and acceptances	**20,260**	18,063	16,458
Average deposits	**34,251**	33,289	29,931
Assets under administration (4)	**382,839**	359,773	469,694
Assets under management	**438,274**	429,448	405,695
Full-time equivalent employees	**6,407**	6,304	6,282
U.S. Business Select Financial Data (US$ in millions)			
Total revenue	**600**	650	629
Non-interest expense	**532**	546	575
Reported net income	**50**	76	39
Adjusted net income	**60**	88	54
Average earning assets	**3,709**	3,348	3,446
Average net loans and acceptances	**3,619**	3,300	3,200
Average deposits	**5,748**	5,783	5,602

(1) Effective the first quarter of 2018, the bank prospectively adopted IFRS 9, *Financial Instruments* (IFRS 9). Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. Prior periods have not been restated. The provision for credit losses in prior periods is comprised of specific provisions. Refer to the Changes in Accounting Policies section on page 121 for further details.

(2) F&C acquisition integration costs before tax amounts of $nil in both 2018 and 2017 and $38 million in 2016 are included in non-interest expense.

(3) Before tax amounts of $52 million in 2018, $80 million in 2017 and $88 million in 2016 are included in non-interest expense.

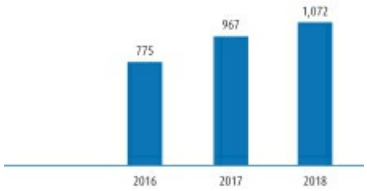
(4) Certain assets under management that are also administered by us are included in assets under administration.

Adjusted results in this table are non-GAAP amounts or non-GAAP measures. Please see the Non-GAAP Measures section.

na – not applicable

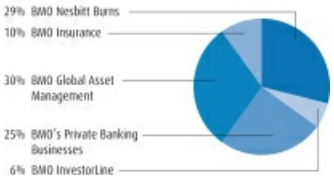
Reported Net Income

($ millions)



2018 Net Revenue by Line of Business

(%)



Financial Review

Wealth Management reported net income of $1,072 million increased $105 million or 11% from the prior year. Adjusted net income of $1,113 million, which excludes the amortization of acquisition-related intangible assets, increased $81 million or 8%.

Traditional wealth reported net income of $805 million increased $76 million or 11% from the prior year. Adjusted net income in traditional wealth of $846 million increased $52 million or 7%, primarily due to growth from our diversified businesses and higher equity markets on average, partially offset by higher expenses and a legal provision. Net income in insurance of $267 million increased $29 million or 12%, primarily due to less elevated reinsurance claims in the current year and business growth, partially offset by unfavourable market movements in the current year relative to favourable market movements in the prior year.

Revenue of $6,294 million increased $80 million or 1% from the prior year. Revenue, net of CCPB, of $4,942 million increased $266 million or 6%. Revenue in traditional wealth of $4,463 million increased $257 million or 6%, due to growth in client assets, including a benefit from higher equity markets on average, and higher deposit and loan revenue, partially offset by the impact of the divestiture of a non-core business in the prior year. Insurance revenue, net of CCPB, of $479 million increased $9 million or 2%, due to the drivers noted above.

The provision for credit losses was $6 million, compared with $8 million in the prior year. The provision for credit losses on impaired loans decreased $2 million, due to lower consumer provisions. There was no provision for credit losses on performing loans in the current year.

Non-interest expense was $3,509 million, an increase of $158 million or 5%. Adjusted non-interest expense was $3,457 million, an increase of $186 million or 6% from the prior year, reflecting higher revenue-based costs, technology investments and strategic growth in the sales force, partially offset by the impact of the divestiture.

Assets under management increased $8.8 billion or 2% from the prior year to $438.3 billion, primarily driven by growth in client assets. Assets under administration increased $23.1 billion or 6% from the prior year to $382.8 billion, also primarily driven by growth in client assets.

Business Environment, Outlook and Challenges

Wealth Management is a global financial services provider. The operating environment within the wealth management industry, which includes major banks, insurance companies, brokers, and independent mutual fund and asset management companies, is highly competitive. Faced with changing client needs and regulatory demands, the industry continues to evolve. Wealth Management is considered to be an engine of growth for BMO's operating performance, with many peer group competitors also actively pursuing accelerated growth strategies.

Growth in the Canadian economy is expected to remain steady but subdued in 2019 while the U.S. economy is expected to moderate somewhat compared with 2018. We anticipate good growth in net new assets, and market appreciation is expected to be moderate. Long-term interest rates in Canada and the United States are expected to rise moderately. We anticipate that rising short-term interest rates will have a positive impact on our brokerage businesses. Ongoing changes in the regulatory and competitive environment and client preferences could result in downward pressure on fees for products and services. We expect to maintain our disciplined expense management approach by gaining efficiencies through digitization and by simplifying the way we work and service our clients. Resources conserved through these ongoing initiatives will contribute to fund strategic business investments.

The Canadian and U.S. economic environment in 2018 and the outlook for 2019 are discussed in more detail in the Economic Developments and Outlook section on page 30.

Caution

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

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

MANAGEMENT'S DISCUSSION AND ANALYSIS

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 2,700 professionals in 33 locations around the world, including 19 offices in North America.

Daniel Barclay
Group Head
BMO Capital Markets (1)

Patrick Cronin
Chief Risk Officer
BMO Financial Group (1)



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. We provide strategic advice on mergers and acquisitions (M&A), restructurings and recapitalizations, as well as valuation and fairness opinions. We also offer trade finance and risk mitigation services to support the international business activities of our clients, and we provide a wide range of banking and other operating services tailored to North American and international financial institutions.

Trading Products offers research and access to global 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. We also offer new product development and origination services, as well as risk management (derivatives) advice and services to hedge against fluctuations in a variety of key inputs, including interest rates and commodities prices. In addition, we provide funding and liquidity management to our clients.

Strengths and Value Drivers

- Unified coverage and integrated distribution across our North American platform and complementary global footprint, delivering a seamless and exceptional client experience.
- Innovative ideas and tailored solutions delivered through a comprehensive coverage team, dedicated to anticipating, understanding and meeting our clients' needs.
- Top-ranked Canadian equity and fixed income research with sales and trading capabilities and deep expertise in core sectors.
- Well-diversified platform and business mix – by sector, geography, product and currency, including a strong, scalable and relevant U.S. business – positioning BMO well in several key markets and over the long term.
- Strong first-line-of-defence risk management and regulatory and compliance capabilities, enabling effective decision-making in support of our strategic priorities.

Strategy and Key Priorities

BMO Capital Markets' vision is to be a top 10 North American investment bank, enabling clients to achieve their goals. We offer an integrated platform, differentiated by innovative ideas and unified coverage.

Key Priority	2018 Achievements	2019 Focus
Maintain our leadership position in Canada through our top-tier coverage team	• Continued to win key mandates in core Canadian industries, including: acting as exclusive financial advisor to Pure Industrial Real Estate Trust on its $3.8 billion sale, the largest industrial real estate transaction in Canadian history; advising METRO on its acquisition of Jean Coutu Group, which created a $16 billion retail leader; and advising steelmaker Stelco as a joint bookrunner on its IPO and two follow-on offerings, which raised $645 million • Ranked #1 in equity research and trading in Canada in the 2018 Brendan Wood International survey • Recognized as a 2018 Greenwich Quality Leader in Canadian Equity Sales Trading and Execution Service • Announced a strategic technology partnership with Clearpool Group to provide a suite of fully customizable algorithms to institutional clients trading Canadian and U.S. equities • Launched a pilot fixed income issuance transaction using blockchain technology to mirror the transaction, a first of its kind in the Canadian marketplace • Received the top two Canadian awards for Structured Products from StructuredRetailProducts.com at the 2018 Americas Structured Products and Derivatives Conference, and was also named Best House, Canada (sixth nomination for this award in seven years) and Best Distributor, Canada • Named Best Bank for the Canadian Dollar by *FX Week* magazine for the eighth consecutive year	Continue to earn leading market share in Canada by strengthening our client relationships and driving incremental market share growth

(1) Prior to November 1, 2018, Daniel Barclay was Co-Head, Global Investment and Corporate Banking, and Patrick Cronin was Group Head, BMO Capital Markets.

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Key Priority	2018 Achievements	2019 Focus
Drive performance in our U.S. platform with a focused strategy and selectively expand our U.S. corporate bank where we are competitively advantaged	• Acquired KGS-Alpha Capital Markets (KGS-Alpha), a New York-based fixed income broker-dealer specializing in U.S. mortgage-backed and asset-backed securities in the institutional investor market • Collaborated with our U.S. P&C business to deliver as "One Bank" in key middle-market M&A transactions, including our exclusive financial advisory role with Lifetouch in its US$825 million sale to Shutterfly • Acted as lead-left bookrunner on 134 U.S. equity and debt capital raising transactions, up more than 38% from last year • Closed 38 U.S. and seven cross-border M&A transactions with a total deal volume of US$23.8 billion • Ranked #1 in the Institutional Investor 2018 All-America Fixed Income Research Team Survey for U.S. Rates Strategy and Technical Analysis • Expanded our presence with the acquisition of US$3 billion in energy loan commitments from a global financial institution	Continue to leverage our key strategic investment to accelerate growth from our U.S. platform, and selectively expand our U.S. corporate bank where we are competitively advantaged
Leverage our strong North American capabilities and presence in select international markets	• Named World's Best Metals & Mining Investment Bank for the ninth consecutive year by *Global Finance* and hosted one of the industry's most important events, the 27th Annual Global Metals & Mining Conference, which brought together 550 investors and 800 corporate attendees, including 140 presenting companies • Named Best Institutional Forex Provider in North America/China for the eighth consecutive year by *Global Banking and Finance Review* • Executed live pilot transactions on Batavia, a blockchain-based global trade finance platform jointly developed by a consortium that includes BMO • Maintained our leadership position in the Supranational Sub-Sovereign & Agency (SSA) sector as joint lead manager on two World Bank Sustainable Development Bonds – one in support of the empowerment of women and girls and the other in support of the health and nutrition of women, adolescents and children – with each offering raising $1 billion • Underwrote our first social bond issued by a supranational borrower, the Inter-American Development Bank, to help fund childhood education in developing Latin American countries • Hosted inaugural U.S. Rates Seminar in Seoul, South Korea, with more than 70 participants, demonstrating the growing extent of our reach into Asian market segments	Continue to leverage our strong North American and global capabilities to expand our footprint and establish strategic relationships in select international markets

BMO Capital Markets

(Canadian $ in millions, except as noted)

As at or for the year ended October 31	2018	2017	2016
Net interest income (teb)	**659**	1,233	1,459
Non-interest revenue	**3,696**	3,336	2,855
Total revenue (teb)	**4,355**	4,569	4,314
Provision for credit losses on impaired loans (1)	**(17)**	na	na
Provision for credit losses on performing loans (1)	**(1)**	na	na
Total provision for credit losses (1)	**(18)**	44	81
Non-interest expense	**2,851**	2,778	2,574
Income before income taxes	**1,522**	1,747	1,659
Provision for income taxes (teb)	**366**	472	424
Reported net income	**1,156**	1,275	1,235
Acquisition integration costs (2)	**11**	–	–
Amortization of acquisition-related intangible assets (3)	**2**	2	1
Adjusted net income	**1,169**	1,277	1,236
Key Performance Metrics and Drivers			
Trading Products revenue	**2,539**	2,694	2,653
Investment and Corporate Banking revenue	**1,816**	1,875	1,661
Net income growth (%)	**(9.4)**	3.2	23.1
Adjusted net income growth (%)	**(8.5)**	3.3	23.0
Revenue growth (%)	**(4.7)**	5.9	12.7
Non-interest expense growth (%)	**2.6**	7.9	3.8
Adjusted non-interest expense growth (%)	**2.1**	7.9	3.8
Return on equity (%)	**12.8**	15.3	15.8
Adjusted return on equity (%)	**13.0**	15.4	15.8
Operating leverage (teb) (%)	**(7.3)**	(2.0)	8.9
Adjusted operating leverage (teb) (%)	**(6.8)**	(2.0)	8.9
Efficiency ratio (teb) (%)	**65.5**	60.8	59.7
Adjusted efficiency ratio (teb) (%)	**65.1**	60.8	59.6
Net interest margin on average earning assets (teb) (%)	**0.24**	0.47	0.58
Average common equity	**8,464**	7,900	7,387
Average earning assets	**271,839**	263,128	251,962
Average assets	**307,087**	302,518	301,623
Average gross loans and acceptances	**46,724**	48,217	44,866
Average net loans and acceptances	**46,658**	48,191	44,817
Average deposits	**138,440**	144,357	146,888
Full-time equivalent employees	**2,700**	2,502	2,353
U.S. Business Select Financial Data (US$ in millions)			
Total revenue (teb)	**1,249**	1,318	1,132
Non-interest expense	**985**	927	860
Reported net income	**196**	267	175
Adjusted net income	**205**	268	176
Average earning assets	**92,235**	88,044	78,619
Average assets	**98,265**	93,253	86,137
Average net loans and acceptances	**15,249**	15,359	14,932
Average deposits	**53,008**	52,471	52,459

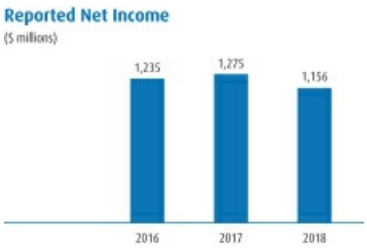
(1) Effective the first quarter of 2018, the bank prospectively adopted IFRS 9, *Financial Instruments* (IFRS 9). Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. Prior periods have not been restated. The provision for credit losses in prior periods is comprised of specific provisions. Refer to the Changes in Accounting Policies section on page 121 for further details.

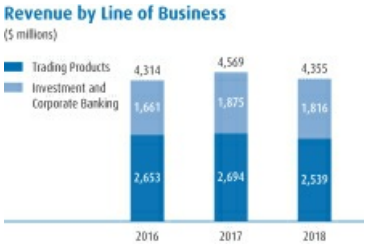
(2) KGS-Alpha acquisition integration costs before tax amount of $14 million in 2018 is included in non-interest expense.

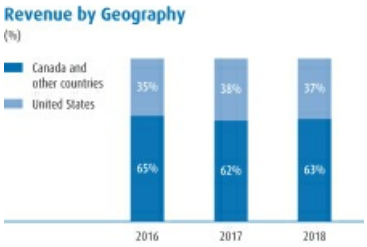
(3) Before tax amounts of $3 million in 2018, $3 million in 2017 and $1 million in 2016 are included in non-interest expense.

Adjusted results in this table are non-GAAP amounts or non-GAAP measures. Please see the Non-GAAP Measures section.

na – not applicable







Financial Review

BMO Capital Markets reported net income of $1,156 million decreased $119 million or 9% from the prior year. Adjusted net income of $1,169 million, which excludes the amortization of acquisition-related intangible assets and acquisition integration costs, decreased $108 million or 8%, primarily due to lower revenue.

Revenue of $4,355 million decreased $214 million or 5% from the prior year. Excluding the impact of the weaker U.S. dollar, revenue decreased $189 million or 4%, driven by lower revenue in the Trading Products and Investment and Corporate Banking businesses. Trading Products revenue decreased $155 million or 6% from the prior year, due to lower interest rate trading revenues, lower equity-related activity with corporate clients, and lower net securities gains, partially offset by the impact of the KGS-Alpha acquisition. Investment and Corporate Banking revenue decreased $59 million or 3% from the prior year, primarily due to lower underwriting and advisory revenue, partially offset by higher corporate banking-related revenue.

Total net recovery of credit losses was $18 million, compared with net provisions of $44 million in the prior year. The net recovery of credit losses on impaired loans was $17 million, and there was a $1 million net recovery of credit losses on performing loans in the current year.

Non-interest expense of $2,851 million increased $73 million or 3%, and adjusted non-interest expense of $2,834 million increased $59 million or 2%, or 3% excluding the impact of the weaker U.S. dollar, mainly driven by continued investment in the business, including the acquisition and growth initiatives.

Average assets of $307.1 billion increased $4.6 billion from the prior year. Excluding the impact of the weaker U.S. dollar, average assets increased $6.3 billion. Higher levels of cash and cash equivalents, securities and reverse repos were partially offset by lower derivative financial asset balances.

Business Environment, Outlook and Challenges

In 2018, the operating environment in Canada and the United States remained highly competitive for capital markets businesses. Traditional banks focused on revenue growth opportunities, ongoing cost reduction efforts and technology advancements to improve efficiency, while non-bank competitors continued to seek opportunities to disrupt the business activities of traditional banks in certain trading and investment banking products.

Looking ahead to fiscal 2019, we are focused on executing our consistent strategy of expanding a highly integrated, client-focused North American capital markets business. We continue to project that our U.S. business will be a significant driver of growth, and we expect to further leverage our established U.S. capabilities, as well as our overall franchise and capital position, to differentiate ourselves in the marketplace and selectively grow our loan book. In Canada, we have leading market share positions across all products and sectors in which we operate, and we expect this business to perform well going forward. We are selectively expanding our capabilities to better serve North American-based clients that have a global presence. Our disciplined and integrated approach to risk management, along with our investments in regulatory technology infrastructure, will continue to enable us to meet risk management requirements in the coming years. Stability in the markets could be challenged by macroeconomic concerns and the heightened risk of protracted trade tensions. Assuming markets are constructive, we are confident that we will be able to maintain our strong position and achieve our strategic objectives.

The Canadian and U.S. economic environment in 2018 and the outlook for 2019 are discussed in more detail in the Economic Developments and Outlook section on page 30.

Caution

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

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

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, finance, legal and regulatory compliance, human resources, communications, marketing, real estate, procurement, data and analytics, and innovation. T&O manages, maintains and provides governance of information technology, cyber security and operations services.

The costs of these Corporate Units and T&O services are largely transferred to the three operating groups (Personal and Commercial Banking, 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, residual unallocated expenses, certain acquisition integration costs and restructuring costs, as well as the one-time non-cash charge due to the revaluation of our U.S. net deferred tax asset due to U.S. tax reform and the benefit resulting from a remeasurement of an employee benefit liability.

Corporate Services focuses on enterprise-wide priorities related to maintaining a sound risk and control environment and efficiency while supporting our businesses in meeting their customer experience objectives. Notable achievements during the year included:

- Established the Enterprise Initiatives, Infrastructure and Innovation (EI3) Group to drive enterprise-wide, sustainable productivity improvements and create capacity for investment in revenue growth, in partnership with the three operating groups
- Accelerated the deployment of digital technology to transform our business, including the successful implementation of our U.S. digital platform, which is now expediting digital developments across personal and commercial segments
- Invested in information technology initiatives to meet regulatory requirements, while also deploying new capabilities that will reduce time to market and strengthen our technology foundation
- Enhanced our data and analytics platform to add new governance, analytics and robotics capabilities in support of business initiatives. Additionally, we advanced cloud-based efficiencies and established partnerships to drive innovation
- Continued to pursue operational efficiencies through the monetization of our technology architecture and data investment, focusing more new spend on transformation and protection
- Launched a new cross-functional team focused on enhancing our employees' technology and workplace experience

Financial Review

Corporate Services reported net loss for the year was $726 million, compared with a reported net loss of $430 million a year ago. The adjusted net loss for the year was $298 million, compared with an adjusted net loss of $388 million a year ago. The adjusted net loss excludes a one-time non-cash charge of $425 million related to the revaluation of our U.S. net deferred tax asset due to U.S. tax reform and a $203 million benefit as a result of a remeasurement of an employee benefit liability in the current year, restructuring costs and acquisition integration costs in both years with higher costs incurred in 2018, and a $54 million decrease in the collective allowance for credit losses in the prior year. The adjusted net loss improved primarily due to lower expenses and higher revenue, excluding the taxable equivalent basis (teb) adjustment. The reported net loss increased $296 million from the prior year due to the impact of the adjusting items and other drivers noted above.

Corporate Services, including Technology and Operations

(Canadian $ in millions, except as noted) As at or for the year ended October 31	**2018**	2017	2016
Net interest income before group teb offset	**(243)**	(193)	(283)
Group teb offset	**(313)**	(567)	(510)
Net interest income (teb)	**(556)**	(760)	(793)
Non-interest revenue	**249**	177	58
Total revenue (teb)	**(307)**	(583)	(735)
Provision for credit losses on impaired loans (1)	**(13)**	na	na
Provision for (recovery of) credit losses on performing loans (1)	**(2)**	na	na
Total provision for (recovery of) credit losses (1)	**(15)**	(78)	(74)
Non-interest expense	**436**	635	716
Loss before income taxes	**(728)**	(1,140)	(1,377)
Recovery of income taxes (teb)	**(2)**	(710)	(730)
Reported net loss	**(726)**	(430)	(647)
Acquisition integration costs (2)	**14**	55	41
Cumulative accounting adjustment (3)	**–**	–	62
Restructuring costs (4)	**192**	41	132
Decrease in the collective allowance for credit losses (5)	**–**	(54)	–
U.S. net deferred tax asset revaluation (6)	**425**	–	–
Benefit from the remeasurement of an employee benefit liability (7)	**(203)**	–	–
Adjusted net loss	**(298)**	(388)	(412)
Adjusted total revenue (teb)	**(307)**	(583)	(651)
Adjusted provision for credit losses on impaired loans (1)	**(13)**	na	na
Adjusted provision for (recovery of) credit losses on performing loans (1)	**(2)**	na	na
Total adjusted provision for (recovery of) credit losses (1)	**(15)**	(2)	(74)
Adjusted non-interest expense	**433**	489	461
Adjusted net loss	**(298)**	(388)	(412)
Full-time equivalent employees	**14,515**	14,697	14,741
U.S. Business Select Financial Data (US$ in millions)			
Total revenue (teb)	**(39)**	(90)	(114)
Recovery of credit losses (1)	**(12)**	(23)	(81)
Non-interest expense	**194**	245	218
Recovery of income taxes (teb)	**265**	(109)	(71)
Reported net loss	**(486)**	(203)	(180)
Adjusted total revenue (teb)	**(39)**	(90)	(114)
Adjusted recovery of credit losses (1)	**(12)**	(2)	(56)
Adjusted non-interest expense	**139**	171	119
Adjusted net loss	**(106)**	(170)	(134)

(1) Effective the first quarter of 2018, the bank prospectively adopted IFRS 9, *Financial Instruments* (IFRS 9). Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. Prior periods have not been restated. Changes in the provision for credit losses on performing loans under this methodology will not be considered an adjusting item. The provision for credit losses in periods prior to 2018 is comprised of both specific and collective provisions. Refer to the Changes in Accounting Policies section on page 121 for further details.
(2) Acquisition integration costs related to the acquired BMO Transportation Finance business are included in non-interest expense.
(3) Cumulative accounting adjustment recognized in other non-interest revenue related to foreign currency translation.
(4) Restructuring charges before tax amounts of $260 million in 2018, $59 million in 2017 and $188 million in 2016. Restructuring costs are included in non-interest expense.
(5) Decrease in the collective allowance for credit losses before tax amount of $76 million in 2017.
(6) Reported net income in the first quarter of 2018 included a $425 million (US$339 million) charge due to the revaluation of our U.S. net deferred tax asset as a result of the enactment of the U.S. *Tax Cuts and Jobs Act.* For more information on the impact of the U.S. *Tax Cuts and Jobs Act*, see Provision for Income Taxes section on page 42.
(7) The current year included a benefit of $277 million pre-tax from the remeasurement of an employee benefit liability as a result of an amendment to our other employee future benefits plan for certain employees that was announced in the fourth quarter of 2018. This amount was included in Corporate Services in non-interest expense.

Adjusted results in this table are non-GAAP amounts or non-GAAP measures. Please see the Non-GAAP Measures section.
na – not applicable.

Summary Quarterly Earnings Trends

BMO's results and performance measures for the past eight quarters are outlined on page 63.

BMO's quarterly earnings, revenue and expense are modestly affected by seasonal factors. For example, our second fiscal quarter has 89 days (90 in a leap year) and other quarters have 92 days, resulting in lower second-quarter results relative to other quarters. Quarterly earnings are also affected by foreign currency translation.

Reported and adjusted results have generally trended upwards over the past eight quarters, with the exception of a charge related to a revaluation of our U.S. net deferred tax asset in the first quarter of 2018 and the impact of elevated reinsurance claims in Wealth Management in the fourth quarters of 2017 and 2018. Reported results were also impacted by a benefit of an employee future benefit liability in the fourth quarter of 2018, restructuring charges in the second quarter of 2018 and the fourth quarter of 2017, and a decrease in the collective allowance in the third quarter of 2017.

Canadian P&C delivered positive year-over-year net income growth in seven of the past eight quarters, largely reflecting revenue growth driven by higher balances and an increase in non-interest revenue. Results also reflect a $168 million after-tax gain on sale recognized in the first quarter of 2017. U.S. P&C performance in 2018 was largely driven by deposit growth from higher interest rates and volumes, good growth in loan volumes, the benefit of U.S. tax reform and lower credit losses. U.S. P&C results in the first quarter of 2017 also included an after-tax loss of $35 million on the sale of a portion of the indirect auto loan portfolio. Wealth Management delivered good net income performance in 2017 and 2018. In traditional wealth, growth across our diversified businesses also benefited from relatively good performance in North American equity markets, notwithstanding a correction experienced in the fourth quarter of 2018. Quarterly insurance results have been subject to variability, resulting primarily from impacts of interest rates, equity markets and reinsurance claims, as well as methodology and actuarial assumptions changes. BMO Capital Markets results in the second half of 2018 reflect improved performance following the impact of lower underwriting and advisory activity in the first half of the year. BMO Capital Markets' performance in 2017 was good, notwithstanding the impact of tax law changes with respect to certain clients in our equities business in the second half of the year. Corporate Services results can vary from quarter to quarter, in large part due to the inclusion of adjusting items, which are largely recorded in Corporate Services.

Effective the first quarter of 2018, the bank prospectively adopted IFRS 9. Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. The provision for credit losses on impaired loans under IFRS 9 is consistent with the specific provision under IAS 39 in prior years. The provision for credit losses on performing loans replaces the collective provision for credit losses under IAS 39. Prior periods have not been restated. Refer to Note 4 on page 157 of the consolidated financial statements for an explanation of the provision for credit losses. As a result of the forward-looking nature of IFRS 9, we anticipate there will be increased variability in the bank's provision for credit losses on performing loans.

BMO's PCL measured as a percentage of loans and acceptances has been relatively stable, with some quarter-to-quarter variability. Overall, PCL on impaired loans was relatively stable in 2018. Total PCL increased in the third quarter of 2018, primarily due to a $9 million provision for credit losses on performing loans. Total PCL declined in the first quarter of 2018, primarily due to a $33 million recovery of credit losses on performing loans. The decrease in the third quarter of 2017 was due to a decrease in the collective allowance in our reported results, and the increase in the second quarter of 2017 was due to higher provisions in BMO Capital Markets and the P&C businesses.

The effective income tax rate has varied, as it depends on legislative changes, changes in tax policy, including their interpretation by taxing authorities and the courts, earnings mix, including the relative proportion of earnings attributable to the different jurisdictions in which we operate, and the amount of tax-exempt income from securities. The higher reported tax rate in the first quarter of 2018 due to the one-time non-cash tax charge related to a revaluation of our U.S. net deferred tax asset due to U.S. tax reform.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

Summarized Statement of Income and Quarterly Financial Measures

(Canadian $ in millions, except as noted)	Q4-2018	Q3-2018	Q2-2018	Q1-2018	Q4-2017	Q3-2017	Q2-2017	Q1-2017
Net interest income	**2,669**	**2,607**	**2,491**	**2,546**	2,535	2,533	2,409	2,530
Non-interest revenue	**3,253**	**3,213**	**3,126**	**3,132**	3,120	2,926	3,332	2,875
Revenue	**5,922**	**5,820**	**5,617**	**5,678**	5,655	5,459	5,741	5,405
Insurance claims, commissions and changes in policy benefit liabilities (CCPB)	**390**	**269**	**332**	**361**	573	253	708	4
Revenue, net of CCPB	**5,532**	**5,551**	**5,285**	**5,317**	5,082	5,206	5,033	5,401
Provision for credit losses on impaired loans (1)	**177**	**177**	**172**	**174**	na	na	na	na
Provision for (recovery of) credit losses on performing loans (1)	**(2)**	**9**	**(12)**	**(33)**	na	na	na	na
Total provision for credit losses (1)	**175**	**186**	**160**	**141**	202	126	251	167
Non-interest expense	**3,224**	**3,386**	**3,562**	**3,441**	3,375	3,286	3,284	3,385
Income before provision for income taxes	**2,133**	**1,979**	**1,563**	**1,735**	1,505	1,794	1,498	1,849
Provision for income taxes	**438**	**443**	**317**	**762**	278	407	250	361
Reported net income (see below)	**1,695**	**1,536**	**1,246**	**973**	1,227	1,387	1,248	1,488
Acquisition integration costs (2)	**13**	**7**	**2**	**3**	15	13	13	14
Amortization of acquisition-related intangible assets (3)	**24**	**22**	**23**	**21**	26	28	34	28
Restructuring costs (4)	**–**	**–**	**192**	**–**	41	–	–	–
Decrease in the collective allowance for credit losses (5)	**–**	**–**	**–**	**–**	–	(54)	–	–
U.S. net deferred tax asset revaluation (6)	**–**	**–**	**–**	**425**	–	–	–	–
Benefit from the remeasurement of an employee benefit liability (7)	**(203)**	**–**	**–**	**–**	–	–	–	–
Adjusted net income (see below)	**1,529**	**1,565**	**1,463**	**1,422**	1,309	1,374	1,295	1,530
Operating group reported net income								
Canadian P&C reported net income	**675**	**642**	**590**	**647**	624	613	530	744
Amortization of acquisition-related intangible assets (3)	**1**	**–**	**1**	**–**	1	1	–	1
Canadian P&C adjusted net income	**676**	**642**	**591**	**647**	625	614	530	745
U.S. P&C reported net income	**372**	**364**	**348**	**310**	270	268	240	249
Amortization of acquisition-related intangible assets (3)	**11**	**12**	**11**	**11**	11	11	12	12
U.S. P&C adjusted net income	**383**	**376**	**359**	**321**	281	279	252	261
Wealth Management reported net income	**219**	**291**	**296**	**266**	175	269	254	269
Amortization of acquisition-related intangible assets (3)	**10**	**10**	**11**	**10**	14	15	21	15
Wealth Management adjusted net income	**229**	**301**	**307**	**276**	189	284	275	284
BMO Capital Markets reported net income	**298**	**301**	**286**	**271**	316	281	311	367
Acquisition integration costs (2)	**9**	**2**	**–**	**–**	–	–	–	–
Amortization of acquisition-related intangible assets (3)	**2**	**–**	**–**	**–**	–	1	1	–
BMO Capital Markets adjusted net income	**309**	**303**	**286**	**271**	316	282	312	367
Corporate Services reported net income	**131**	**(62)**	**(274)**	**(521)**	(158)	(44)	(87)	(141)
Acquisition integration costs (2)	**4**	**5**	**2**	**3**	15	13	13	14
Restructuring costs (4)	**–**	**–**	**192**	**–**	41	–	–	–
Decrease in the collective allowance for credit losses (5)	**–**	**–**	**–**	**–**	–	(54)	–	–
U.S. net deferred tax asset revaluation (6)	**–**	**–**	**–**	**425**	–	–	–	–
Benefit from the remeasurement of an employee benefit liability (7)	**(203)**	**–**	**–**	**–**	–	–	–	–
Corporate Services adjusted net income	**(68)**	**(57)**	**(80)**	**(93)**	(102)	(85)	(74)	(127)
Basic earnings per share ($)	**2.58**	**2.32**	**1.86**	**1.43**	1.82	2.05	1.85	2.23
Diluted earnings per share ($)	**2.57**	**2.31**	**1.86**	**1.43**	1.81	2.05	1.84	2.22
Adjusted diluted earnings per share ($)	**2.32**	**2.36**	**2.20**	**2.12**	1.94	2.03	1.92	2.28
Net interest margin on average earning assets (%)	**1.49**	**1.49**	**1.52**	**1.54**	1.57	1.55	1.52	1.55
PCL-to-average net loans and acceptances (annualized) (%)	**0.18**	**0.19**	**0.17**	**0.15**	0.22	0.14	0.27	0.18
PCL on impaired loans-to-average net loans and acceptances (annualized) (%)	**0.18**	**0.18**	**0.18**	**0.19**	0.22	0.22	0.27	0.18
Effective tax rate (%)	**20.6**	**22.4**	**20.3**	**43.9**	18.5	22.7	16.7	19.5
Adjusted effective tax rate (%)	**19.7**	**22.4**	**21.2**	**19.5**	19.3	22.5	17.1	19.8
Canadian/U.S. dollar average exchange rate ($)	**1.3047**	**1.3032**	**1.2858**	**1.2575**	1.2621	1.2974	1.3412	1.3288

(1) Effective the first quarter of 2018, the bank prospectively adopted IFRS 9, *Financial Instruments* (IFRS 9). Under IFRS 9, we refer to the provision for credit losses on impaired loans and the provision for credit losses on performing loans. Prior periods have not been restated. Changes in the provision for credit losses on performing loans under this methodology will not be considered an adjusting item. The provision for credit losses in prior periods is comprised of both specific and collective provisions. Refer to the Changes in Accounting Policies section on page 121 for further details.

(2) Acquisition integration costs before tax are included in non-interest expense. BMO Capital Markets amounts of $12 million in Q4-2018 and $2 million in Q3-2018. Corporate Services amounts of $6 million in each of Q4-2018 and Q3-2018, $4 million in each of Q2-2018 and Q1-2018, $24 million in Q4-2017, $20 million in Q3-2017, $21 million in Q2-2017 and $22 million in Q1-2017.

(3) Amortization of acquisition-related intangible assets before tax is charged to the non-interest expense of the operating groups. Canadian P&C amounts of $1 million in Q4-2018, $nil in Q3-2018, $1 million in Q2-2018, $nil in both Q1-2018 and Q4-2017, $1 million in Q3-2017, $nil in Q2-2017 and $1 million in Q1-2017. U.S. P&C amounts of $15 million in each of Q4-2018 and Q3-2018, $14 million in Q2-2018, $15 million in Q1-2018, and $16 million in each of Q4-2017, Q3-2017, Q2-2017 and Q1-2017. Wealth Management amounts of $13 million in each of Q4-2018, Q3-2018, Q2-2018 and Q1-2018, $18 million in Q4-2017, $17 million in Q3-2017, $26 million in Q2-2017 and $19 million in Q1-2017. BMO Capital Markets amounts of $2 million in Q4-2018, $nil in Q3-2018, $1 million in Q2-2018, $nil in each of Q1-2018 and Q4-2017, and $1 million in each of Q3-2017, Q2-2017 and Q1-2017.

(4) Restructuring charges before tax amounts included in non-interest expense in Corporate Services of $260 million in Q2-2018 and $59 million in Q4-2017.

(5) In Q3-2017, the adjustment to the collective allowance for credit losses before tax amount of $76 million was excluded from the Corporate Services adjusted provision for (recovery of) credit losses.

(6) Charge due to the revaluation of our U.S. net deferred tax asset as a result of the enactment of the U.S. *Tax Cuts and Jobs Act*. For more information on the impact of the U.S. *Tax-Cuts and Jobs Act*, see the Provision for Income Taxes section on page 42.

(7) The current year included a benefit of $203 million after-tax ($277 million pre-tax) from the remeasurement of an employee benefit liability as a result of an amendment to our other employee future benefits plan for certain employees that was announced in the fourth quarter of 2018. This amount has been included in Corporate Services in non-interest expense.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.
Certain comparative figures have been reclassified to conform with the current period's presentation.
na – not applicable

Caution

This Summary Quarterly Earnings Trends section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements.

In the opinion of Bank of Montreal management, information that is derived from unaudited financial information, including information as at and for the interim periods, includes all adjustments necessary for a fair presentation of such information. All such adjustments are of a normal and recurring nature. Financial ratios for interim periods are stated on an annualized basis, where appropriate, and the ratios, as well as interim operating results, are not necessarily indicative of actual results for the full fiscal year.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

Review of Fourth Quarter 2018 Performance

Reported net income was $1,695 million for the fourth quarter of 2018, an increase of $468 million or 38% from the prior year. Adjusted net income was $1,529 million, up $220 million or 17% from the prior year. Adjusted results for the quarter exclude a benefit of $277 million ($203 million after-tax) from the remeasurement of an employee benefit liability, and the amortization of acquisition-related intangible assets and acquisition integration costs recorded in non-interest expense. A full list of adjusting items is included in the Non-GAAP Measures section on page 27.

Reported EPS of $2.57 was up $0.76 or 42% from the prior year. Adjusted EPS of $2.32 was up $0.38 or 19%. Results reflect strong growth in U.S. P&C, good performance in Canadian P&C and a lower loss in Corporate Services, partially offset by lower income in BMO Capital Markets. Wealth Management results increased, largely reflecting less elevated reinsurance claims in the current year.

Summary income statements and data for the quarter and comparative quarters are outlined on page 63.

The combined Personal and Commercial banking business reported net income of $1,047 million and adjusted net income of $1,059 million were both up 17% from the prior year, or 16% excluding the impact of the stronger U.S. dollar. Canadian P&C reported net income of $675 million and adjusted net income of $676 million both increased $51 million or 8%, reflecting revenue growth and lower provisions for credit losses, partially offset by higher expenses. On a Canadian dollar basis, U.S. P&C reported net income of $372 million increased 37%, and adjusted net income of $383 million increased 36%. On a U.S. dollar basis, U.S. P&C reported net income of $285 million increased $71 million or 33%, and adjusted net income of $294 million increased $71 million or 31% from the prior year, due to good revenue growth and lower taxes from the benefit of U.S. tax reform and a favourable U.S. tax item, partially offset by higher expenses and higher provisions for credit losses. The benefit of U.S. tax reform was approximately $28 million in reported net income and $29 million in adjusted net income in the quarter. Wealth Management reported net income of $219 million increased $44 million or 25%, and adjusted net income of $229 million increased $40 million or 21%. Net income in the current quarter was impacted by elevated reinsurance claims and a legal provision. Traditional wealth reported net income of $192 million was unchanged and adjusted net income of $202 million decreased $4 million or 2%, as business growth and lower taxes were more than offset by a legal provision and higher expenses. Insurance net income of $27 million was below trend but increased $44 million from last year, primarily due to less elevated reinsurance claims in the current year, with this partially offset by unfavourable market movements in the current quarter relative to favourable market movements in the prior year. BMO Capital Markets reported net income of $298 million decreased $18 million or 6%, and adjusted net income of $309 million decreased $7 million or 2%, as higher Investment and Corporate Banking revenue and lower taxes were more than offset by higher expenses and lower Trading Products revenue. Corporate Services reported net income for the quarter was $131 million, compared with a net loss of $158 million in the prior year. The adjusted net loss for the quarter was $68 million, compared with an adjusted net loss of $102 million in the prior year. Adjusted results exclude a benefit of $203 million after-tax from the remeasurement of an employee benefit liability in the current year and a restructuring charge in the prior year, as well as acquisition integration costs in both periods. Adjusted results increased, mainly due to higher revenue excluding the teb adjustment and lower expenses. Reported results increased due to the impact of the adjusting items and the other drivers noted above.

Total revenue of $5,922 million increased $267 million or 5% from the fourth quarter a year ago. Total revenue, net of CCPB, of $5,532 million increased $450 million or 9%, or 8% excluding the impact of the stronger U.S. dollar. Canadian P&C revenue increased 4% due to higher balances across most products, increased non-interest revenue and higher margins. U.S. P&C revenue increased 11% on a Canadian dollar basis, and increased 8% on a U.S. dollar basis, mainly due to higher deposit revenue and increased loan volumes, net of loan spread compression. Traditional wealth revenue increased 3% due to business growth from higher deposit and loan revenue, net new client assets and higher equity markets on average, partially offset by a legal provision in the current year and the impact of the divestiture of a non-core business in the prior year. Insurance revenue, net of CCPB, of $79 million increased $36 million from the prior year, primarily due to less elevated reinsurance claims in the current year, with this partially offset by unfavourable market movements in the current quarter relative to favourable market movements in the prior year. BMO Capital Markets revenue increased 1%, and was relatively unchanged excluding the impact of the stronger U.S. dollar. Investment and Corporate Banking revenue increased, mainly due to higher corporate banking-related revenue, while underwriting and advisory revenue decreased slightly from a strong quarter a year ago. Trading Products revenue decreased, primarily due to softer interest rate trading and lower new equity issuances, partially offset by the impact of the acquisition of KGS-Alpha in the quarter. Corporate Services revenue increased due to a lower group teb adjustment and higher revenue excluding teb.

Net interest income of $2,669 million increased $134 million or 5% from the prior year, or 4% excluding the impact of the stronger U.S. dollar. Net interest income, excluding trading, increased $187 million or 7%, largely due to higher deposit and loan volumes in the P&C businesses. Average earning assets of $711.7 billion increased $69.1 billion or 11%, or 9% excluding the impact of the stronger U.S. dollar, due to loan growth, higher securities, higher securities borrowed or purchased under resale agreements and increased cash resources. BMO's overall net interest margin decreased 8 basis points, or 7 basis points on an excluding trading basis, primarily driven by lower spreads in BMO Capital Markets, mainly due to higher volumes of lower spread assets.

Net non-interest revenue of $2,863 million increased $316 million or 12%. Excluding trading revenue, net non-interest revenue increased $141 million or 6%, with increases in most non-interest revenue categories.

Gross insurance revenue decreased $144 million from the prior year, due to increases in long-term interest rates decreasing the fair value of investments in the current year, compared with decreases in long-term interest rates increasing the fair value of investments in the prior year and weaker equity markets in the current year, partially offset by higher annuity sales. These fair value changes are largely offset by changes in the fair value of policy benefit liabilities, the impact of which is reflected in insurance claims, commissions and changes in policy benefit liabilities, as discussed below.

The total provision for credit losses was $175 million, a decrease of $27 million from the prior year. The provision for credit losses on impaired loans of $177 million decreased $25 million, primarily due to lower provisions in the P&C businesses and net recoveries in both BMO Capital Markets and Corporate Services, compared with provisions in the prior year. There was a decrease in credit losses on performing loans of $2 million, as net recoveries of credit losses in Canadian P&C, BMO Capital Markets and Corporate Services were largely offset by provisions in U.S P&C.

Insurance claims, commissions and changes in policy benefit liabilities were $390 million in the fourth quarter of 2018, a decrease of $183 million from the fourth quarter of 2017, due to the impact of increases in long-term interest rates decreasing the fair value of policy benefit liabilities in the current quarter, compared with decreases in long-term interest rates increasing the fair value of policy benefit liabilities in the prior

year, less elevated reinsurance claims in the current year and the impact of weaker equity markets in the current year, partially offset by higher annuity sales. The changes related to the fair value of policy benefit liabilities and annuity sales were largely offset in revenue.

Reported non-interest expense of $3,224 million decreased $151 million or 4% from the fourth quarter in the prior year. Adjusted non-interest expense of $3,452 million increased $194 million or 6%, or 5% excluding the impact of the stronger U.S. dollar, largely reflecting higher employee-related expenses, including an acquisition, higher technology costs and a gain on sale of an office building in the prior year. Adjusted non-interest expense excludes a benefit of $277 million pre-tax in the current quarter from the remeasurement of an employee benefit liability, a restructuring charge of $59 million in the prior year and acquisition integration costs and the amortization of acquisition-related intangible assets in both periods.

The provision for income taxes of $438 million increased $160 million from the fourth quarter of 2017. The effective tax rate for the quarter was 20.6%, compared with 18.5% in the prior year. The adjusted provision for income taxes of $376 million increased $63 million from the prior year. The adjusted effective tax rate was 19.7% in the fourth quarter of 2018, compared with 19.3% in the prior year. The higher reported and adjusted effective tax rates in the current quarter relative to the fourth quarter of 2017 were primarily due to lower tax-exempt income from securities and changes in earnings mix, partially offset by a favourable U.S. tax item and the benefit of U.S. tax reform. On a teb basis, the reported effective tax rate for the quarter was 23.0%, compared with 27.1% in the prior year and the adjusted effective tax rate for the quarter was 22.5%, compared with 27.2% in the prior year.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

2017 Financial Performance Review

The preceding discussions in the MD&A focused on our performance in fiscal 2018. This section summarizes our performance in fiscal 2017 relative to fiscal 2016. As noted on page 24, certain prior-year data has been reclassified to conform with the presentation in 2018, including restatements resulting from transfers between operating groups. Further information on these restatements is provided on page 44.

Net Income

Net income of $5,350 million increased $719 million or 16% in 2017, and adjusted net income of $5,508 million increased $488 million or 10% from 2016. Adjusted net income excludes a decrease in the collective allowance in 2017 and a negative cumulative accounting adjustment in 2016, as well as restructuring costs, the amortization of acquisition-related intangible assets and acquisition integration costs in both years. The impact of the weaker U.S. dollar on net income was not significant. Reported and adjusted net income growth reflected the benefits of good performance in Canadian P&C, Wealth Management and BMO Capital Markets. Corporate Services results were also higher, while results in U.S. P&C were relatively flat compared with 2016.

The impact of the following items on net income and net income growth in 2017 largely offset each other: a net gain of $133 million, reflecting a $168 million after-tax gain on the sale of Moneris US and a $35 million after-tax loss on the sale of a portion of the U.S. indirect auto loan portfolio; elevated insurance claims of $112 million in our reinsurance business, largely resulting from the impact of hurricanes Irma, Maria and Harvey; and the 2016 write-down of an equity investment net of a gain on its subsequent sale.

Return on Equity

Return on equity (ROE) was 13.3% and adjusted ROE was 13.7% in 2017, compared with 12.1% and 13.1%, respectively, in 2016. ROE increased in 2017, primarily due to growth in income exceeding growth in common equity. There was an increase of $692 million or 15% in net income available to common shareholders, and an increase of $461 million or 10% in adjusted net income available to common shareholders in 2017. Average common shareholders' equity increased $2.0 billion or 5% from 2016, primarily due to an increase in retained earnings, partially offset by lower accumulated other comprehensive income. The reported return on tangible common equity (ROTCE) was 16.3%, compared with 15.3% in 2016, and adjusted ROTCE was 16.5% in 2017, compared with 16.1% in 2016.

Revenue

Revenue, net of commissions and changes in policy benefit liabilities (CCPB), increased $1,178 million or 6% to $20,722 million in 2017. Adjusted revenue, net of CCPB, which excludes a negative cumulative accounting adjustment recorded in 2016 in non-interest revenue, increased $1,094 million or 6% to $20,722 million in 2017. Results were driven by good performance in Canadian P&C, Wealth Management and BMO Capital Markets.

Insurance Claims, Commissions and Changes in Policy Benefit Liabilities

Insurance claims, commissions and changes in policy benefit liabilities were $1,538 million in 2017, a decrease of $5 million from $1,543 million in 2016, with increases in long-term interest rates reducing the fair value of policy benefit liabilities in 2017, compared with reductions in long-term interest rates increasing the fair value of policy benefit liabilities in 2016. This was offset by the impact of higher annuity sales, elevated reinsurance claims and growth in the underlying business. The decrease related to the fair value of policy benefit liabilities and the increase related to annuity sales were largely offset in revenue.

Provision for Credit Losses

The provision for credit losses (PCL) was $746 million in 2017, a decrease from $771 million in 2016. There was a $76 million pre-tax decrease in the collective allowance in 2017, largely as a result of positive portfolio migration, which reduced the total provision for credit losses.

Non-Interest Expense

Non-interest expense increased $289 million or 2% to $13,330 million in 2017. Adjusted non-interest expense increased $447 million or 4% to $13,035 million in 2017. Adjusted non-interest expense excludes restructuring costs, the amortization of acquisition-related intangible assets and acquisition integration costs in both years. Reported and adjusted expenses increased, primarily due to higher employee-related expenses and an increase in technology costs, partially offset by our focus on disciplined expense management.

Provision for Income Taxes

The provision for income taxes was $1,296 million in 2017, compared with $1,101 million in 2016. The reported effective tax rate in 2017 was 19.5%, compared with 19.2% in 2016. The adjusted provision for income taxes[1] was $1,357 million in 2017, compared with $1,249 million in 2016. The adjusted effective tax rate in 2017 was 19.8%, compared with 19.9% in 2016. The effective tax rate differed from the statutory rate primarily because of tax-exempt income from securities.

Canadian P&C

Reported net income of $2,511 million increased $294 million or 13% during the year and adjusted net income of $2,514 million, which excludes the amortization of acquisition-related intangible assets, increased $295 million or 13% from 2016. Revenue increased $454 million or 7% to $7,443 million due to increased non-interest revenue, including the gain on sale of Moneris US in 2017, and higher balance across most products, partially offset by lower margins. The gain on the sale of Moneris US contributed approximately 8% to net income growth and 3% to revenue growth in 2017. The provision for credit losses decreased $23 million or 5% to $483 million, reflecting lower commercial and consumer provisions. Non-interest expense was $3,622 million, up $122 million or 4% from 2016, reflecting continued investment in the business, including a focus on our digital strategy and select sales force investments.

U.S. P&C

Reported net income of $1,027 million decreased $24 million during the year, and adjusted net income of $1,073 million decreased $28 million from 2016, due to the weaker U.S. dollar which decreased net income by 1% in 2017. Adjusted net income excludes the amortization of acquisition-related intangible assets. All amounts in the following paragraph are on a U.S. dollar basis.

Reported net income of $787 million and adjusted net income of $823 million in 2017 were both relatively flat compared with the prior year. Revenue of $3,535 million increased $55 million or 2%, primarily due to higher deposit revenue and increased loan volumes, net of loan spread compression and the impact of the loss on the sale of a portion of the indirect auto loan portfolio in 2017. The loss on the loan sale had a negative impact of approximately 3% on reported and adjusted net income growth and 1% on revenue growth in 2017. The provision for credit losses of $221 million increased $33 million or 18% from 2016, reflecting higher commercial provisions, partially offset by lower consumer provisions. Non-interest expense of $2,253 million increased $54 million or 2% during the year, and adjusted non-interest expense of $2,204 million increased $57 million or 3% from 2016, mainly due to higher technology investments and marketing costs.

Wealth Management

Reported net income of $967 million increased $192 million or 25% from 2016. Adjusted net income of $1,032 million, which excludes the amortization of acquisition-related intangible assets and acquisition integration costs, increased $156 million or 18%. Traditional wealth reported net income of $729 million increased $177 million or 32% from 2016. Adjusted net income in traditional wealth of $794 million increased $141 million or 22%, primarily due to higher income related to an increase in assets under management resulting from improved equity markets and the accumulation of net new client assets, growth in deposit and loan balances, which were up 11% and 10%, respectively, and the benefits of productivity initiatives. Traditional wealth also included a write-down of an equity investment net of a gain on its subsequent sale in 2016 that had a positive impact of 7% on reported net income, 6% on adjusted net income growth, and 1% on revenue growth in 2017. Net income in insurance of $238 million increased $15 million or 7%, as the benefits from favourable market movements in 2017 relative to unfavourable movements in 2016 and business growth were largely offset by elevated claims of $112 million in our reinsurance business in 2017, largely resulting from the impact of hurricanes Irma, Maria and Harvey. Revenue, net of CCPB, of $4,676 million increased $310 million or 7%, due to the factors noted above. The provision for credit losses was $8 million, compared with $9 million in 2016. Non-interest expense was $3,351 million, compared with $3,337 million in 2016, and adjusted non-interest expense was $3,271 million, compared with $3,211 million in 2016, reflecting higher revenue-based costs, partially offset by the impact of the weaker British pound and U.S. dollar, and divestitures.

BMO Capital Markets

Reported net income of $1,275 million increased $40 million or 3% from the prior year. Adjusted net income of $1,277 million, which excludes the amortization of acquisition-related intangible assets, increased $41 million or 3%, due to increased revenue and lower loan loss provisions, partially offset by higher expenses. The impact of the weaker U.S. dollar was not significant. Revenue of $4,569 million increased $255 million or 6%, due to higher levels of client activity in investment banking and loan growth, as well as solid performance in our Trading Products business. The provision for credit losses of $44 million decreased $37 million from the prior year, largely due to a decrease in new provisions, primarily in the oil and gas sector. Non-interest expense increased $204 million or 8% to $2,778 million due to continued investment in the business and higher employee-related costs.

Corporate Services

Corporate Services reported net loss was $430 million in 2017, compared with a reported net loss of $647 million in 2016. The adjusted net loss was $388 million in 2017, compared with an adjusted net loss of $412 million in 2016. Adjusted net loss excludes a decrease in the collective allowance in 2017 and a negative cumulative accounting adjustment in 2016, as well as restructuring costs and acquisition integration costs in both years. Adjusted net loss decreased due to higher revenue excluding teb adjustments, partially offset by lower credit recoveries. Reported net loss improved, mainly due to lower restructuring costs in 2017, the negative cumulative accounting adjustment in 2016, a decrease in the collective allowance in 2017, and the net impact of the drivers noted above.

(1) The adjusted provision is calculated using adjusted net income rather than net income in the determination of income subject to tax.

Adjusted results in this section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

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Financial Condition Review

Summary Balance Sheet

(Canadian $ in millions) As at October 31	2018	2017	2016
Assets			
Cash and interest bearing deposits with banks	**50,447**	39,089	36,102
Securities	**180,935**	163,198	149,985
Securities borrowed or purchased under resale agreements	**85,051**	75,047	66,646
Net loans	**383,991**	358,507	357,518
Derivative instruments	**26,204**	28,951	39,183
Other assets	**47,420**	44,788	38,501
Total assets	**774,048**	709,580	687,935
Liabilities and Shareholders' Equity			
Deposits	**522,051**	479,792	470,281
Derivative instruments	**24,411**	27,804	38,227
Securities lent or sold under repurchase agreements	**66,684**	55,119	40,718
Other liabilities	**108,393**	97,482	91,942
Subordinated debt	**6,782**	5,029	4,439
Shareholders' equity	**45,727**	44,354	42,304
Non-controlling interest in subsidiaries	**–**	–	24
Total liabilities and shareholders' equity	**774,048**	709,580	687,935

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

Overview

Total assets of $774.0 billion increased $64.5 billion from October 31, 2017. The stronger U.S dollar increased assets by $6.5 billion, excluding the impact on derivative assets. Total liabilities of $728.3 billion increased $63.1 billion from October 31, 2017. The stronger U.S dollar increased liabilities by $6.3 billion, excluding the impact on derivative liabilities. Shareholders' equity increased $1.4 billion from October 31, 2017.

Cash and Interest Bearing Deposits with Banks

Cash and interest bearing deposits with banks increased $11.4 billion, or $10.6 billion excluding the impact of the stronger U.S. dollar, due to higher balances held with central banks.

Securities

(Canadian $ in millions) As at October 31	2018	2017	2016
Trading	**99,697**	99,069	84,458
FVTPL (1)	**11,611**	na	na
FVOCI – Debt and equity (2)	**62,440**	na	na
Available-for-sale	**na**	54,075	55,663
Amortized cost (3)	**6,485**	na	na
Held-to-maturity	**na**	9,094	8,965
Other	**702**	960	899
Total securities	**180,935**	163,198	149,985

(1) Comprised of $2,828 million mandatorily measured at fair value and $8,783 million designated at fair value.
(2) Includes allowances for credit losses on FVOCI debt securities of $2 million (na at October 31, 2017).
(3) Net of allowances for credit losses of $1 million (na at October 31, 2017).
na – Not applicable due to IFRS 9 adoption.

Securities increased $17.7 billion, or $16.0 billion excluding the impact of the stronger U.S. dollar, as a result of liquidity management activities and higher balances in BMO Capital Markets reflecting the acquisition.

Securities Borrowed or Purchased Under Resale Agreements

Securities borrowed or purchased under resale agreements increased $10.0 billion, or $9.2 billion excluding the impact of the stronger U.S. dollar, driven by higher liquid asset levels in Corporate Services and higher balances in BMO Capital Markets.

Net Loans

(Canadian $ in millions) As at October 31	2018	2017	2016
Residential mortgages	**119,620**	115,258	112,277
Non-residential mortgages	**14,017**	11,744	11,376
Consumer instalment and other personal	**63,225**	61,944	64,680
Credit cards	**8,329**	8,071	8,101
Businesses and governments	**180,439**	163,323	163,009
Gross loans	**385,630**	360,340	359,443
Allowance for credit losses	**(1,639)**	(1,833)	(1,925)
Total net loans	**383,991**	358,507	357,518

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

Net loans increased $25.5 billion, or $22.7 billion excluding the impact of the stronger U.S. dollar, largely due to an increase in business and government loans in the Personal and Commercial Banking businesses and BMO Capital Markets, and higher residential mortgages, in part due to the purchase of a mortgage portfolio in U.S. P&C.

Table 7 on page 132 of the Supplemental Information provides a comparative summary of loans by geographic location and product. Table 9 on page 133 provides a comparative summary of net loans in Canada by province and industry. Loan quality is discussed on page 91 and further details on loans are provided in Notes 4, 6 and 24 on pages 157, 164 and 201 of the consolidated financial statements.

Derivative Financial Assets

Derivative financial assets decreased $2.7 billion, primarily due to a decrease in the fair value of foreign exchange contracts partially offset by an increase in the fair value of commodity and equity contracts.

Other Assets

Other assets include customers' liability under acceptances, premises and equipment, goodwill and intangible assets, current and deferred tax asset, accounts receivable and prepaid expenses. Other assets increased $2.6 billion, primarily due to a $2.0 billion increase in customers' liability under acceptances.

Deposits

(Canadian $ in millions)

As at October 31	**2018**	2017	2016
Banks	**27,907**	28,205	31,489
Businesses and governments	**313,300**	283,276	275,905
Individuals	**180,844**	168,311	162,887
Total deposits	**522,051**	479,792	470,281

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

Deposits increased $42.3 billion, or $37.2 billion excluding the impact of the stronger U.S. dollar, reflecting higher levels of customer and wholesale deposits. Deposits by businesses and governments increased $26.7 billion, reflecting higher wholesale funding for loan and liquid asset growth and growth in customer balances. Deposits by individuals increased $11.3 billion. Deposits by banks decreased $0.8 billion. Further details on the composition of deposits are provided in Note 13 on page 178 of the consolidated financial statements and in the Liquidity and Funding Risk section on page 100.

Derivative Financial Liabilities

Derivative liabilities decreased $3.4 billion, due to a decline in the fair value of foreign exchange and equity contracts, partially offset by an increase in the fair value of commodity and interest rate contracts.

Securities Lent or Sold Under Repurchase Agreements

Securities lent or sold under repurchase agreements increased $11.6 billion, or $10.8 billion excluding the impact of the stronger U.S. dollar, driven by activity in BMO Capital Markets, including the acquisition.

Other Liabilities

Other liabilities primarily include securities sold but not yet purchased, securitization and structured entities' liabilities, acceptances and Federal Home Loan Bank (FHLB) advances. Other liabilities increased $10.9 billion, primarily due to a $4.3 billion increase in FHLB advances and securitization and structured entities liabilities to fund loan and liquid asset growth, a $3.6 billion increase in securities sold but not yet purchased and a $2.0 billion increase in acceptances. Further details on the composition of other liabilities are provided in Note 14 on page 179 of the consolidated financial statements.

Subordinated Debt

Subordinated debt increased $1.8 billion from the prior year, as new issuances exceeded a redemption. Further details on the composition of subordinated debt are provided in Note 15 on page 181 of the consolidated financial statements.

Equity

(Canadian $ in millions)

As at October 31	**2018**	2017	2016
Share capital			
Preferred shares	**4,340**	4,240	3,840
Common shares	**12,929**	13,032	12,539
Contributed surplus	**300**	307	294
Retained earnings	**25,856**	23,709	21,205
Accumulated other comprehensive income	**2,302**	3,066	4,426
Total shareholders' equity	**45,727**	44,354	42,304
Non-controlling interest in subsidiaries	**–**	–	24
Total equity	**45,727**	44,354	42,328

Total equity increased $1.4 billion due to a $2.1 billion increase in retained earnings, partially offset by a $0.8 billion decrease in accumulated other comprehensive income. Retained earnings increased as a result of net income in the current year, partially offset by dividends and common shares repurchased for cancellation. Accumulated other comprehensive income decreased, primarily due to the impact of higher interest rates.

Share capital was unchanged, as an increase in preferred shares was offset by a decrease in common shares. Preferred shares increased due to a new issuance, net of redemptions. Common shares decreased due to the repurchase of shares for cancellation, partially offset by the issuance of shares under the Stock Option Plan. Our Consolidated Statement of Changes in Equity on page 146 provides a summary of items that increase or reduce shareholders' equity, while Note 16 on page 182 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 on the following page.

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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 our target regulatory capital ratios and internal assessment of required economic capital;
- is consistent with our target credit ratings;
- underpins our operating groups' business strategies; and
- supports depositor, investor and regulator confidence, while building long-term shareholder value.

Capital Management Framework



The principles and key elements of BMO's capital management framework are outlined in our Capital Management Corporate Policy and in our annual capital plan, which includes the results of our 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 our ICAAP and in conjunction with our annual business plan, promoting alignment between our 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 BMO's risk profile and capital requirements. The capital management framework seeks to ensure that we are adequately capitalized given the risks we take in the normal course of business, as well as under stress, and it 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. BMO evaluates assessments of actual and forecast capital adequacy against the capital plan throughout the year, and updates the plan to reflect changes in business activities, risk profile, operating environment or regulatory expectations.

BMO uses regulatory and economic capital to evaluate business performance and considers capital implications in its strategic, tactical and transactional decision-making. By allocating our 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 our 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 our operating groups.

Refer to the Enterprise-Wide Risk Management section on page 78 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 our Capital Management Corporate Policy framework, capital plan and capital adequacy assessments. The Board regularly reviews BMO's capital position and key capital management activities, and the Risk Review Committee reviews the ICAAP-determined capital adequacy assessment results. The Balance Sheet and 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 the frameworks related to capital and risk management, as well as the ICAAP. The Corporate Audit Division, as the third line of defence, verifies our adherence to controls and identifies opportunities to strengthen our processes.

Regulatory Capital Requirements

Regulatory capital requirements for BMO are determined in accordance with the Capital Adequacy Requirements (CAR) Guideline of the Office of the Superintendent of Financial Institutions Canada (OSFI), which is based on the capital standards developed by the Basel Committee on Banking Supervision (BCBS). The minimum capital ratios set out in the CAR Guideline are a 4.5% Common Equity Tier 1 (CET1) Ratio, 6% Tier 1 Capital Ratio and 8% Total Capital Ratio, which are calculated using a nine-year transitional phase-out of non-qualifying capital instruments that ends in 2022. In addition to the minimum capital requirements, OSFI also expects domestic systemically important banks (D-SIBs) to hold Pillar 1 and Pillar 2 buffers, which are meant to be used as a normal first step in periods of stress. The Pillar 1 buffers include a Capital Conservation Buffer of 2.5%, a D-SIB Common Equity Tier 1 surcharge of 1%, and the Countercyclical Buffer (which can range from 0% to 2.5%, depending on the bank's exposure to jurisdictions that have activated the buffer). The Domestic Stability Buffer is a Pillar 2 buffer and is currently set at 1.5%. OSFI's capital requirements are summarized in the following table.

(% of risk-weighted assets)	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, 2018
Common Equity Tier 1 Ratio	4.5%	3.5%	1.5%	9.5%	11.3%
Tier 1 Capital Ratio	6.0%	3.5%	1.5%	11.0%	12.9%
Total Capital Ratio	8.0%	3.5%	1.5%	13.0%	15.2%
Leverage Ratio	3.0%	na	na	3.0%	4.2%

(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. The 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 2018). 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 Domestic Stability Buffer (DSB) against Pillar 2 risks associated with systemic vulnerabilities. The DSB can range from 0% to 2.5% of total RWA and is currently set at 1.5%. Breaches of the DSB will not result in a bank being subject to automatic constraints on capital distributions.
na – not applicable

Regulatory Capital Ratios

The **Common Equity Tier 1 Ratio** reflects CET1 capital divided by CET1 capital RWA.

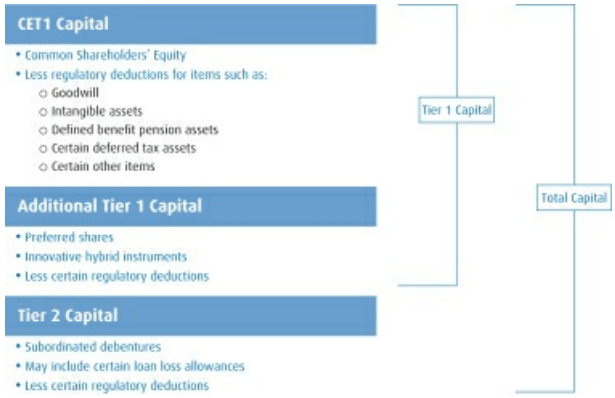
The **Tier 1 Capital Ratio** reflects Tier 1 capital divided by Tier 1 capital RWA.

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

The **Leverage Ratio** reflects Tier 1 capital divided by the sum of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

Regulatory Capital Elements

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



OSFI's CAR Guideline also requires the implementation of BCBS guidance on non-viability contingent capital (NVCC). NVCC provisions 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 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.

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.

Canada's Bank Recapitalization (Bail-In) Regime became effective on September 23, 2018. Eligible senior debt (described below) issued after this date 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.

Risk-Weighted Assets

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.

BMO primarily uses 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 downturn 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 and are updated periodically. Validation procedures related to these parameters are in place and are enhanced periodically in order to quantify and differentiate risks appropriately to reflect changes in economic and credit conditions. Credit RWA related to certain Canadian and U.S. portfolios are determined using the Standardized Approach.

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

BMO uses the Advanced Measurement Approach, a risk-sensitive capital model, along with the Standardized Approach in certain areas under OSFI rules, to determine capital requirements for operational risk.

For institutions using advanced approaches for credit risk or operational risk, there is 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 operative for the bank in 2017 and in the first quarter of 2018, and a floor adjustment was reflected in our total RWA for those periods. We have not had a floor-based RWA adjustment since the revised floor calculation, as outlined below, became effective in the second quarter of 2018.

In accordance with guidance from OSFI, the credit valuation adjustment (CVA) risk capital charge for Canadian banks has been phasing in since the first quarter of 2014. In 2017 and 2018, the CVA risk capital charge applicable to CET1 was 72% and 80% of the fully implemented charge, respectively. The charge will be fully phased in by 2019.

Capital Regulatory Developments

A number of regulatory capital changes, some finalized and some under development, will lead to upward pressure on the amount of capital BMO is required to hold over time. The nature of these changes is outlined below.

In October 2018, OSFI issued the updated version of the CAR Guideline for implementation in the first quarter of 2019. The most significant revisions include the domestic implementation of the Standardized Approach for counterparty credit risk (SA-CCR) and revised capital requirements for bank exposures to central counterparties, as well as a revised securitization framework. The update provides for transitional arrangements under which certain aspects of the revised securitization framework will not apply until fiscal 2020 or 2021. These changes are expected to modestly increase the amount of capital we are required to hold upon implementation. The revised CAR Guideline also incorporates the changes to the capital floor, announced by OSFI in January 2018, which include a shift to the Basel II Standardized Approach and a reduced floor factor transitioning from 70% in the second quarter of fiscal 2018 and 72.5% in the third quarter to 75% from the fourth quarter onward. In October 2018, OSFI issued the final version of the Leverage Requirements (LR) Guideline for implementation in the first quarter of 2019 to align with the changes related to counterparty credit risk and the securitization framework in the revised CAR Guideline. In November 2018, OSFI issued revisions to the Leverage Ratio Disclosure Requirements Guideline, which reflect the changes to the LR and CAR Guidelines, effective for the first quarter of 2019.

In June 2018, OSFI published details on the Domestic Stability Buffer (DSB), which it expects to be maintained by D-SIBs against Pillar 2 risks associated with systemic vulnerabilities. The DSB, which is met with CET1 capital, will range between 0% and 2.5% of a bank's total RWA and is currently set at 1.5%.

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. The Bail-In Regime is consistent with the international standards developed by the Financial Stability Board, but is tailored to the Canadian context. 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. In conjunction with the regulations, OSFI released its final Total Loss Absorbing Capacity (TLAC) guideline for D-SIBs, which establishes minimum standards for a risk-based TLAC ratio and TLAC leverage ratio that come into effect on November 1, 2021. In August 2018, OSFI set the minimum requirements as a risk-based TLAC ratio of 21.5% RWA and a TLAC leverage ratio of 6.75%. In addition, D-SIBs will be expected to maintain buffers above the minimum TLAC ratios, including the DSB (currently 1.5% of total RWA) and any capital add-ons for idiosyncratic Pillar 2 risks. The D-SIBs' supervisory target risk-based TLAC ratio is expected to be 23.0% when the minimum requirements come into effect on November 1, 2021, inclusive of buffers as currently set. In May 2018, OSFI issued the final TLAC Disclosure Requirements Guideline effective for the first quarter of fiscal 2019.

In July 2018, OSFI issued for consultation a discussion paper on the proposed domestic implementation of the final Basel III reforms, which include a revised Standardized Approach for credit risk, constraints on the use of internal ratings-based approaches, revisions to the credit valuation adjustment (CVA) framework, a revised Standardized Approach for operational risk, revisions to the leverage ratio framework, and calibration of standardized output floors. The discussion paper sets out OSFI's preliminary views on the scope and timing of the implementation of the final Basel III reforms in Canada. While the BCBS outlined a five-year transition period for the RWA output floor from 50% in 2022 to 72.5% in 2027, OSFI's discussion paper proposes to set the output floor at 72.5% upon implementation of the reforms in the first quarter of 2022.

In March 2018, the BCBS issued a consultative document on revisions to the minimum capital requirements for market risk, commonly referred to as the fundamental review of the trading book. The consultative document proposes a number of revisions to the market risk standard published in January 2016, including a simplified alternative to the revised Standardized Approach. The implementation date of the revised market risk standard has been extended to January 1, 2022, allowing additional time for banks to develop the systems infrastructure needed to apply the standard and for BCBS to address certain outstanding issues.

2018 Regulatory Capital Review

BMO is well capitalized, with capital ratios that exceed OSFI's published requirements for large Canadian banks, including the 1.5% DSB. Our CET1 Ratio was 11.3% at October 31, 2018, compared with 11.4% at October 31, 2017. The CET1 Ratio decreased from the end of fiscal 2017 as higher CET1 capital from retained earnings growth, net of share repurchases, was more than offset by higher RWA, including an acquisition.

Our Tier 1 Capital and Total Capital Ratios were 12.9% and 15.2%, respectively, at October 31, 2018, compared with 13.0% and 15.1%, respectively, at October 31, 2017. The decrease in the Tier 1 Capital Ratio was mainly due to the factors impacting the CET1 Ratio discussed above. The increase in the Total Capital Ratio was mainly due to the issuances of subordinated notes, net of redemptions, partially offset by the factors impacting the Tier 1 Ratio.

The impact of foreign exchange movements on capital ratios was largely offset. BMO's investments in foreign operations are primarily denominated in U.S. dollars, and the foreign exchange impact of U.S.-dollar-denominated RWA capital deductions may result in variability in the bank's capital ratios. BMO may manage the impact of foreign exchange movements on its capital ratios and did so during 2018. Any such activities could also impact our book value and return on equity.

BMO's Leverage Ratio was 4.2% at October 31, 2018, down from 4.4% at October 31, 2017, due to higher leverage exposures driven mainly by business growth.

While the ratios discussed above reflect the bank's consolidated capital base, BMO conducts 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 holding company with total consolidated assets of US$50 billion or more, our subsidiary BMO Financial Corp. (BFC) is subject to the Federal Reserve Board's (FRB) Comprehensive Capital Analysis and Review (CCAR) and Dodd-Frank Act Stress Test (DFAST) requirements. CCAR is an annual exercise conducted by the FRB to assess whether the largest bank holding companies operating in the United States have sufficient capital to support operations throughout periods of economic and financial stress and have robust, forward-looking capital planning processes that address their unique risks. DFAST is a forward-looking exercise complementary to CCAR and conducted by the FRB to assess whether the financial companies that it supervises have sufficient capital to absorb losses and support operations during adverse economic conditions. In June 2018, the FRB announced its decision not to object to BFC's capital plan as evaluated under the 2018 CCAR assessment. Results under the DFAST supervisory severely adverse scenario indicate that the capital ratios for BFC and its bank subsidiary BMO Harris Bank N.A. are above well-capitalized levels, as disclosed in their results in June 2018. BFC's own mid-cycle company-run stress tests (under DFAST) also indicate that the capital ratios for BFC are above well-capitalized levels, as disclosed in their results in October 2018.

Regulatory Capital (1)

(Canadian $ in millions)

As at October 31	**2018**	2017
Common Equity Tier 1 capital: instruments and reserves		
Directly issued qualifying common share capital plus related stock surplus	**13,229**	13,339
Retained earnings	**25,856**	23,709
Accumulated other comprehensive income (and other reserves)	**2,302**	3,066
Goodwill and other intangibles (net of related tax liability)	**(8,261)**	(7,885)
Other common equity Tier 1 capital deductions	**(405)**	(1,596)
Common Equity Tier 1 capital (CET1)	**32,721**	30,633
Additional Tier 1 capital: instruments		
Directly issued qualifying Additional Tier 1 instruments plus related stock surplus	**4,050**	3,650
Directly issued capital instruments subject to phase-out from Additional Tier 1	**740**	1,040
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	**(291)**	(215)
Additional Tier 1 capital (AT1)	**4,499**	4,475
Tier 1 capital (T1 = CET1 + AT1)	**37,220**	35,108
Tier 2 capital: instruments and provisions		
Directly issued qualifying Tier 2 instruments plus related stock surplus	**6,639**	3,976
Directly issued capital instruments subject to phase-out from Tier 2 capital	**143**	1,053
Tier 2 instruments (and CET1 and AT1 instruments not 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	**235**	509
Total regulatory adjustments to Tier 2 capital	**(121)**	(50)
Tier 2 capital (T2)	**6,896**	5,488
Total capital (TC = T1 + T2)	**44,116**	40,596

(1) Non-qualifying Tier 1 and Tier 2 capital instruments are phased out at a rate of 10% per year from January 1, 2013 to January 1, 2022.

Our CET1 capital and Tier 1 capital levels were $32.7 billion and $37.2 billion, respectively, at October 31, 2018, up from $30.6 billion and $35.1 billion, respectively, at October 31, 2017. CET1 capital increased, largely driven by retained earnings growth net of share repurchases. The increase in Tier 1 capital since October 31, 2017 was mainly due to the factors impacting CET1 capital.

Total capital was $44.1 billion at October 31, 2018, up from $40.6 billion at October 31, 2017, attributable to the growth in Tier 1 capital discussed above, and the issuances of subordinated notes, net of redemptions.

Changes in Risk-Weighted Assets

Total CET 1 Capital RWA were $289.2 billion at October 31, 2018, up from $269.5 billion at October 31, 2017. Credit Risk RWA were $240.5 billion at October 31, 2018, up from $219.8 billion at October 31, 2017. The increase was largely due to business growth and foreign exchange impacts, partially offset by positive asset quality changes. As noted above, the impact of foreign exchange movements is largely offset in the CET1 Ratio. Market Risk RWA were $13.5 billion at October 31, 2018, up from $8.4 billion at October 31, 2017, largely attributable to business growth, mainly driven by an acquisition, and market variables, partially offset by methodology and policy changes. Operational Risk RWA were $35.2 billion at October 31, 2018, up from $32.8 billion at October 31, 2017, primarily due to growth in the bank's average gross income. There was no capital floor RWA adjustment at October 31, 2018, down from $8.4 billion at October 31, 2017.

(Canadian $ in millions)

As at October 31	**2018**	2017
Credit Risk		
Wholesale		
Corporate, including specialized lending	**112,394**	100,421
Corporate small and medium-sized enterprises	**39,496**	35,246
Sovereign	**3,323**	1,627
Bank	**4,790**	5,892
Retail		
Residential mortgages, excluding home equity line of credit	**9,527**	7,984
Home equity line of credit	**4,846**	5,426
Qualifying revolving retail	**5,452**	5,465
Other retail, excluding small and medium-sized enterprises	**12,078**	11,258
Retail small and medium-sized enterprises	**7,264**	7,582
Equity	**1,971**	1,626
Trading book	**9,693**	9,542
Securitization	**2,295**	2,476
Other credit risk assets – non-counterparty managed assets	**16,776**	15,631
Scaling factor for credit risk assets under AIRB Approach (1)	**10,595**	9,648
Total Credit Risk	**240,500**	219,824
Market Risk	**13,532**	8,448
Operational Risk	**35,205**	32,773
CET1 Capital Risk-Weighted Assets before Capital floor	**289,237**	261,045
Basel I Capital Floor (2)	**–**	8,421
CET1 Capital Risk-Weighted Assets	**289,237**	269,466
Tier 1 Capital Risk-Weighted Assets before CVA and Capital floor	**289,237**	261,045
Additional CVA adjustment, prescribed by OSFI, for Tier 1 Capital	**183**	290
Basel I Capital Floor (2)	**–**	8,131
Tier 1 Capital Risk-Weighted Assets	**289,420**	269,466
Total Capital Risk-Weighted Assets before CVA and Capital floor	**289,237**	261,045
Additional CVA adjustment, prescribed by OSFI, for Total Capital	**367**	522
Basel I Capital Floor (2)	**–**	7,899
Total Capital Risk-Weighted Assets	**289,604**	269,466

(1) The scaling factor is applied to RWA amounts for credit risk under the AIRB Approach.
(2) For institutions using advanced approaches for credit risk or operational risk, there is a capital floor as prescribed in OSFI's CAR Guideline. OSFI revised its capital floor calculation effective second quarter of fiscal 2018 as discussed in the Regulatory Capital Developments section.

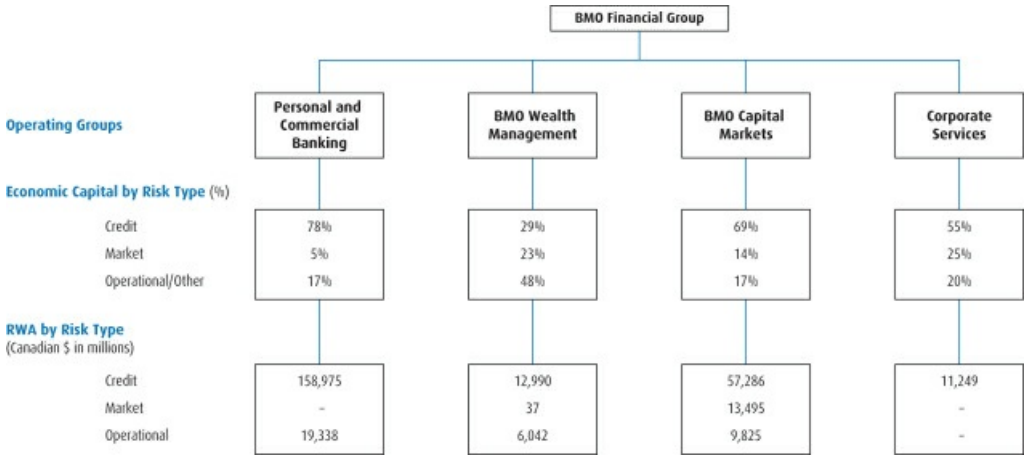
MANAGEMENT'S DISCUSSION AND ANALYSIS

Economic Capital

Economic capital is an expression of the enterprise's capital demand requirement relative to the bank's 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, and allows returns to be measured on a consistent basis across such risks. 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 and business, 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, 2018)



Capital Management Activities

On June 1, 2018, we renewed our normal course issuer bid (NCIB) effective for one year. Under this NCIB, we may purchase up to 20 million of our common shares for cancellation. The NCIB is a regular part of BMO's capital management strategy. The timing and amount of purchases under the NCIB are subject to management discretion based on factors such as market conditions and capital levels. The bank will consult with OSFI before making purchases under the NCIB. During 2018, we repurchased and cancelled 10 million of our common shares as part of the NCIB at an average cost of $99.05 per share, totalling $991 million. Of these common shares, 7 million were purchased on the TSX and 3 million were purchased pursuant to a specific share repurchase program. Specific share repurchases were made from an arm's-length third-party seller at a discount to the prevailing market price of our common shares on the TSX at the time of the purchases.

During 2018, BMO issued approximately 1.5 million common shares through the exercise of stock options.

During 2018, BMO completed the following Tier 1 and Tier 2 capital instrument issuances, redemptions and conversions.

Share Issuances, Redemptions and Conversions

(in millions) As at October 31, 2018	Issuance or redemption date	Number of shares	Amount
Common shares issued			
Stock options exercised		1.5	$ 99
Tier 1 Capital (1)			
Issuance of Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 44	September 17, 2018	16	$ 400
Redemption of Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 16	August 25, 2018	(6.3)	$ (157)
Redemption of Non-Cumulative Floating Rate Class B Preferred Shares, Series 17	August 25, 2018	(5.7)	$ (143)
Tier 2 Capital (1)			
Issuance of 3.803% Subordinated Notes due 2032	December 12, 2017		US$1,250
Issuance of 4.338% Subordinated Notes due 2028	October 5, 2018		US$ 850
Redemption of Series F Medium-Term Notes, First Tranche	March 28, 2018		$ (900)

(1) For further details on subordinated debt and share capital, see Notes 15 and 16 of the consolidated financial statements on pages 181 and 182, respectively.

If an NVCC trigger event were to occur, our 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 our 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 2.87 billion BMO common shares, assuming no accrued interest and no declared and unpaid dividends.

On November 16, 2018, BMO Capital Trust II, a subsidiary of Bank of Montreal, announced its intention to redeem all of its $450 million issued and outstanding BMO Tier 1 Notes – Series A on December 31, 2018.

Further details are provided in Notes 15 and 16 of the consolidated financial statements on pages 181 and 182, respectively.

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Outstanding Shares and NVCC Capital Instruments

As at October 31, 2018		Number of shares or dollar amount (in millions)	Dividends declared per share 2018	2017	2016
Common shares		639	**$ 3.78**	$ 3.56	$ 3.40
Class B Preferred shares					
Series 14 (1)		–	**–**	$ 0.66	$ 1.31
Series 15 (1)		–	**–**	$ 0.73	$ 1.45
Series 16 (2)		–	**$ 0.64**	$ 0.85	$ 0.85
Series 17 (2)		–	**$ 0.52**	$ 0.55	$ 0.53
Series 25 (3)	$	236	**$ 0.45**	$ 0.45	$ 0.84
Series 26 (3)	$	54	**$ 0.59**	$ 0.43	$ 0.10
Series 27*	$	500	**$ 1.00**	$ 1.00	$ 1.00
Series 29*	$	400	**$ 0.98**	$ 0.98	$ 0.98
Series 31*	$	300	**$ 0.95**	$ 0.95	$ 0.95
Series 33*	$	200	**$ 0.95**	$ 0.95	$ 0.95
Series 35*	$	150	**$ 1.25**	$ 1.25	$ 1.25
Series 36*	$	600	**$58.50**	$58.50	$65.03
Series 38*	$	600	**$ 1.21**	$ 1.33	–
Series 40*	$	500	**$ 1.13**	$ 0.80	–
Series 42*	$	400	**$ 1.10**	$ 0.45	–
Series 44*	$	400	**–**	–	–
Medium-Term Notes					
Series H – First Tranche* (4)	$	1,000	**na**	na	na
Series H – Second Tranche* (4)	$	1,000	**na**	na	na
Series I – First Tranche* (4)	$	1,250	**na**	na	na
Series I – Second Tranche* (4)	$	850	**na**	na	na
3.803% Subordinated Notes* (4)	US$	1,250	**na**	na	na
4.338% Subordinated Notes* (4)	US$	850	**na**	na	na
Stock options					
Vested		3.8			
Non-vested		2.3			

* Convertible into common shares
(1) Redeemed in May 2017.
(2) Redeemed in August 2018.
(3) In August 2016, approximately 2.2 million Series 25 Preferred Shares were converted into Series 26 Preferred Shares on a one-for-one basis.
(4) Note 15 of the consolidated financial statements on page 181 includes details on the Series H Medium-Term Notes, First Tranche and Second Tranche and Series I Medium-Term Notes, First Tranche and Second Tranche, USD 3.803% Subordinated Notes and USD 4.338% Subordinated Notes.
na – not applicable
Note 16 of the consolidated financial statements on page 182 includes details on share capital.

Dividends

Dividends declared per common share in fiscal 2018 totalled $3.78. Annual dividends declared represented 50.9% of reported net income and 43.8% of adjusted net income available to common shareholders on a last twelve months basis.

Our target dividend payout range (common share dividends as a percentage of net income available to shareholders, less preferred share dividends, based on earnings over the last twelve months) is 40% to 50%, providing shareholders with a competitive dividend yield. BMO's target dividend payout range seeks to provide shareholders with stable income while ensuring sufficient earnings are retained to support anticipated business growth, fund strategic investments and support capital adequacy.

At year end, BMO's common shares provided a 3.9% annualized dividend yield based on the year-end closing share price. On December 4, 2018, BMO announced that the Board of Directors had declared a quarterly dividend on common shares of $1.00 per share, up $0.04 per share or 4% from the prior quarter and up $0.07 per share or 8% from a year ago. The dividend is payable on February 26, 2019, to shareholders of record on February 1, 2019.

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). In fiscal 2018, common shares to supply the DRIP were purchased on the open market.

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 see the Caution Regarding Forward-Looking Statements.

Select Financial Instruments

The Financial Stability Board (FSB) issued a report in 2012 encouraging enhanced disclosure related to financial instruments that market participants had come to regard as carrying higher risk. An index of the disclosures recommended by the Enhanced Disclosure Task Force of the FSB and the pages on which these disclosures appear in our Annual Report or Supplementary Financial Information is provided on page 126.

Consumer Loans

In Canada, our Consumer Lending portfolio is comprised of three main asset classes: real estate secured lending (including residential mortgages and home equity products), instalment and other personal loans (including indirect automobile loans) and credit card loans. We do not have any subprime or Alt-A mortgage or home equity loan programs, nor do we purchase subprime or Alt-A loans from third-party lenders.

In the United States, our Consumer Lending portfolio is primarily comprised of three asset classes: residential first mortgages, home equity products and indirect automobile loans. The impact of aggressive market lending practices (e.g., high loan-to-value ratios and limited documentation), which were prevalent leading up to the global recession and drove high losses, continues to moderate. These lending practices were discontinued early in the recession, and our existing portfolio has performed well within our risk appetite.

In both Canada and the United States, consumer lending products are underwritten to prudent standards relative to credit scores, loan-to-value ratios and capacity assessment. Our lending practices consider the ability of our borrowers to repay and the underlying collateral value.

Further discussion of the Consumer Lending portfolio related to the Canadian housing market is provided in the Top and Emerging Risks That May Affect Future Results section on page 79.

Leveraged Finance

Leveraged finance loans are defined by BMO as loans to private equity businesses and mezzanine financings for which our assessment indicates a higher level of credit risk. BMO has some exposure to leveraged finance loans, which represented 1.7% of our total assets, with $13.5 billion outstanding at October 31, 2018 (1.8% and $12.7 billion, respectively, in 2017). Of this amount, $129 million or 1.0% of leveraged finance loans were classified as impaired ($197 million or 1.6% in 2017).

BMO-Sponsored Securitization Vehicles

BMO sponsors various vehicles that fund assets originated by either BMO (which are then securitized through a bank securitization vehicle) or its customers (which are then securitized through three Canadian customer securitization vehicles and one U.S. customer securitization vehicle). We earn 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 $97 million in 2018 ($104 million in 2017).

Canadian Customer Securitization Vehicles

The customer securitization vehicles we sponsor in Canada provide our customers with access to financing either from BMO or in the asset-backed commercial paper (ABCP) markets. Customers sell their assets either directly into these vehicles, or indirectly by selling an interest in the securitized assets into these vehicles, which then issue ABCP to either investors or BMO in order to fund the purchases. In all cases, the sellers remain responsible for servicing the transferred assets and are first to absorb any losses realized on the assets. None of the sellers are affiliated with BMO.

Our exposure to potential losses arises from our purchase of ABCP issued by the vehicles, any related derivative contracts we have entered into with the vehicles and the liquidity support we provide to the market-funded vehicles. We use our credit adjudication process in deciding whether to enter into these arrangements, just as we do 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 BMO. BMO does not control these entities and therefore they are not consolidated. Further information on the consolidation of customer securitization vehicles is provided in Note 7 on page 165 of the consolidated financial statements. No losses were recorded on any of BMO's exposures to these vehicles in 2018 and 2017.

The market-funded vehicles had a total of $4.1 billion of ABCP outstanding at October 31, 2018 ($3.8 billion in 2017). The ABCP issued by the market-funded vehicles is rated R-1(high) by DBRS and P1 by Moody's. BMO's purchases of ABCP, as distributing agent of ABCP issued by the market-funded vehicles, totalled $12 million at October 31, 2018 ($6 million in 2017).

BMO provided liquidity support facilities for the market-funded vehicles totalling $5.6 billion at October 31, 2018 ($5.0 billion in 2017). This amount comprised part of our commitments outlined in Note 24 on page 201 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 82% (90% in 2017) of the aggregate assets of these vehicles.

U.S. Customer Securitization Vehicle

We sponsor one customer securitization vehicle in the United States that we consolidate under IFRS. Further information on consolidation of customer securitization vehicles is provided in Note 7 on page 165 of the consolidated financial statements. This market-funded customer securitization vehicle provides our customers with access to financing in the U.S. ABCP markets. Our customers remain responsible for servicing the assets involved in the related financing and are first to absorb any losses realized on those assets. None of the sellers are affiliated with BMO.

Our exposure to potential losses arises from our purchase of ABCP issued by the vehicle, any related derivative contracts we have entered into with the vehicle and the liquidity support we provide to the vehicle. We use our credit adjudication process in deciding whether to enter into these arrangements, just as we do when extending credit in the form of a loan. No losses were recorded on any of BMO's exposures to the vehicle in 2018 and 2017.

The vehicle had US$2.9 billion of ABCP outstanding at October 31, 2018 (US$3.1 billion in 2017). The ABCP issued by the vehicle is rated A1 by S&P and P1 by Moody's. In order to comply with U.S. risk retention rules that came into effect in 2017, BMO held US$159 million of the vehicle's ABCP at October 31, 2018 (US$185 million in 2017).

BMO provides a committed liquidity support facility to the vehicle, with the undrawn amount totalling US$5.4 billion at October 31, 2018 (US$5.2 billion in 2017). This amount comprised part of our commitments outlined in Note 24 on page 201 of the consolidated financial statements. The assets of this customer securitization vehicle consist primarily of exposure to diversified pools of U.S. automobile-related receivables and U.S. government-guaranteed Federal Family Education Loan Program loans. These two asset classes represent 74% (78% in 2017) of the aggregate assets of the vehicle.

Caution

This Select Financial Instruments section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements.

Off-Balance Sheet Arrangements

BMO enters into a number of off-balance sheet arrangements in the normal course of operations.

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 our agreement 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 our customers to fail to perform in accordance with the terms of their contracts with us. We use our credit adjudication process in deciding whether to enter into these arrangements, just as we do 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 $163 billion at October 31, 2018 ($147 billion in 2017). 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 our 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.

Further information on these instruments can be found in Note 24 on page 201 of the consolidated financial statements.

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.

Structured Entities (SEs)

We carry out certain business activities through arrangements involving SEs, using them to raise capital, secure customer transactions or obtain sources of liquidity by securitizing certain of our financial assets. Note 6 on page 164 of our consolidated financial statements describes our loan securitization activities carried out through third-party programs. Under IFRS, we consolidate SEs if we control the entity.

Our interests in SEs are discussed in detail on page 76 in the BMO-Sponsored Securitization Vehicles section and in Note 7 on page 165 of the consolidated financial statements, which discusses our interests in both consolidated and unconsolidated SEs. We consolidate our securitization vehicles, U.S. customer securitization vehicles, and certain capital and funding vehicles. We do not consolidate our Canadian customer securitization vehicles, certain capital vehicles, various BMO managed funds and various other structured entities where we hold investments.

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 $25 billion at October 31, 2018 ($24 billion in 2017). 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, please see Note 24 on page 201 of the consolidated financial statements.

Caution

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

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MANAGEMENT'S DISCUSSION AND ANALYSIS

Enterprise-Wide Risk Management

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

Surjit Rajpal
Chief Risk Officer
BMO Financial Group (1)



Enterprise-Wide Risk Management outlines our approach to managing key financial risks and other related risks that we face, as discussed in the following sections:

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Strengths and Value Drivers

- Disciplined approach to risk-taking.
- Comprehensive and consistent risk frameworks.
- Risk appetite and metrics integrated into strategic planning and the ongoing management of businesses and risks.
- Sustained focus on continuous improvement to drive consistency, effectiveness, and efficiency in the management of risk.

Priorities

- Make our processes simple and accelerate our delivery times to match the increasing pace of business.
- Continue to develop technology and analytics that underpin our risk processes, risk assessment and monitoring, and our cyber and anti-money laundering defences.
- Focus on our people and how we work together to enhance our culture.

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 2018 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. See Note 1 on page 148 and Note 5 on page 164 of the consolidated financial statements.

Adjusted results in this Enterprise-Wide Risk Management section are non-GAAP and are discussed in the Non-GAAP Measures section on page 27.

(1) Surjit Rajpal will retire at the end of January 2019. Patrick Cronin, previously Group Head, BMO Capital Markets, was appointed Chief Risk Officer, BMO Financial Group, effective November 1, 2018.

Risks That May Affect Future Results

Top and Emerging Risks That May Affect Future Results

BMO is exposed to a variety of evolving risks that have the potential to affect our business, the results of our operations and our financial condition. The essential tasks in our risk management process are to proactively identify, assess, monitor and manage a broad spectrum of top and emerging risks. Our top and emerging risk identification process consists of several forums for discussion with the Board, senior management and business thought leaders, and combines both bottom-up and top-down approaches in considering risk. Our assessment of top and emerging risks is used to develop action plans and stress tests related to our exposure to certain events.

In 2018, particular attention was given to the following:

Cyber Security, Information Security and Privacy Risk

Information security is integral to BMO's business activities, brand and reputation. In the past year, cyber-attacks and privacy breaches have been significant concerns across all industries, including banking, making this a top risk for BMO. Given our pervasive use of the internet and our reliance on advanced digital technologies, we face common banking information security risks, including the threat of hacking, loss or exposure of customer or employee information, 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. We continue to increase our investments in defensive technology, talent and processes in order to prevent or detect and manage cyber security threats within BMO and at our service providers. These measures include benchmarking and review of best practices across the banking and cyber security industries, external review of incidents related to cyber security, evaluation of the effectiveness of our key controls and development of new controls, as needed, with ongoing investments in both technology and human resources. BMO performs assessments of our third-party service providers to monitor their alignment with standards, and we actively participate in thought leadership forums to learn about emerging threats. We also work with information security and industry groups to bolster our internal resources and technology capabilities in order to improve our ability to remain resilient in a rapidly evolving threat landscape.

Escalating Trade Conflicts

Notwithstanding the recent trade agreement between the United States, Canada and Mexico, support for protectionism and rising anti-globalization sentiment in the United States and other countries may slow global growth. In particular, a protracted and wide-ranging trade conflict between the United States and China could adversely affect global economic growth, and could be especially problematic for commodity-producing countries, such as Canada.

Although it is difficult to predict and mitigate the potential economic and financial consequences of trade-related events, we actively monitor global and North American trends and continually assess our portfolio and business strategies in the context of those trends. We stress test our portfolios, business plans and capital adequacy against severely adverse scenarios arising from shocks, and we establish contingency plans and mitigation strategies to address and offset the consequences of possible adverse political and/or economic developments. In addition, we have the advantage of an integrated North American strategy across diverse industries and geographies.

Our credit exposure by geographic region is provided in Tables 7, 8 and 11 to 13 on pages 132 to 137 and in Note 4 on page 157 of the consolidated financial statements.

Canadian Housing Market

While recent resale market activity suggests that the Canadian housing market is stabilizing, there are a range of economic and regulatory developments that could continue to weight on sales activity and home prices. These developments include rising interest rates and the prospect of future rate hikes by the Bank of Canada, regulatory changes in Ontario and British Columbia that are intended to prevent the Greater Toronto Area (GTA) and Greater Vancouver Area (GVA) housing markets from overheating, as well as stricter mortgage rules introduced by OSFI that took effect at the beginning of 2018. Lower levels of sales activity, particularly in the GTA and GVA, would impact mortgage origination volumes and, if property values were to decline, would reduce the value of collateral backing of our loans. It is not possible to accurately predict the full impact of these recent changes and any potential future changes, but robust economic conditions in these regions, including sustained economic growth, low unemployment and population growth, support our expectation of continued low delinquency rates for real estate loans. Our prudent lending practices, which include the personal adjudication of 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 our Canadian real estate lending portfolio. Further, our stress test analysis suggests that even significant price declines and recessionary economic conditions would result in manageable losses, in part due to insurance coverage and to the significant equity built up in seasoned loans.

Technology Disruption and Competition

The financial services industry continues to undergo rapid change, as technology enables new non-traditional entrants to compete in certain segments of banking, in some cases with less stringent regulatory requirements and oversight. New entrants may leverage new technologies, advanced data and analytical tools, lower costs to serve and/or faster processes in order to challenge traditional banks. These challenges could include new business models in retail payments, consumer and commercial lending and foreign exchange, as well as low-cost investment advisory services. Failure to keep pace with these new technologies and the competition they enable could impact our overall revenues and earnings if customers choose the services of these new market entrants.

While we closely monitor technology disruptors, we also continue to adapt by increasing our investment in technology and innovation in order to keep pace with evolving customer expectations. This includes improving our mobile and internet banking capabilities, building new branch formats, and refining our credit decisioning, analytical and modelling data and tools, as well as bringing new and enhanced customer solutions to market. We further mitigate this risk by offering our customers access to banking services across different channels, focusing on improving customer trust and loyalty, and leveraging current and future partnerships with fintech companies in order to deliver a valued customer experience at a competitive cost and through simplified processes. However, matching the pace of innovation exhibited by new and differently-situated competitors may require us and policy-makers to adapt at a faster pace.

Geopolitical Risk

Despite an easing of tensions between the United States and North Korea, geopolitical risk remains elevated, as a result of strained relations among many countries, including between the United States and Russia, China and Iran, and ongoing disputes across the Middle East and North Africa. Heightened geopolitical risk can give rise to uncertainty in global investment, which may lead to market disruptions and a decrease in growth and trade. Our core banking portfolio has limited direct exposure outside North America; however, our core customers and our international strategy depend on continued growth and trade. To mitigate our exposure to geopolitical risk, we maintain a diversified portfolio which we continually monitor and test, in addition to contingency plans that we establish for possible adverse developments.

Other Factors That May Affect Future Results

General Economic Conditions and Fiscal and Monetary Policies in the Countries in which We Conduct Business

Our earnings are affected by general economic conditions and the fiscal, monetary and other economic policies in place in Canada, the United States and other jurisdictions in which we conduct business. These policies and conditions may have the effect of increasing or reducing competition, profitability and uncertainty in businesses and markets, which may affect our customers and counterparties, potentially contributing to a greater risk of default. Changes in fiscal and monetary policies are difficult to anticipate and predict. Fluctuations in interest rates can have an impact on our earnings, the value of our investments, the credit quality of lending to our customers and our counterparty exposure, and the capital markets that we access. In the current environment of ongoing late-cycle growth and low unemployment, there is a heightened risk that inflation may exceed expectations, prompting faster than expected increases in interest rates. This in turn would increase the risk of a material slowdown in growth or a recession in our Canadian and U.S. markets. Conversely, prolonged low interest rates could lead to lower overall profitability in our retail and commercial businesses.

Changes in the value of the Canadian dollar relative to the U.S. dollar could affect the results of our clients that have significant foreign earnings or input costs in CAD or USD. As BMO reports in Canadian dollars, the CAD/USD foreign exchange movements will impact our U.S. loan risk-weighted assets, and thus our capital ratio. The value of the Canadian dollar relative to USD will also affect the contribution of our U.S. operations to Canadian dollar profitability.

Hedging positions may be taken to manage interest rate exposures and partially offset the effects of CAD/USD exchange rate fluctuations on our financial results. Refer to the Foreign Exchange section on page 34, the Enterprise-Wide Capital Management section on page 69, and the Market Risk section on page 95 for a more complete discussion of our foreign exchange and interest rate risk exposures.

Regulatory Requirements

The financial services industry is highly regulated, and we have experienced changes and increased 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 our returns and affect our growth. These reforms could also affect the cost and availability of funding and the extent of our market-making activities. Regulatory reforms may also impact fees and other revenues for certain of our operating groups. In addition, differences in laws and regulations enacted by various national regulatory authorities may provide advantages to our international competitors that could affect our ability to compete and result in loss of market share. We monitor such developments, and other potential changes, such as reforms of the U.S. financial regulatory system or the potential impacts of a United Kingdom withdrawal from the European Union, so that BMO is well-positioned to respond and implement any necessary changes. We are currently working to restructure our European businesses in order to continue to service our European clients and counterparties while remaining compliant with new regulatory requirements, following the United Kingdom's announced intention to leave the European Union, effective March 29, 2019 (Brexit). In addition to changes in our client facing elements, we are addressing aspects of Brexit that impact our staff, suppliers and access to market infrastructure.

Failure to comply with applicable legal and regulatory requirements could result in litigation, 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. Refer to the Legal and Regulatory Risk and Enterprise-Wide Capital Management sections on pages 112 and 69, respectively, for a more complete discussion of our exposure to legal and regulatory risk.

Tax Legislation and Interpretations

Legislative changes and changes in tax policy, including their interpretation by taxing authorities and the courts, may impact our earnings. Tax laws, as well as interpretations of tax laws and policy by taxing authorities, may change as a result of efforts by the G20 and the Organisation for Economic Co-operation and Development to broaden the tax base globally and improve tax-related reporting. Refer to the Critical Accounting Estimates section on page 119 for further discussion of income taxes and deferred tax assets.

Acquisitions

We conduct thorough due diligence before completing business or portfolio acquisitions. However, it is possible that we could make an acquisition that subsequently does 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 we may not be able 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, while higher than anticipated integration costs and failure to realize expected cost savings after an acquisition could also adversely affect our earnings. Integration costs may increase as a result of higher regulatory costs related to an acquisition, 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 on integrating key systems and processes without disruption, and there can be no assurance that we will always succeed in doing so.

Environmental Events
We face risks arising from environmental events, such as drought, floods, wildfires, earthquakes, and hurricanes and other storms. These events could potentially disrupt our operations, impact our customers and counterparties, and result in reduced earnings and higher losses. Factors contributing to increased environmental risks include the impacts of climate change and continued intensification of development in areas of greater environmental sensitivity. Our business continuity management provides us with the capability to restore, maintain and manage critical operations and processes in the event of a business disruption. In addition, we also support the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), and we are considering the integration of climate-related scenario analysis into our risk management and strategic processes. This includes evaluation of credit risk associated with assumptions around the global transition to a low carbon economy identified by the TCFD. The goal is to enhance our understanding of the evolving impact of risks associated with environmental events and climate change, together with possible mitigation strategies. Refer to the Environmental and Social Risk section on page 115 for a discussion of our support of the TCFD.

Critical Accounting Estimates and Accounting Standards
We prepare our consolidated financial statements in accordance with IFRS. Changes that the International Accounting Standards Board makes from time to time to these standards can be difficult to anticipate and may materially affect how we record and report our financial results. Significant accounting policies and future changes in accounting policies are discussed on page 121, as well as in Note 1 on page 148 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, that new information may become available or that our models may prove to be imprecise.

Our 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 on page 117.

Benchmark Interest Rate Reform
The London Interbank Offered Rate (LIBOR), Euro Interbank Offered Rate, Canadian Dollar Offered Rate and other rates and indices deemed to be benchmarks have been the subject of recent national and international regulatory guidance and proposals for reform. For example, in July 2017, the Financial Conduct Authority in the United Kingdom announced that it will no longer compel banks to participate in LIBOR after 2021.

Transition efforts in connection with these reforms are complex, with significant risks and challenges. Such reforms, and any future initiatives to regulate, reform or change the manner of administration of benchmarks, could result in adverse consequences for the return on, value and market for securities and other instruments with returns that are linked to any such benchmark, including those issued by BMO or its subsidiaries. Discontinuance of, or changes to, benchmark rates as a result of these developments, along with uncertainty about the timing and manner of implementation of such changes or discontinuances, may require adjustments to agreements in which current benchmark rates are referenced by us, our clients and other market participants, as well as to our systems and processes.

Caution
The Risks That May Affect Future Results section and the remainder of this Enterprise-Wide Risk Management section contain forward-looking statements. Please see the Caution Regarding Forward Looking Statements.

Other factors beyond our control that may affect our future results are noted in the Caution Regarding Forward-Looking Statements on page 29. We caution that the preceding discussion of risks that may affect future results is not exhaustive.

Risk Management Overview

At BMO, we believe that risk management is every employee's responsibility. We are guided by five key perspectives on risk that drive our approach to managing risk across the enterprise.

Our Approach to Risk Management

- Understand and manage
- Diversify. Limit tail risk
- Maintain strong capital and liquidity
- Optimize risk return
- Protect our reputation

Our integrated and disciplined approach to risk management is fundamental to the success of our business. All elements of our risk management framework function together in support of prudent and measured risk-taking, while striking an appropriate balance between risk and return. Our Enterprise Risk and Portfolio Management (ERPM) group develops our risk appetite, risk policies and limits, 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 our business strategy.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Framework and Risks

Culture and Conduct Framework

Our ethical culture influences how we conduct ourselves, enabling us to deliver positive outcomes for our customers and contribute to the orderly operation of financial markets. Misconduct is behaviour that falls short of legal, professional, internal conduct and ethical standards. Our management approach to culture and conduct is centred on the key themes of our people, customers and markets. We manage and mitigate the potential for misconduct through various risk management processes and procedures using their information and insights to develop an enterprise perspective.

Enterprise-Wide Risk Management Framework

Our enterprise-wide risk management framework assists the bank in managing its risk-taking activities and ensuring they remain within our risk appetite.



These risk framework elements are discussed in more detail in the sections that follow.

Risk Governance

Our enterprise-wide risk management framework is founded on a governance approach that includes a robust committee structure and a comprehensive set of corporate policies and limits, each of which is approved by the Board of Directors or its committees, as well as specific corporate standards and operating procedures. Our corporate policies outline frameworks and objectives for every significant risk type, so that risks to which the enterprise is exposed are appropriately identified, measured, managed, monitored, mitigated and reported in accordance with our risk appetite. Specific policies govern our key risks, such as credit and counterparty, market, liquidity and funding, model and operational risks. This enterprise-wide risk management framework is governed at all levels through a hierarchy of committees and individual responsibilities, as outlined in the diagram below.

Our risk management framework is reviewed on a regular basis by the Risk Review Committee of the Board of Directors in order to provide oversight and guide our risk-taking activities. In each of our operating groups, management, as the first line of defence, is responsible for governance activities and controls, and the implementation and operation of risk management processes and procedures that provide effective risk management. Enterprise Risk and Portfolio Management, as the primary second line of defence, oversees the implementation and operation of our risk management processes and procedures with a view to effectively aligning outcomes with our overall risk management framework. Individual governance committees establish and monitor further risk limits, consistent with and in furtherance of Board-approved limits.

The diagram below outlines our risk governance framework, including both the direct and administrative reporting lines.



In addition to the enterprise-level risk governance framework, appropriate risk governance frameworks, supported by our three lines of defence, are in place in all of our material businesses and entities.

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, the identification and management of risk, capital management, 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 overseeing the identification and management of BMO's risks, including our risk culture, adherence by operating groups to risk management corporate policies and procedures, compliance with risk-related regulatory requirements and the evaluation of the Chief Risk Officer (CRO), including input into succession planning for the CRO. Our risk management framework is reviewed on a regular basis by the RRC in order to provide guidance for the governance of our risk-taking activities.

Audit and Conduct Review Committee of the Board of Directors assists the Board in fulfilling its oversight responsibilities for the integrity of BMO's financial reporting; the effectiveness of BMO's internal controls; the independent auditors' qualifications, independence and performance; BMO's compliance with legal and regulatory requirements; 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 rest of Enterprise Risk and Portfolio Management.

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 a risk management framework 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 that arise in executing 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 our operating groups, the CEO and the Chief Financial Officer (CFO).

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 processes whereby the risks undertaken across the enterprise are identified, measured, managed, monitored, mitigated and reported in accordance with policy guidelines, and are held within limits and risk tolerances.

Enterprise Risk and Portfolio Management (ERPM), as the risk management second line of defence, provides comprehensive risk management oversight. It promotes consistency in risk management practices and standards across the enterprise. ERPM supports a disciplined approach to risk-taking in fulfilling its responsibilities for independent transactional approval and portfolio management, policy formulation, risk reporting, stress testing, modelling and risk education. This approach seeks to meet enterprise objectives and to verify that any accepted risks are consistent with BMO's risk appetite.

Operating Groups are responsible for effectively managing risk by identifying, measuring, managing, monitoring, mitigating and reporting risk within their respective lines of business. They exercise business judgment and seek to ensure that effective policies, processes and internal controls are in place and that significant risk issues are reviewed with ERPM. Individual governance committees and ERPM establish and monitor further risk limits that are consistent with and subordinate to the Board-approved limits.

Three-Lines-of-Defence Operating Model

Our risk management framework is anchored in the three-lines-of-defence approach to managing risk, which is fundamental to our operating model, as described below:

- Our operating groups are the bank's **first line of defence**. They are accountable for the risks arising from their businesses, activities and exposures. They are expected to pursue business opportunities within our established risk appetite and to identify, measure, manage, monitor, mitigate and report all risks in or arising from their businesses, activities and exposures. The first line discharges its responsibilities by using risk management and reporting methodologies and processes developed by the business and by the ERPM group and other Corporate Support areas, and may call on corporate functions or other service providers to help discharge these responsibilities. Businesses are responsible for establishing appropriate internal controls in accordance with our risk management framework and for monitoring the effectiveness of such controls. Such processes and controls help ensure businesses act within their delegated risk-taking authority and risk limits as set out in corporate policies and our Risk Appetite Framework.
- The **second line of defence** is comprised of the ERPM group and, in certain targeted areas, Corporate Support areas. 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 and monitor 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 our risk management and governance processes.

Risk Culture

At BMO, we believe that risk management is the responsibility of every employee within the organization. This key tenet shapes and influences our corporate culture and is evident in the actions and behaviours of our employees and leaders as they identify, interpret and discuss risks, and make decisions that seek to balance risks and opportunities and optimize risk-adjusted returns. Each member of our senior management plays a critical role in fostering a strong risk culture among all employees by effectively communicating this responsibility, by the example of their own actions and by establishing and enforcing compensation plans and other incentives that are designed to encourage and reward appropriate behaviours. Our risk culture is deeply embedded within our policies, business processes, risk management framework, risk appetite, limits and tolerances, capital management and compensation practices, and is evident in every aspect of the way we operate across the enterprise. We actively solicit feedback on the effectiveness of our risk culture, including through standardized and anonymous employee surveys.

Our risk culture is grounded in a "Being BMO" approach to risk management that encourages openness, constructive challenge and personal accountability. "Being BMO" values include integrity and a responsibility to make tomorrow better, and "Being BMO" behaviours include balancing risk and opportunity, taking ownership, following through on commitments, speaking up and being candid. Timely and transparent sharing of information is also essential in engaging stakeholders in key decisions and strategy discussions, thereby bringing added rigour and discipline to our 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 our organization, so that our 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. Our governance and leadership forums, committee structures, learning curriculums and proactive communication also reinforce and support our risk culture.

Certain elements of our risk culture are embedded across the enterprise, and these include:

- **Risk appetite** – promotes a clear understanding of the most prevalent risks that our businesses face, shapes and informs business strategies to align them with our risk appetite, and provides a control and early warning framework through our key risk metrics, thereby leading to sound business decision-making and execution, supported by a strong monitoring framework.
- **Communication and escalation channels** – encourage engagement and sharing of information between ERPM and the operating groups, leading to greater transparency and open and effective communication. 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.
- **Compensation philosophy** – pay is aligned with prudent risk-taking, so that compensation and other incentives reward the appropriate use of capital and respect for the rules and principles of our enterprise-wide risk management framework and do not encourage excessive risk-taking. Our risk managers have input into the design of incentive programs that may have an effect on risk-taking, and provide input into the performance assessment of employees who take material risks or who are responsible for losses or events that give rise to an unexpected risk of loss.
- **Training and education** – our programs 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 awareness they need to fulfill their responsibilities for independent oversight, regardless of their role in the organization. Our education strategy has been developed in partnership with BMO's Institute for Learning, our risk management professionals, external risk experts and teaching professionals.
- **Rotation programs** – two-way rotation allows employees to transfer between ERPM and the operating groups, effectively embedding our strong risk culture across the enterprise and ensuring that many of our risk management professionals have a practical grounding in our business activities.

Risk Appetite Framework

Our Risk Appetite Framework consists of our Risk Appetite Statement and key risk metrics, and is supported by corporate policies, standards and guidelines, including the related limits, concentration levels and controls defined therein. Our risk appetite defines the amount of risk that BMO is willing to assume given our guiding principles and capital capacity, thereby supporting sound business initiatives, appropriate returns and targeted growth. Our risk appetite is integrated into our strategic and capital planning processes and performance management system. On an annual basis, senior management recommends our Risk Appetite Statement and key risk metrics to the RMC and the Board of Directors for approval. Our Risk Appetite Statement is articulated and applied consistently across the enterprise, with key businesses and entities developing their own respective risk appetite statements within this framework. Among other things, our approach to risk management through our Risk Appetite Statement requires BMO to:

Understand and Manage Risk

- Take only those risks that are transparent, understood, measured, managed and monitored
- Incorporate risk measures and risk-adjusted returns into our performance management system, including an assessment of performance against our risk appetite and return objectives in compensation decisions
- Protect the assets of BMO and BMO's clients by setting and maintaining prudent risk limits and strong operational risk controls

Protect our Reputation

- Be guided in everything we do by principles of honesty, integrity and respect, as well as high ethical standards
- Maintain effective policies, procedures, guidelines, standards and internal controls, and provide training and management that will guide the business practices and risk-taking activities of all employees so that they are able to optimize risk-adjusted returns while also adhering to all legal and regulatory obligations, thus protecting BMO's reputation

Diversify. Limit Tail Risk

- Use economic capital, regulatory capital and stress testing methodologies to understand our risks and guide our risk-return assessments
- Limit exposure to low-frequency, high-severity events that could jeopardize BMO's credit ratings, capital or liquidity position, or reputation

Maintain Strong Capital and Liquidity

- Maintain strong capital, liquidity and funding positions that meet or exceed regulatory requirements and the expectations of the market
- Maintain a robust recovery framework that enables an effective and efficient response in an extreme crisis
- Maintain an investment grade credit rating at a level that allows competitive access to funding

Optimize Risk Return

- Subject new products and initiatives to rigorous review and approval, and assess whether new acquisitions provide a good strategic, financial and cultural fit, and also have a high likelihood of creating value for our shareholders
- Set capital limits based on our risk appetite and strategy, and require our lines of business to optimize risk-adjusted returns within those limits

Risk Limits

Our risk limits reflect our Risk Appetite Framework, and inform our business strategies and decisions. In particular, we consider risk diversification, exposure to loss and risk-adjusted returns when setting limits. These limits are reviewed and approved by the Board of Directors and/or management committees and 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 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 – limits on minimum levels of liquid assets 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 – limits on specific operational risks and key risk metrics for measuring operational risks
- Model Risk – limits on model approval and modification exceptions, material deficiency extensions and scheduled review extensions

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 areas, and to the CRO (second line of defence). 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 documentation, communication and monitoring of those specific delegated authorities, are set out in corporate policies and standards.

Risk Identification, Review and Approval

Risk identification is an essential step in recognizing the key inherent risks that we face, understanding the potential for loss and then acting to mitigate this potential. A Risk Taxonomy is maintained to comprehensively identify and manage key risks, supporting the implementation of the bank's Risk Appetite Framework and assisting in identifying the primary risk categories for which economic capital is reported and stress capital consumption is estimated. Our enterprise-wide and targeted (industry/portfolio-specific or ad hoc) stress testing processes have been developed to assist in identifying and evaluating these risks. Risk review and approval processes are established based on the nature, size and complexity of the risks involved. Generally, this involves 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, tax or reputation risk are reviewed by the Reputation Risk Management Committee or the Trading Products Risk Committee, as appropriate, and are also reviewed through our operational risk management process if they involve structural or operational complexity that may give rise to operational risk.
- **Investment Initiatives** – documentation of risk assessments is formalized through our investment spending approval process, which is reviewed and approved by Corporate Support areas based on the initiative's investment spend and inherent risk.
- **New Products and Services** – policies and procedures for the approval of new or modified products and services offered to our 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 Support areas, as well as by other senior management committees, including the Operational Risk Committee and Reputation Risk Management Committee, as appropriate.

Risk Monitoring

Enterprise-level risk transparency and monitoring and associated reporting are critical components of our risk management framework and corporate culture that allow senior management, committees and the Board of Directors to exercise their business management, risk management and oversight responsibilities at the enterprise, operating group and key legal entity levels. Internal reporting includes a synthesis of the key risks that the enterprise currently faces, along with associated metrics. Our reporting highlights our most significant risks, including assessments of our top and emerging risks, to provide the Board of Directors, its committees and any other appropriate executive and senior management committees with timely, actionable and forward-looking risk reporting. This reporting includes supporting metrics and materials to facilitate assessment of these risks relative to our risk appetite and the relevant limits established within our Risk Appetite Framework.

On a regular basis, reporting on risk issues is also provided to stakeholders, including regulators, external rating agencies and our shareholders, as well as to others in the investment community.

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 we take on in pursuit of our financial objectives, and they enable us to evaluate 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, if appropriate, are recalibrated or revalidated. Our risk-based capital models provide a forward-looking estimate of the difference between our maximum potential loss in economic (or market) value and our expected loss, measured over a specified time interval and using a defined confidence level.

Stress Testing

Stress testing is a key element of our risk and capital management frameworks. It is integrated into our enterprise and group risk appetite statements and embedded in our management processes. To evaluate our risks, we regularly test a range of scenarios, which vary in frequency, severity and complexity, in our portfolios and businesses and 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 is comprised of 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 Comprehensive Capital Analysis and Review (CCAR) and the mid-year Dodd-Frank Act Stress Test (DFAST) – which are U.S. regulatory requirements for our subsidiary BMO Financial Corp. (BFC) – is similarly governed at the BFC level.

Quantitative models and qualitative approaches are utilized to assess the impact of changes in the macroeconomic environment on our income statement and balance sheet and the resilience of our 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 our ICAAP and target-setting through analysis of the potential effects of low-frequency, high-severity events on our balance sheet, earnings, and liquidity and capital positions. Scenario selection is a multi-step process that considers the enterprise's material and idiosyncratic risks and the potential impact of new or emerging risks on our risk profile, as well as the macroeconomic environment. Scenarios may be defined by senior management or regulators. The economic impacts are determined by our Economics group. The Economics group does this by translating 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 our stress loss models and the qualitative assessments that determine our estimated stress impacts. The scenarios are used by our operating, risk and finance groups to assess a broad range of financial impacts that could arise under a specific stress and 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

Our 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 risk management and by 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 to assess business strategies.

Risk Types

Our enterprise-wide risk management framework provides for the robust management of individual risk types that could have a material impact on our business. These risk types are all managed with a similar focus on the effective application of our risk management processes and procedures. These risk types are shown below, with risk types that lend themselves to management by way of quantitative analysis presented above those risks primarily managed through more qualitative techniques. Details on each of these risk types are provided starting on page 87.



We leverage our enterprise-wide risk management framework, including our policy framework and corresponding risk limits or risk tolerance guidance, to manage each of these risk types within our risk appetite through our first-line and second-line-of-defence business and risk management processes. As discussed below, management oversight of risk types is provided by management and Board committees, supported by a robust control framework.

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 and counterparty risk underlies every lending activity that BMO enters 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 is the most significant measurable risk BMO faces. Proper management of credit risk is essential to our success, since failure to effectively manage credit risk could have an immediate and significant impact on our earnings, financial condition and reputation.

Credit and Counterparty Risk Governance

The objective of our 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 RRC has oversight of the management of all material risks that we face, including the credit risk management framework. BMO's credit risk management framework incorporates governing principles that are defined in a series of corporate policies and standards and are applied to more specific operating procedures. These are reviewed on a regular basis and modified when necessary to keep them current and consistent with BMO's risk appetite. The structure, limits (both notional and capital-based), collateral requirements, monitoring, reporting and ongoing management of our 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 risks. With limited exceptions, credit officers in ERPM approve all 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 skilled and experienced individuals in the first and second lines of defence are subject to a rigorous lending qualification process and operate in a disciplined environment with clear delegation of decision-making authority, including individually delegated lending limits, which are reviewed annually. The Board annually reviews our Credit Risk Management Policy and 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 comprehensive 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 within the enterprise risk appetite, as well as compliance with all applicable governing policies, standards and procedures.

All credit risk exposures are subject to regular monitoring. Performing accounts are reviewed on a regular basis, with most commercial and corporate accounts reviewed no less frequently than annually. 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, when appropriate. In addition, regular portfolio and sector reviews are carried out, including stress testing and scenario analysis based on current, emerging or prospective risks. 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 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 facilitates the RRC and senior management committees to effect any measures they may decide to take.

Counterparty credit risk (CCR) creates a bilateral risk of loss because the market value of a transaction can be positive or negative for either counterparty. CCR exposures are also subject to the credit oversight, limit framework and approval processes outlined above. However, given the nature of the risk, CCR exposures are also monitored through the market risk framework and many are collateralized. In order to reduce our exposure to CCR, we often use a regulated central counterparty (CCP) that intermediates between counterparties for contracts in financial markets. CCPs aim to mitigate risk through the use of margin requirements (both initial and variation) and a default management process, including a default fund and other resources. Our exposures to CCPs are subject to the same credit risk governance, monitoring and rating framework we apply to all other corporate accounts.

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

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, real estate, or personal assets pledged in support of guarantees. For trading counterparties, we may enter into legally enforceable netting agreements for on-balance sheet credit exposures, when possible. In our securities financing transaction business (including repurchase agreements and securities lending), we take eligible financial collateral that we control and can readily liquidate.

Collateral for our derivatives trading counterparty exposures is primarily comprised of cash and high-quality liquid securities (U.S. and Canadian treasury securities, U.S. agency securities, Canadian provincial government securities and certain high-quality European sovereign 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 our counterparties for over-the-counter (OTC) derivatives that are not centrally cleared. Credit Support Annexes entitle a party to demand collateral (or other credit support) when its OTC derivatives exposure to another party exceeds an agreed threshold. Collateral transferred can include an independent initial margin and/or variation margin. Credit Support Annexes contain, among other things, 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 are implementing new regulations that require certain counterparties with significant OTC derivatives exposures to post or collect prescribed types and amounts of collateral for uncleared OTC derivatives transactions. For additional discussion, see Legal and Regulatory Risk – Derivatives Reform on page 114.

To document our contractual securities financing relationships with our counterparties, we utilize master repurchase agreements for repurchase transactions and for securities lending transactions, we utilize master securities lending agreements.

On a periodic basis, collateral is subject to revaluation specific to 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.

When a commercial loan is determined to be impaired, a thorough review of collateral is conducted and updated external appraisals or valuations may be obtained. Quarterly reviews are then completed and collateral positions are reviewed and updated as deemed appropriate.

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 provided by our appraisal management company to assist with determining either the current value of a property or the necessity of a full property appraisal.

For insured mortgages in Canada with a high LTV ratio (greater than 80%), we determine the value of the property through the default insurer.

Portfolio Management and Concentrations of Credit and Counterparty Risk

BMO's 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 consumers and small to medium-sized businesses. From an industry viewpoint, our most significant exposure at October 31, 2018 was to individual consumers, comprising $238,400 million ($223,962 million in 2017).

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. There is specific wrong-way risk, which 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, which 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 mitigant. Our procedures require specific wrong-way risk be identified in transactions and accounted for in the assessment of risk. Stress testing of replacement risk is conducted monthly and can be used to identify existing or emerging concentrations of general wrong-way risk in our portfolios.

Credit and Counterparty Risk Measurement

We quantify 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 our 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.

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

For inclusion in regulatory capital calculations, OSFI permits three approaches for the measurement of credit risk: Standardized, Foundation Internal Ratings Based and Advanced Internal Ratings Based (AIRB). We primarily use the AIRB approach to determine credit RWA in our portfolios, including portfolios of our subsidiary BMO Financial Corp. Exposures under AIRB capital treatment account for 94% of total EAD of Wholesale and Retail portfolios, and the remaining is under the Standardized Approach. Waivers and exemptions to existing AIRB models are subject to OSFI's approval. The risk-weighted assets determined through this and other advanced approaches are currently subject to a Basel II standardized floor, as well as regulatory floor factor reductions. The Basel III Standardized Approach is currently being used for regulatory capital calculations related to the acquired Marshall & Ilsley Corporation and BMO Transportation Finance portfolios, and for certain other exposures that are considered to be immaterial. We continue to transition all material exposures in these portfolios to the AIRB Approach. For securitization exposures, we apply the Basel Hierarchy of Approaches, including the Supervisory Formula Approach (SFA) and External Credit Assessment (ECA), as well as an internal credit assessment under our standard credit risk management practices.

Our regulatory capital and economic capital frameworks both use EAD to assess credit and counterparty risk. Exposures are classified as follows:

- Drawn loans 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 our proprietary accounts that attract credit risk in addition to market risk. EAD for OTC derivatives is equal to the positive replacement cost, after considering netting, plus any potential credit exposure amount.
- 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, LGD or a different Basel asset class as a result of applying credit risk mitigation and considering credit risk mitigants, including collateral and netting.

Total non-trading exposures at default by industry sector, as at October 31, 2018 and 2017, based on the Basel III classifications are as follows:

(Canadian $ in millions)	Drawn		Commitments (undrawn)		OTC derivatives		Other off-balance sheet items		Repo-style transactions		Total (1)	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017
Financial institutions	**102,552**	89,681	**21,741**	19,457	**1,649**	1,474	**5,016**	4,137	**177,094**	139,187	**308,052**	253,936
Governments	**44,552**	36,829	**2,118**	2,243	**1**	–	**667**	682	**8,401**	10,626	**55,739**	50,380
Manufacturing	**22,580**	19,737	**13,490**	12,258	**10**	9	**1,396**	1,360	**–**	–	**37,476**	33,364
Real estate	**31,534**	26,991	**8,170**	6,472	**1**	–	**820**	829	**–**	–	**40,525**	34,292
Retail trade	**19,961**	18,242	**3,617**	3,410	**–**	–	**559**	523	**–**	–	**24,137**	22,175
Service industries	**39,067**	34,723	**12,666**	11,207	**1**	1	**2,389**	2,831	**–**	–	**54,123**	48,762
Wholesale trade	**14,659**	11,440	**4,531**	4,675	**2**	1	**436**	481	**–**	–	**19,628**	16,597
Oil and gas	**9,131**	8,185	**10,410**	7,706	**–**	–	**1,804**	1,496	**–**	–	**21,345**	17,387
Individual	**190,688**	180,612	**47,586**	43,223	**–**	–	**126**	127	**–**	–	**238,400**	223,962
Others (2)	**35,617**	35,523	**18,197**	15,709	**88**	3	**6,474**	6,617	**–**	–	**60,376**	57,852
Total exposure at default	**510,341**	461,963	**142,526**	126,360	**1,752**	1,488	**19,687**	19,083	**185,495**	149,813	**859,801**	758,707

(1) Credit exposure excluding equity, securitization, trading book 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%.

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

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. Please refer to pages 111 to 112 for a discussion of our model risk mitigation processes.

Retail (Consumer and Small Business)

The retail portfolios are comprised of 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. BMO has 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 risk areas 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 data recorded over a period of more than seven years, and adjustments are made at the parameter level to account for any uncertainty. The retail parameters are tested and calibrated on an annual basis, if required, to incorporate additional data points in the parameter estimation process, ensuring that the most recent experience is incorporated. Our largest retail portfolios are the Canadian mortgage, Canadian home equity line of credit and Canadian retail credit card portfolio.

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

PD is the probability that an entity and/or credit facility will default within the next 12 months and is expressed as a percentage between 0% and 100%. The rating philosophy aligns each exposure to a homogenous PD pool with a current view of its default risk over the next 12 months and incorporates a future outlook beyond the 12-month period by calibrating the PD estimates to reflect long-run historical experience.

LGD is the amount of economic loss that BMO anticipates it may incur on a credit facility or pool as a result of default. BMO uses the economic LGD calculation, which discounts future recovery payments to the time of default, including collection costs. For capital purposes, the estimates are calibrated to reflect a downturn scenario.

EAD is the portion of a credit facility that is anticipated to be outstanding upon the occurrence of default. It is defined as the balance at default divided by the credit limit at the beginning of the year. The credit conversion factor (CCF), the undrawn factor, is the ratio of the additional amount drawn during the period from the beginning of the year to default over the undrawn amount 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, EAD and CCF estimates are calibrated to reflect a downturn scenario.

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, we utilize an enterprise-wide risk rating framework that is applied to all our sovereign, bank, corporate and commercial counterparties. One key element of this framework is the assignment of appropriate borrower or counterparty risk ratings (BRRs). BMO has 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 ranking ordering 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 when 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 over a one-year time horizon. As a borrower migrates between risk ratings, the PD associated with the borrower changes.

BMO employs 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. PD estimates are updated annually and recalibrated, as required, to ensure alignment with long-run default rates over the economic cycle, supplemented by external benchmarking, as necessary.

An LGD estimate is a measure of the potential economic loss that could be incurred for a facility if the borrower were to default during a period of economic distress. The LGD model captures the priority of claim, collateral, product and sector characteristics of the credit facility extended to a borrower, and generates a facility-level LGD estimate.

An EAD estimate is the portion of a credit facility that is anticipated to be outstanding upon the occurrence of default. The model captures the facility type, sector and facility utilization rate characteristics of the credit facility extended to a borrower and generates a facility-level EAD estimate. The EAD credit conversion factor is calculated for eligible facilities by comparing usage amounts at time of default and one year prior to default. The authorization and drawn amounts, one year prior to default, are used to split each facility into its respective drawn and undrawn portions, where applicable.

LGD and EAD models have been developed for each asset class using internal data from a period of more than seven years that includes at least one full economic cycle, and results are benchmarked using external data, when necessary. For capital purposes, the models are calibrated to reflect a downturn scenario. The 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 corresponds in a logical manner to 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-3	Aaa to Aa3	AAA to AA-
I-4 to I-5	A1 to Baa1	A+ to BBB+
I-6 to I-7	Baa2 to Baa3	BBB to BBB-
S-1 to S-2	Ba1 to Ba2	BB+ to BB
S-3 to S-4	Ba3 to B1	BB- to B+
Watchlist		
P-1 to P-3	B2 to Ca	B to CC
Default / Impaired		
T1, D-1 to D-4	C	C to D

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Credit Quality Information

Portfolio Review

Total enterprise-wide credit risk exposures were $860 billion at October 31, 2018, comprised of $445 billion in Canada, $347 billion in the United States and $68 billion in other jurisdictions. This represents an increase of $101 billion or 13% from the prior year.

BMO's loan book continues to be well-diversified by industry and geographic region. Gross loans and acceptances increased $27 billion or 7% from the prior year to $404 billion at October 31, 2018. The geographic mix of our Canadian and U.S. portfolios represented 65.1% and 32.5% of total loans, respectively, compared with 66.3% and 30.6% in 2017. Our loan portfolio is well-diversified, with the consumer loan portfolio representing 47.3% of the total portfolio, a decrease from 49.2% in 2017, and business and government loans representing 52.7% of the total portfolio, up from 50.8% in 2017.



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	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017
Canada								
Consumer	**54,375**	55,568	**109,991**	106,023	**4,199**	4,349	**168,565**	165,940
Commercial and corporate (excluding real estate)	**57,530**	49,693	**16,438**	14,699	**1,750**	1,367	**75,718**	65,759
Commercial real estate	**7,397**	6,226	**10,143**	8,997	**1,275**	1,453	**18,815**	16,676
United States	**33,688**	33,382	**71,928**	61,394	**25,955**	20,947	**131,571**	115,723
Other countries	**8,628**	11,184	**624**	920	**294**	684	**9,546**	12,788
Total	**161,618**	156,053	**209,124**	192,033	**33,473**	28,800	**404,215**	376,886

The following table presents net loans and acceptances by interest rate sensitivity:

(Canadian $ in millions)	**2018**	2017
Fixed rate	**193,661**	190,254
Floating rate	**190,330**	168,253
Non-interest sensitive (1)	**18,585**	16,546
Total	**402,576**	375,053

(1) Non-interest sensitive is comprised of customers' liability under acceptances.

Further details of our loan book, including detailed breakdowns by industry and geographic region, can be found in Tables 7 to 15 of the Supplemental Information section on pages 132 to 138. Details of our credit exposures are presented in Note 4 on page 157 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. BMO regularly performs stress testing on its 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 considered to be manageable.

Provision for Credit Losses (PCL)

Total PCL of $662 million in 2018 decreased 11% from $746 million in 2017. Detailed discussions of our PCL, including historical trends in PCL, are provided on page 40, in Table 15 on page 138 and in Note 4 on page 157 of the consolidated financial statements.

Gross Impaired Loans (GIL)

Total GIL of $1,936 million in 2018 decreased 13% from $2,220 million in 2017, with the largest decrease in impaired loans in service industries and the oil and gas sector. GIL as a percentage of gross loans and acceptances also decreased to 0.48%, compared with 0.59% in 2017.

Factors contributing to the change in GIL are outlined in the table below. Loans classified as impaired during the year decreased to $2,078 million from $2,193 million in 2017, driven by lower impaired loan formations in the transportation and services industries. On a geographic basis, Canada accounted for the majority of impaired loan formations, comprising 55.7% of total formations in 2018, compared with 44.6% in 2017. Detailed breakdowns of impaired loans by geographic region and industry can be found in Table 11 of the Supplemental Information section on page 134 and in Note 4 on page 157 of the consolidated financial statements.

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

Changes in Gross Impaired Loans and Acceptances (1)

(Canadian $ in millions, except as noted)

For the year ended October 31	**2018**	2017	2016
GIL, beginning of year	**2,220**	2,383	2,004
Classified as impaired during the year	**2,078**	2,193	2,512
Transferred to not impaired during the year	**(708)**	(607)	(577)
Net repayments	**(1,051)**	(1,017)	(875)
Amounts written off	**(618)**	(618)	(694)
Recoveries of loans and advances previously written off	**–**	–	–
Disposals of loans	**(11)**	(46)	(34)
Foreign exchange and other movements	**26**	(68)	47
GIL, end of year	**1,936**	2,220	2,383
GIL as a % of gross loans and acceptances	**0.48**	0.59	0.64

(1) GIL excludes purchased credit impaired loans.

Allowance for Credit Losses

BMO employs 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.

BMO maintains an allowance for credit losses (ACL) at a level that we consider appropriate to absorb credit-related losses on our loans and other credit instruments. As at October 31, 2018, our ACL was $1,870 million, a decrease of $126 million from the prior year. The decrease was due to a $70 million reduction in ACL related to the adoption of IFRS 9, a $38 million net recovery in the allowance for performing loans and the impact of the weaker U.S. dollar. The ACL is comprised of an allowance for impaired loans of $397 million and an allowance for performing loans of $1,473 million, which also includes an allowance for impaired loans of $27 million and an allowance for performing loans of $204 million related to undrawn commitments and letters of credit that are considered other credit instruments and recorded in other liabilities. The allowance for impaired loans decreased $23 million from $420 million in the prior year. Our coverage ratio remains adequate, with ACL on impaired loans as a percentage of GIL of 19.1%, compared with 17.7% in 2017.

Further details on the continuity in ACL by each product type can be found in Tables 12 and 13 of the Supplemental Information section on page 136 and 137 and in Note 4 on page 157 of the consolidated financial statements.

European Exposures

Some European countries have experienced credit concerns in recent years, and exposure to this region has been a particular focus. 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, 2018, 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 (inclusive of 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 table on page 94.

European Exposure by Country and Counterparty (1)

(Canadian $ in millions)

As at October 31, 2018	Funded lending (2)	Securities (3)(4)				Repo-style transactions and derivatives (5)(6)				Total net
Country	Total	Bank	Corporate	Sovereign	Total	Bank	Corporate	Sovereign	Total	exposure
GIIPS										
Greece	–	–	–	–	–	–	–	–	–	–
Ireland (7)	5	–	44	–	44	–	138	–	138	187
Italy	15	–	–	–	–	1	–	–	1	16
Portugal	–	–	–	–	–	–	–	–	–	–
Spain	301	–	–	–	–	26	–	–	26	327
Total – GIIPS	**321**	**–**	**44**	**–**	**44**	**27**	**138**	**–**	**165**	**530**
Eurozone (excluding GIIPS)										
France	136	6	1	165	172	33	24	11	68	376
Germany	461	229	41	4,755	5,025	6	5	–	11	5,497
Netherlands	298	503	3	–	506	18	50	–	68	872
Other (8)	186	–	2	175	177	4	74	19	97	460
Total – Eurozone (excluding GIIPS)	**1,081**	**738**	**47**	**5,095**	**5,880**	**61**	**153**	**30**	**244**	**7,205**
Rest of Europe										
Norway	323	313	1	–	314	1	3	–	4	641
Sweden	28	204	3	298	505	5	–	–	5	538
Switzerland	244	–	–	–	–	7	44	49	100	344
United Kingdom	942	31	642	3,934	4,607	93	114	26	233	5,782
Other (8)	29	125	–	–	125	6	–	1	7	161
Total – Rest of Europe	**1,566**	**673**	**646**	**4,232**	**5,551**	**112**	**161**	**76**	**349**	**7,466**
Total – All of Europe (9)	**2,968**	**1,411**	**737**	**9,327**	**11,475**	**200**	**452**	**106**	**758**	**15,201**

As at October 31, 2017	Funded lending (2)	Securities (3)				Repo-style transactions and derivatives (5)(6)				Total net
Country	Total	Bank	Corporate	Sovereign	Total	Bank	Corporate	Sovereign	Total	exposure
Total – GIIPS	151	–	1	–	1	19	46	–	65	217
Total – Eurozone (excluding GIIPS)	1,120	247	133	1,188	1,568	84	85	28	197	2,885
Total – Rest of Europe	2,081	479	77	572	1,128	243	63	13	319	3,528
Total – All of Europe (9)	3,352	726	211	1,760	2,697	346	194	41	581	6,630

(1) BMO has the following indirect exposures to Europe as at October 31, 2018:
- Collateral of €229 million to support trading activity in securities (€33 million from GIIPS) and €93 million of cash collateral held.
- Guarantees of $1.5 billion ($86 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 $162 million, with no net single-name* CDS exposure to GIIPS countries as at October 31, 2018 (*includes a net position of $110 million (bought protection) on a CDS Index, of which 18% is comprised of GIIPS domiciled entities).
(5) Repo-style transactions are primarily with bank counterparties for which BMO holds collateral ($26.0 billion for Europe as at October 31, 2018).
(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 we are required to maintain with the Irish Central Bank of $23 million as at October 31, 2018.
(8) Other Eurozone exposure includes 6 countries with less than $300 million net exposure. Other European exposure is distributed across 3 countries as at October 31, 2018.
(9) Of our total net direct exposure to Europe, approximately 55% was to counterparties in countries with a rating of Aaa/AAA from at least one of Moody's and S&P.

European Lending Exposure by Country and Counterparty (9)

(Canadian $ in millions)	Funded lending as at October 31, 2018			Lending (2) As at October 31, 2018		As at October 31, 2017	
Country	Bank	Corporate	Sovereign	Commitments	Funded	Commitments	Funded
GIIPS							
Greece	–	–	–	–	–	–	–
Ireland (7)	–	5	–	5	5	103	6
Italy	13	2	–	15	15	27	27
Portugal	–	–	–	–	–	–	–
Spain	295	6	–	318	301	149	118
Total – GIIPS	**308**	**13**	**–**	**338**	**321**	279	151
Eurozone (excluding GIIPS)							
France	136	–	–	186	136	152	107
Germany	301	160	–	522	461	488	358
Netherlands	148	150	–	443	298	756	554
Other (8)	100	86	–	313	186	247	101
Total – Eurozone (excluding GIIPS)	**685**	**396**	**–**	**1,464**	**1,081**	1,643	1,120
Rest of Europe							
Norway	39	284	–	687	323	287	153
Sweden	28	–	–	87	28	195	49
Switzerland	27	217	–	303	244	156	99
United Kingdom	19	923	–	1,638	942	2,285	1,746
Other (8)	4	25	–	548	29	66	34
Total – Rest of Europe	**117**	**1,449**	**–**	**3,263**	**1,566**	2,989	2,081
Total – All of Europe (9)	**1,110**	**1,858**	**–**	**5,065**	**2,968**	4,911	3,352

Refer to footnotes in the table on page 93.

Derivative Transactions

The following table presents the notional amounts of our over-the-counter (OTC) derivative contracts, comprised of 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, BMO acquires 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, and we may be called on to make additional contributions, or to provide other support in the event another member defaults. As part of BMO's preparations, we are closely monitoring the implications of the United Kingdom's exit from the European Union (Brexit) and the potential impact on CCPs in both jurisdictions.

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. The fair values of OTC derivative contracts are recorded in our Consolidated Balance Sheet.

Over-the-Counter Derivatives (Notional amounts)

(Canadian $ in millions)	Non-centrally cleared		Centrally cleared		Total	
As at October 31	**2018**	2017	**2018**	2017	**2018**	2017
Interest Rate Contracts						
Swaps	**453,976**	479,177	**3,378,021**	2,723,188	**3,831,997**	3,202,365
Forward rate agreements	**10,031**	1,442	**401,542**	193,700	**411,573**	195,142
Purchased options	**35,023**	29,107	**–**	–	**35,023**	29,107
Written options	**48,721**	37,247	**–**	–	**48,721**	37,247
Total interest rate contracts	**547,751**	546,973	**3,779,563**	2,916,888	**4,327,314**	3,463,861
Foreign Exchange Contracts						
Cross-currency swaps	**92,916**	85,586	**–**	–	**92,916**	85,586
Cross-currency interest rate swaps	**455,232**	434,210	**–**	–	**455,232**	434,210
Forward foreign exchange contracts	**438,754**	370,762	**33,569**	31,946	**472,323**	402,708
Purchased options	**21,093**	23,812	**375**	–	**21,468**	23,812
Written options	**23,622**	29,023	**396**	78	**24,018**	29,101
Total foreign exchange contracts	**1,031,617**	943,393	**34,340**	32,024	**1,065,957**	975,417
Commodity Contracts						
Swaps	**24,366**	18,713	**–**	–	**24,366**	18,713
Purchased options	**6,182**	7,080	**–**	–	**6,182**	7,080
Written options	**4,233**	4,905	**–**	–	**4,233**	4,905
Total commodity contracts	**34,781**	30,698	**–**	–	**34,781**	30,698
Equity Contracts	**53,107**	63,528	**–**	–	**53,107**	63,528
Credit Default Swaps						
Purchased	**1,448**	1,640	**1,599**	1,018	**3,047**	2,658
Written	**23**	114	**420**	334	**443**	448
Total credit default swaps	**1,471**	1,754	**2,019**	1,352	**3,490**	3,106
Total	**1,668,727**	1,586,346	**3,815,922**	2,950,264	**5,484,649**	4,536,610

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Market Risk

Market risk is the potential for adverse changes in the value of BMO's 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 BMO's trading and underwriting activities, as well as its 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 ensures effective identification, measurement, reporting and control of market risk exposures.

Trading and Underwriting Market Risk Governance

BMO's market risk-taking activities are subject to a comprehensive governance framework. The 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 RMC regularly reviews and discusses significant market risk exposures and positions, and provides ongoing senior management oversight of BMO's risk-taking activities. Both of these committees are kept apprised of specific market risk exposures and other factors that could expose BMO 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 BMO's risk 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 BMO's risk governance framework, our market risk management framework is comprised of the processes, infrastructure and supporting documentation which, together, ensure that the bank's market risk exposures are appropriately identified, accurately measured, and independently monitored and controlled on an ongoing basis.

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 servicing customer requirements, market making and related financing activities, and from assisting clients to raise funds by way of securities issuance.

Identification and Measurement 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 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.

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 and/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 measures reflect current conditions.

Probabilistic stress testing and scenario analysis are used daily to determine the potential impact of plausible but severe market changes on our portfolios. In addition, historical event stresses are tested on a weekly basis, including tests of scenarios such as the stock market crash of 1987 and the collapse of Lehman Brothers in 2008. Targeted analyses of risks and portfolios, along with other ad hoc analyses, are also conducted to examine our sensitivity to hypothetical, low-frequency, high-severity scenarios. Scenarios are amended, added or removed to better reflect changes in underlying market conditions 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. 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. The bank's 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.

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Although it is a valuable indicator of risk, as with any model-driven metric, VaR has limitations. Among these limitations is 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

A comprehensive set of limits is applied to these metrics, and these limits are subject to regular monitoring and reporting, with any breach of the limits 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 increased year-over-year, driven by increased equity exposures from client facilitation activities, increased credit exposure from the acquisition of KGS-Alpha, and a general increase in the volatility of historical market data used in the calculation. Changes in total trading SVaR are also attributable to an increase in client facilitation activities, as well as the acquisition and a related increase in certain types of inventory with price behaviour that was particularly volatile during the historical period used to compute SVaR.

Total Trading Value at Risk (VaR) Summary (1)(2)

As at or for the year ended October 31 (pre-tax Canadian $ equivalent in millions)	2018				2017			
	Year-end	**Average**	**High**	**Low**	Year-end	Average	High	Low
Commodity VaR	**0.7**	**0.9**	**13.6**	**0.3**	0.9	0.9	1.7	0.4
Equity VaR	**4.4**	**4.4**	**7.8**	**2.9**	3.3	3.1	8.5	2.2
Foreign exchange VaR	**0.5**	**0.6**	**2.2**	**0.1**	0.3	0.8	3.1	0.1
Interest rate VaR	**6.1**	**5.9**	**8.7**	**3.6**	5.0	6.1	11.4	3.9
Credit VaR	**7.4**	**2.6**	**7.4**	**1.5**	1.9	2.3	4.1	1.5
Diversification	**(8.3)**	**(6.8)**	**nm**	**nm**	(5.9)	(7.0)	nm	nm
Total Trading VaR	**10.8**	**7.6**	**17.5**	**4.7**	5.5	6.2	10.0	4.3
Total Trading SVaR	**56.3**	**26.8**	**56.3**	**16.6**	24.6	20.5	34.6	13.4

(1) One-day measure using a 99% confidence interval. Benefits are presented in brackets and losses are presented as positive numbers.
(2) Stressed VaR is produced weekly and at month end.
nm – not meaningful

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

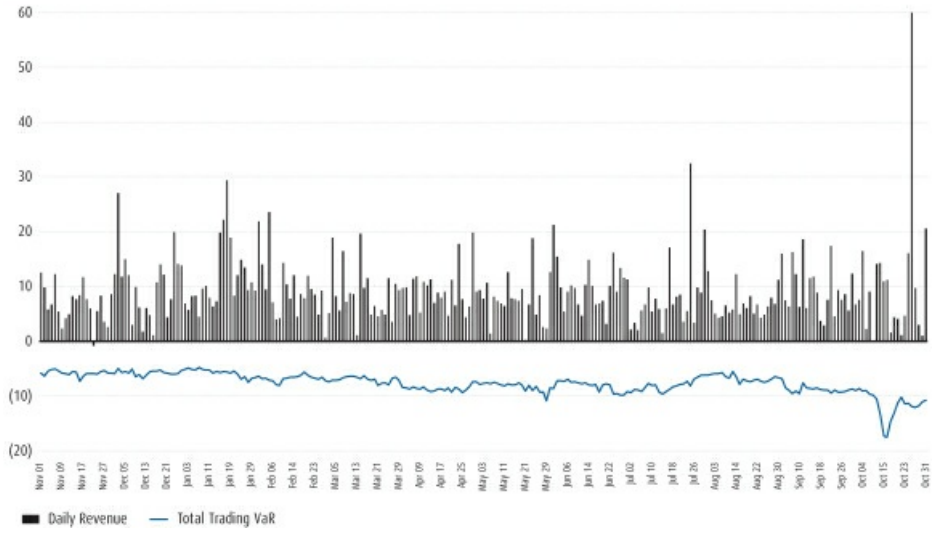
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Trading Net Revenue

The charts below present daily net revenues plotted against Total Trading VaR, along with a representation of daily net revenue distribution. In 2018, we incurred net trading losses on one day totalling $0.8 million. The loss occurred on November 22, 2017, and did not exceed VaR.

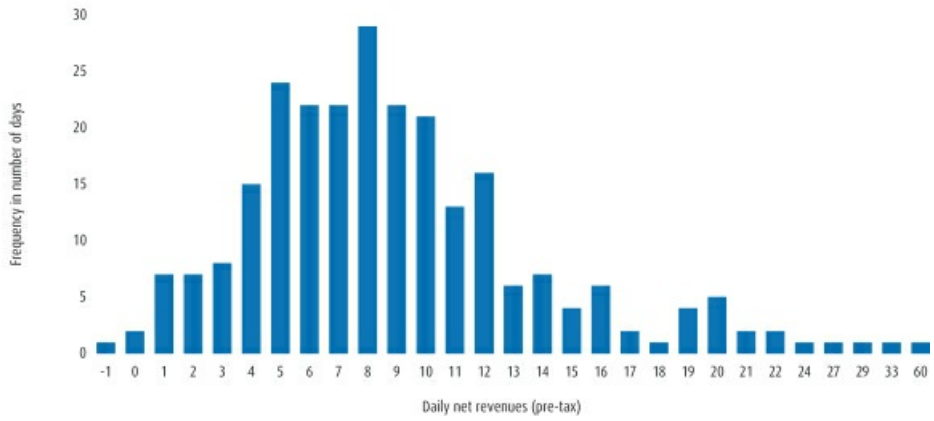
Trading Net Revenues versus Value at Risk

(pre-tax basis and in millions of Canadian dollars)
November 1, 2017 to October 31, 2018 ($ millions)



Frequency Distribution of Daily Net Revenues

November 1, 2017 to October 31, 2018 ($ millions)



Structural (Non-Trading) Market Risk

Structural market risk is comprised of interest rate risk arising from our banking activities (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 due to changes in interest rates, more granular management limits are in place to guide the daily management of this risk.

The RRC has oversight of the management of structural market risk, annually approves the structural market risk plan and limits, and regularly reviews structural market risk positions. The RMC and the Balance Sheet and Capital Management Committee (BSCMC) regularly review structural market risk positions and provide senior management oversight.

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 spread, while managing the risk to the economic value of our assets arising from changes in interest rates.

Structural interest rate risk is primarily comprised of 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.

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.

The models used to measure structural interest rate risk use projected changes in interest rates and predict how customers would likely react to these changes. For customer loans and deposits with scheduled maturity and repricing dates (such as mortgages and term deposits), our 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), we measure our exposure 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 processes and ongoing dialogue with the lines of business. Models developed to predict customer behaviour are also used in support of product pricing. All models are subject to our Model Risk Management Framework, which is described in more detail on page 111.

Structural interest rate earnings and economic value sensitivity to an immediate parallel increase or decrease of 100 basis points in the yield curve is disclosed in the following table.

There were no significant changes in our structural market risk management framework during the year.

Structural economic value exposure 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 increased relative to October 31, 2017, primarily owing to modelled deposit pricing being more rate-sensitive at higher interest rate levels following the increase in market rates during the year. The structural economic value benefit to falling interest rates relative to October 31, 2017, increased owing to the greater extent to which interest rates can now fall. 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 exposure 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. Canadian and U.S. long-term and short-term rates increased during the year. The structural earnings exposures to falling interest rates decreased relative to October 31, 2017, primarily owing to the increased extent to which certain deposits can reprice lower following the increase in market rates during the year. The structural earnings benefit to rising interest rates primarily reflects the benefit of widening deposit spreads as interest rates rise and was relatively unchanged year-over-year.

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

Structural Interest Rate Sensitivity (1)

(Pre-tax Canadian $ equivalent in millions)	As at October 31, 2018 Economic value sensitivity	As at October 31, 2018 Earnings sensitivity over the next 12 months	As at October 31, 2017 Economic value sensitivity	As at October 31, 2017 Earnings sensitivity over the next 12 months
100 basis point increase	**(1,079.2)**	**136.5**	(957.8)	136.9
100 basis point decrease	**626.5**	**(304.1)**	78.6	(433.4)

(1) Losses are presented in brackets and benefits are presented as positive numbers.

Insurance Market Risk

Insurance market risk includes interest rate and equity market risk arising from BMO's insurance business activities. A 100 basis point increase in interest rates at October 31, 2018 would result in an increase in earnings before tax of $37 million ($52 million at October 31, 2017). A 100 basis point decrease in interest rates at October 31, 2018 would result in a decrease in earnings before tax of $37 million ($50 million at October 31, 2017). On an unhedged basis, a 10% decrease in equity market values at October 31, 2018 would result in a decrease in earnings before tax of $44 million ($40 million at October 31, 2017). A 10% increase in equity market values at October 31, 2018 would result in an increase in earnings before tax of $42 million ($40 million at October 31, 2017). During the quarter, a hedging program was put in place that will limit the decrease in earnings before tax due to decreases in equity market values to a maximum of $34 million in a quarter. The impact on earnings from insurance market risk is reflected in insurance claims, commissions and changes in policy benefit liabilities on the Consolidated Statement of Income and the corresponding change in the fair value of our policy benefit liabilities is reflected in Other Liabilities on the Consolidated Balance Sheet. Insurance market risk impacts are not reflected in the table above.

Foreign Exchange Risk

Structural foreign exchange risk arises primarily from translation risk related to the net investment in our U.S. operations and from transaction risk associated with our U.S.-dollar-denominated net income.

Translation risk represents the impact that changes in foreign exchange rates could have on BMO's reported shareholders' equity and capital ratios. BMO may enter into arrangements to offset the impact of foreign exchange movements on its capital ratios, and did so during the 2018 fiscal year. Please see the Enterprise-Wide Capital Management section on page 69 for further discussion.

Transaction risk represents the impact that fluctuations in the Canadian/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/U.S. dollar exchange rate fluctuations on financial results, although no hedges were executed in the year. If future results are consistent with results in 2018, each one cent increase (decrease) in the Canadian/U.S. dollar exchange rate would be expected to increase (decrease) the Canadian dollar equivalent of our U.S. segment net income before income taxes for the year by $14 million, in the absence of hedging transactions. Refer to the Foreign Exchange section on page 34 for a more complete discussion of the effects of changes in exchange rates on the bank's results.

Linkages between Balance Sheet Items and Market Risk Disclosures

The table below presents items reported in our Consolidated Balance Sheet that are subject to market risk, comprised of balances that are subject to either traded risk or non-traded risk measurement techniques.

(Canadian $ in millions)	As at October 31, 2018 Consolidated Balance Sheet	Subject to market risk: Traded risk (1)	Subject to market risk: Non-traded risk (2)	Not subject to market risk	As at October 31, 2017 Consolidated Balance Sheet	Subject to market risk: Traded risk (1)	Subject to market risk: Non-traded risk (2)	Not subject to market risk	Main risk factors for non-traded risk balances
Assets Subject to Market Risk									
Cash and cash equivalents	**42,142**	**–**	**42,142**	**–**	32,599	–	32,599	–	Interest rate
Interest bearing deposits with banks	**8,305**	**250**	**8,055**	**–**	6,490	346	6,144	–	Interest rate
Securities	**180,935**	**99,561**	**81,374**	**–**	163,198	90,449	72,749	–	Interest rate, credit spread, equity
Securities borrowed or purchased under resale agreements	**85,051**	**–**	**85,051**	**–**	75,047	–	75,047	–	Interest rate
Loans (net of allowance for credit losses)	**383,991**	**–**	**383,991**	**–**	358,507	–	358,507	–	Interest rate, foreign exchange
Derivative instruments	**26,204**	**24,401**	**1,803**	**–**	28,951	27,359	1,592	–	Interest rate, foreign exchange
Customers' liability under acceptances	**18,585**	**–**	**18,585**	**–**	16,546	–	16,546	–	Interest rate
Other assets	**28,835**	**–**	**13,829**	**15,006**	28,242	–	12,927	15,315	Interest rate
Total Assets	**774,048**	**124,212**	**634,830**	**15,006**	709,580	118,154	576,111	15,315	
Liabilities Subject to Market Risk									
Deposits	**522,051**	**15,309**	**506,742**	**–**	479,792	13,674	466,118	–	Interest rate, foreign exchange
Derivative instruments	**24,411**	**21,380**	**3,031**	**–**	27,804	26,122	1,682	–	Interest rate, foreign exchange
Acceptances	**18,585**	**–**	**18,585**	**–**	16,546	–	16,546	–	Interest rate
Securities sold but not yet purchased	**28,804**	**28,804**	**–**	**–**	25,163	25,163	–	–	
Securities lent or sold under repurchase agreements	**66,684**	**–**	**66,684**	**–**	55,119	–	55,119	–	Interest rate
Other liabilities	**61,004**	**–**	**60,881**	**123**	55,773	–	55,415	358	Interest rate
Subordinated debt	**6,782**	**–**	**6,782**	**–**	5,029	–	5,029	–	Interest rate
Total Liabilities	**728,321**	**65,493**	**662,705**	**123**	665,226	64,959	599,909	358	

(1) Primarily comprised of 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 comprised of balance sheet items that are subject to the structural balance sheet and insurance risk management framework.

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 the 2018 annual consolidated financial statements (see page 78).

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. It generally entails the inherent unpredictability that can arise from assuming long-term policy liabilities or from the uncertainty of 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, including annuities and life, accident and sickness, and creditor insurance, as well as in our 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.

BMO's risk governance practices provide effective independent oversight and control of risk within BMO Insurance. BMO's Insurance 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; 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 CRO, 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, 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 our 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, measurement and management of insurance risk. Reinsurance transactions that transfer insurance risk from BMO Insurance to independent reinsurance companies are also used to mitigate our exposure to insurance risk by diversifying risk and limiting claims. Our reinsurance business, in turn, assumes property catastrophe and other reinsurance risks from independent reinsurers in various jurisdictions worldwide in order to diversify our geographic reinsurance exposures in accordance with our BMO Insurance risk management framework.

Liquidity and Funding Risk

Liquidity and funding risk is the potential for loss if BMO is unable to meet 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 essential to maintaining a safe and sound enterprise, depositor confidence and earnings stability. It is BMO's policy to ensure that sufficient liquid assets and funding capacity are available to meet 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 management of liquidity and funding risk across the enterprise. The Corporate Treasury group is responsible for identifying, assessing, managing, monitoring, mitigating and reporting on liquidity and funding risks. The Corporate Treasury group develops and recommends the Liquidity and Funding Risk Management Framework and the related risk appetite and limits, monitors compliance with the 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 and Capital Management Committee (BSCMC) provide senior management oversight and also review and discuss significant liquidity and funding policies, issues and developments that arise in the pursuit of our strategic priorities. The Risk Review Committee (RRC) provides oversight of the management of liquidity and funding risk, annually approves applicable policies, limits and the contingency plan, and regularly reviews liquidity and funding positions.

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 outline 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.

BMO has a robust limit structure in place in order to manage liquidity and funding risk. Limits define the enterprise-level risk appetite for our key Net Liquidity Position (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, 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 growing liquidity or funding risk in the market or risks specific to BMO.

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

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 legal and regulatory requirements 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 requirements.

BMO employs funds transfer pricing and liquidity transfer pricing practices to help ensure that appropriate economic signals for the pricing of products for customers are provided to the lines of business and to assess the performance of each business. These practices capture both the cost of funding assets and the value of deposits under normal operating conditions, as well as the cost of holding supplemental liquid assets to meet contingent liquidity requirements.

Liquidity and Funding Risk Measurement

A key component of liquidity risk management is the measurement of liquidity risk under stress. BMO uses the NLP as a key measure of liquidity risk. The 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, obligations to pledge collateral due to ratings downgrades or market volatility, and the continuing need to fund new assets or 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 depositor 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 BMO's stated risk tolerance and are considered in management decisions on setting limits 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 the 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 Liquidity Coverage Ratio (LCR) and Net Cumulative Cash Flow.

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 our 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 our management framework reflects management's assessment of the liquidity value of those assets under a severe stress scenario. Liquid assets held in the trading businesses include cash on deposit with central banks, short-term deposits with other financial institutions, highly-rated debt and equity securities and short-term reverse repurchase agreements. Supplemental liquidity pool assets are predominantly comprised of cash on deposit with central banks and 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 75% of the supplemental liquidity pool is held at the parent bank level in Canadian-dollar- and U.S.-dollar-denominated assets, with the majority of the remaining supplemental liquidity pool held at BMO Harris Bank in U.S.-dollar-denominated assets. The size of the supplemental liquidity pool is integrated with our measurement of liquidity risk. To meet local regulatory requirements, certain of our legal entities maintain their own minimum liquidity positions. There may be legal and regulatory restrictions on our 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, BMO 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, BMO 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 $242.6 billion at October 31, 2018, compared with $213.8 billion at October 31, 2017. The increase in unencumbered liquid assets was primarily due to higher cash and securities balances and the impact of the stronger U.S. dollar. Net unencumbered liquid assets are primarily held at the parent bank level, at our U.S. bank entity BMO Harris Bank, and in our broker/dealer operations. In addition to liquid assets, BMO has 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 BMO's liquidity position.

In addition to cash and securities holdings, BMO 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. See Note 24 on page 201 of the consolidated financial statements for further information on pledged assets.

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

Liquid Assets

(Canadian $ in millions)	As at October 31, 2018 Carrying value/on-balance sheet assets (1)	Other cash and securities received	Total gross assets (2)	Encumbered assets	Net unencumbered assets (3)	As at October 31, 2017 Net unencumbered assets (3)
Cash and cash equivalents	**42,142**	**–**	**42,142**	**1,655**	**40,487**	31,164
Deposits with other banks	**8,305**	**–**	**8,305**	**–**	**8,305**	6,490
Securities and securities borrowed or purchased under resale agreements						
Sovereigns / Central banks / Multilateral development banks	**146,514**	**26,530**	**173,044**	**94,886**	**78,158**	59,414
NHA mortgage-backed securities and U.S. agency mortgage-backed securities and collateralized mortgage obligations	**31,966**	**314**	**32,280**	**12,513**	**19,767**	18,719
Corporate and other debt	**23,671**	**10,773**	**34,444**	**6,472**	**27,972**	22,414
Corporate equity	**63,835**	**21,416**	**85,251**	**42,446**	**42,805**	52,616
Total securities and securities borrowed or purchased under resale agreements	**265,986**	**59,033**	**325,019**	**156,317**	**168,702**	153,163
NHA mortgage-backed securities (reported as loans at amortized cost) (4)	**27,865**	**–**	**27,865**	**2,747**	**25,118**	22,940
Total liquid assets	**344,298**	**59,033**	**403,331**	**160,719**	**242,612**	213,757
Other eligible assets at central banks (not included above) (5)	**64,029**	**–**	**64,029**	**660**	**63,369**	64,776
Undrawn credit lines granted by central banks	**–**	**–**	**–**	**–**	**–**	–
Total liquid assets and other sources	**408,327**	**59,033**	**467,360**	**161,379**	**305,981**	278,533

(1) The carrying values outlined in this table are consistent with the carrying values reported in BMO's balance sheet as at October 31, 2018.
(2) Gross assets include on-balance sheet and off-balance sheet assets.
(3) Net unencumbered liquid assets are 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 encumbered assets.
(4) Under IFRS, National Housing Authority (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.
(5) Represents 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 the bank's loan portfolio, including incremental securitization, covered bond issuances and Federal Home Loan Bank (FHLB) advances. In July 2018, the Bank of Canada announced that it was increasing the haircuts applied to non-mortgage loans that could be used to access its Standing Liquidity Facility effective August 2018, reducing the amount of funds the bank could access from the Bank of Canada in a period of stress. The impact of this change is reflected as at October 31, 2018. This change does not materially impact the bank.

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

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Asset Encumbrance

(Canadian $ in millions) As at October 31, 2018	Total gross assets (1)	Encumbered (2) Pledged as collateral	Encumbered (2) Other encumbered	Net unencumbered Other unencumbered (3)	Net unencumbered Available as collateral (4)
Cash and deposits with other banks	**50,447**	**–**	**1,655**	**–**	**48,792**
Securities (5)	**352,884**	**127,211**	**31,853**	**10,580**	**183,240**
Loans and acceptances	**356,126**	**73,553**	**660**	**218,544**	**63,369**
Other assets					
Derivative instruments	**26,204**	**–**	**–**	**26,204**	**–**
Customers' liability under acceptances	**18,585**	**–**	**–**	**18,585**	**–**
Premises and equipment	**1,986**	**–**	**–**	**1,986**	**–**
Goodwill	**6,373**	**–**	**–**	**6,373**	**–**
Intangible assets	**2,272**	**–**	**–**	**2,272**	**–**
Current tax assets	**1,515**	**–**	**–**	**1,515**	**–**
Deferred tax asset	**2,037**	**–**	**–**	**2,037**	**–**
Other assets	**14,652**	**2,509**	**–**	**12,143**	**–**
Total other assets	**73,624**	**2,509**	**–**	**71,115**	**–**
Total assets	**833,081**	**203,273**	**34,168**	**300,239**	**295,401**

(Canadian $ in millions) As at October 31, 2017	Total gross assets (1)	Encumbered (2) Pledged as collateral	Encumbered (2) Other encumbered	Net unencumbered Other unencumbered (3)	Net unencumbered Available as collateral (4)
Cash and deposits with other banks	39,089	–	1,435	3	37,651
Securities (5)	313,955	109,835	28,017	9,692	166,411
Loans and acceptances	333,066	63,438	393	204,459	64,776
Other assets					
Derivative instruments	28,951	–	–	28,951	–
Customers' liability under acceptances	16,546	–	–	16,546	–
Premises and equipment	2,033	–	–	2,033	–
Goodwill	6,244	–	–	6,244	–
Intangible assets	2,159	–	–	2,159	–
Current tax assets	1,371	–	–	1,371	–
Deferred tax asset	2,865	–	–	2,865	–
Other assets	13,570	3,739	–	9,831	–
Total other assets	73,739	3,739	–	70,000	–
Total assets	759,849	177,012	29,845	284,154	268,838

(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 lent, 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 cash and securities of $10.6 billion as at October 31, 2018, which include securities held at BMO's insurance subsidiary, significant equity investments, and certain investments held at our merchant banking business. Other unencumbered assets also include mortgages and loans that may be securitized to access secured funding.

(4) Loans included as 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 the bank'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.

BMO's Liquidity Coverage Ratio (LCR) is summarized in the table on the following page. The average daily LCR for the quarter ended October 31, 2018, was 145%. The LCR is calculated on a daily basis as the ratio of the stock of High-Quality Liquid Assets (HQLA) to total net stressed cash outflows over the next 30 calendar days. The average LCR was down from 152% last year. HQLA and net cash outflows both increased; however, the ratio between them changed year-over-year. While banks are required to maintain an LCR greater than 100% in normal conditions, banks 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 are primarily comprised of 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. OSFI-prescribed weights 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 the bank's 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 on page 102.

Liquidity Coverage Ratio

(Canadian $ in billions, except as noted)	For the quarter ended October 31, 2018 Total unweighted value (average) (1) (2)	 Total weighted value (average) (2) (3)
High-Quality Liquid Assets		
Total high-quality liquid assets (HQLA)	*	**155.0**
Cash Outflows		
Retail deposits and deposits from small business customers, of which:	**167.3**	**10.3**
Stable deposits	**91.3**	**2.7**
Less stable deposits	**76.0**	**7.6**
Unsecured wholesale funding, of which:	**152.2**	**84.1**
Operational deposits (all counterparties) and deposits in networks of cooperative banks	**60.3**	**15.0**
Non-operational deposits (all counterparties)	**60.8**	**38.0**
Unsecured debt	**31.1**	**31.1**
Secured wholesale funding	*	**19.2**
Additional requirements, of which:	**134.8**	**29.6**
Outflows related to derivatives exposures and other collateral requirements	**8.0**	**4.4**
Outflows related to loss of funding on debt products	**2.7**	**2.7**
Credit and liquidity facilities	**124.1**	**22.5**
Other contractual funding obligations	**0.8**	**–**
Other contingent funding obligations	**385.1**	**6.6**
Total cash outflows	*	**149.8**
Cash Inflows		
Secured lending (e.g. reverse repos)	**136.5**	**21.0**
Inflows from fully performing exposures	**8.8**	**5.2**
Other cash inflows	**16.7**	**16.7**
Total cash inflows	**162.0**	**42.9**

	Total adjusted value (4)
Total HQLA	**155.0**
Total net cash outflows	**106.9**
Liquidity Coverage Ratio (%)	**145**

For the quarter ended October 31, 2017	Total adjusted value (4)
Total HQLA	130.3
Total net cash outflows	85.8
Liquidity Coverage Ratio (%)	152

* 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 63 business days in the fourth quarter of 2018.

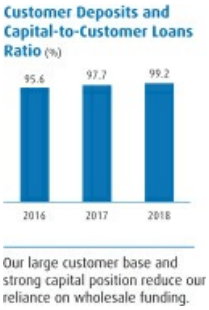
(3) Weighted values are calculated after the application of the weights prescribed under the OSFI Liquidity Adequacy Requirements (LAR) Guideline for HQLA and cash inflows and outflows.

(4) Adjusted values are calculated based on total weighted values after applicable caps, as defined by the LAR Guideline.

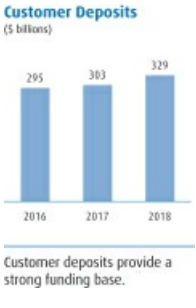
Funding Strategy

Our funding philosophy 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. Wholesale secured and unsecured 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 time periods. Supplemental liquidity pools are funded largely with wholesale term funding.

BMO maintains a large and stable base of customer deposits that, in combination with our strong capital base, is a source of strength. It supports the maintenance of a sound liquidity position and reduces our reliance on wholesale funding. Customer deposits totalled $329.2 billion at October 31, 2018, up from $303.1 billion in 2017, due to strong deposit growth and the impact of the stronger U.S. dollar. BMO also receives non-marketable deposits from corporate and institutional customers in support of certain trading activities. These deposits totalled $29.5 billion as at October 31, 2018, unchanged from October 31, 2017.



Our large customer base and strong capital position reduce our reliance on wholesale funding.



Customer deposits provide a strong funding base.

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

Total wholesale funding outstanding, largely consisting of negotiable marketable securities, was $203.3 billion at October 31, 2018, with $63.2 billion sourced as secured funding and $140.1 billion sourced as unsecured funding. Wholesale funding outstanding increased $22.8 billion, or $20.5 billion excluding the impact of the stronger U.S. dollar. The mix and maturities of BMO's wholesale term funding are outlined in the table below. Additional information on deposit maturities can be found on page 107. BMO maintains a sizeable portfolio of unencumbered liquid assets, totalling $242.6 billion as at October 31, 2018 and $213.8 billion as at October 31, 2017, that can be monetized to meet potential funding requirements, as described in the Unencumbered Liquid Assets section on page 101.

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 the bank on or after September 23, 2018 that has an original term greater than 400 days and is marketable, subject to certain exceptions. BMO is required to meet minimum TLAC ratio requirements by November 1, 2021. We do not expect a material impact to our funding plan as a result of Canada's Bail-In Regime and TLAC requirements. For more information on Canada's Bail-In Regime and TLAC requirements, please see Regulatory Developments under Capital Management on page 71.

Diversification of our wholesale funding sources is an important part of our overall liquidity management strategy. BMO's wholesale funding activities are well-diversified by jurisdiction, currency, investor segment, instrument, and maturity profile. BMO maintains 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, auto and home equity line of credit (HELOC) securitizations, covered bonds, and Canadian and U.S. senior unsecured deposits.



BMO's wholesale funding plan seeks to ensure sufficient funding capacity is available to execute our business strategies. The funding plan considers expected maturities, as well as asset and liability growth projected for our businesses in our forecasting and planning processes, and assesses funding needs in relation to the funding sources available. The funding plan is reviewed annually by the BSCMC and RMC and approved by the RRC, and is regularly updated to reflect actual results and incorporate updated forecast information.

Wholesale Funding Maturities (1)

	As at October 31, 2018								As at October 31, 2017
(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	**4,706**	**185**	**71**	**8**	**4,970**	**–**	**7**	**4,977**	3,962
Certificates of deposit and commercial paper	**13,727**	**23,434**	**17,794**	**11,059**	**66,014**	**2,304**	**–**	**68,318**	60,640
Bearer deposit notes	**227**	**270**	**79**	**–**	**576**	**–**	**–**	**576**	2,815
Asset-backed commercial paper (ABCP)	**1,051**	**1,691**	**640**	**204**	**3,586**	**–**	**–**	**3,586**	3,722
Senior unsecured medium-term notes	**–**	**1,317**	**1,400**	**4,816**	**7,533**	**12,836**	**35,384**	**55,753**	48,089
Senior unsecured structured notes (2)	**–**	**–**	**–**	**–**	**–**	**18**	**3,675**	**3,693**	3,002
Covered bonds and securitizations									
Mortgage and HELOC securitizations	**–**	**1,018**	**473**	**1,122**	**2,613**	**3,154**	**12,436**	**18,203**	17,935
Covered bonds	**–**	**2,235**	**–**	**1,490**	**3,725**	**5,816**	**15,722**	**25,263**	23,225
Other asset-backed securitizations (3)	**1,058**	**–**	**–**	**168**	**1,226**	**1,452**	**4,252**	**6,930**	5,160
Subordinated debt	**–**	**–**	**–**	**–**	**–**	**–**	**6,841**	**6,841**	5,028
Other (4)	**–**	**4,971**	**–**	**–**	**4,971**	**–**	**4,214**	**9,185**	6,935
Total	**20,769**	**35,121**	**20,457**	**18,867**	**95,214**	**25,580**	**82,531**	**203,325**	180,513
Of which:									
Secured	**2,109**	**9,915**	**1,113**	**2,984**	**16,121**	**10,422**	**36,624**	**63,167**	56,977
Unsecured	**18,660**	**25,206**	**19,344**	**15,883**	**79,093**	**15,158**	**45,907**	**140,158**	123,536
Total (5)	**20,769**	**35,121**	**20,457**	**18,867**	**95,214**	**25,580**	**82,531**	**203,325**	180,513

(1) Wholesale unsecured funding primarily includes funding raised through the issuance of marketable, negotiable instruments. Wholesale funding excludes repo transactions and bankers' acceptances, which are disclosed in the contractual maturity table on page 107, and also excludes ABCP issued by certain ABCP conduits that is not consolidated for financial reporting purposes.
(2) Primarily issued to institutional investors.
(3) Includes credit card and auto securitizations.
(4) Refers to FHLB advances.
(5) Total wholesale funding consists of Canadian-dollar-denominated funding of $49.2 billion and U.S.-dollar-denominated and other foreign-currency-denominated funding of $154.1 billion as at October 31, 2018.

Regulatory Developments

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 the bank's assets. In February 2018, OSFI announced a revised target NSFR implementation date of January 2020 for Canadian deposit-taking institutions, given the progress made to date on implementation at the international level.

Credit Ratings

The credit ratings assigned to BMO's short-term and senior long-term debt securities by external rating agencies are important in the raising of both capital and funding to support our business operations. Maintaining strong credit ratings allows us to access the capital markets at competitive pricing levels. Should our credit ratings experience a downgrade, our cost of funding would likely increase and our access to funding and capital through the capital markets could be reduced. A material downgrade of our ratings could also have other consequences, including those set out in Note 8 starting on page 167 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. Moody's, Standard & Poor's (S&P), Fitch and DBRS have a stable outlook on BMO.

On April 19, 2018, following the finalization of the Bail-In Regime in Canada, DBRS changed the trend to Stable from Negative on the long-term issuer ratings, senior debt ratings and deposit ratings of Bank of Montreal; ratings of legacy subordinated debt were downgraded by one notch for all Canadian domestic systemically important banks.

On July 16, 2018, Moody's took various actions on its ratings of Canadian banks following the introduction of a bank resolution framework. The actions included an upgrade to the ratings for BMO's senior unsecured debt and junior subordinated bank debt (NVCC). The outlook was changed to Stable from Negative.

On August 14, 2018, S&P upgraded its stand-alone credit profile on BMO to 'a' from 'a-', to reflect improvements in its assessment of BMO's risk position. S&P affirmed its 'A+/A-1' long-term and short-term issuer credit ratings on BMO and its operating subsidiaries, and the outlook remains Stable. At the same time, S&P raised its ratings on BMO's subordinated debt and additional Tier 1 instruments by one notch, reflecting improvements in the bank's stand-alone creditworthiness.

All of the rating agencies have also assigned provisional ratings to senior unsecured debt subject to the Bail-In Regime. Moody's, S&P, Fitch and DBRS have assigned provisional ratings of A2, A-, AA- and AA (low) respectively.

As at October 31, 2018

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	Stable
S&P	A-1	A-	A+	BBB+	Stable
Fitch	F1+	AA-	AA-	A+	Stable
DBRS	R-1 (high)	AA (low)	AA	A (low)	Stable

(1) Subject to conversion under the Bank Recapitalization (Bail-In) Regime. Defined as "Junior Senior Unsecured" by Moody's, "Bail-In Eligible Senior Debt" by S&P, "Senior Unsecured" by Fitch, and "Bail-Inable Senior Debt" by DBRS.

(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. Defined as "Senior Unsecured" by Moody's and S&P, "Senior Preferred" by Fitch, and "Legacy Senior" by DBRS.

We are required to deliver collateral to certain counterparties in the event of a downgrade to our 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, 2018, we would be required to provide additional collateral to counterparties totalling $112 million, $361 million and $502 million under a one-notch, two-notch and three-notch downgrade, respectively.

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Contractual Maturities of Assets and Liabilities and Off-Balance Sheet Commitments

The tables below show the remaining contractual maturity 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, both under normal market conditions and under 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 haircuts and potential collateral requirements that may result from both market volatility and credit rating downgrades, among other assumptions.

									2018	
(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	41,162	–	–	–	–	–	–	–	980	42,142
Interest bearing deposits with banks	4,964	1,717	1,037	457	112	18	–	–	–	8,305
Securities	4,522	4,283	5,049	7,749	4,943	11,854	32,480	56,004	54,051	180,935
Securities borrowed or purchased under resale agreements	67,804	12,732	2,490	1,781	191	53	–	–	–	85,051
Loans										
Residential mortgages	1,782	1,848	4,343	6,306	4,769	24,522	64,636	11,414	–	119,620
Consumer instalment and other personal	607	440	1,026	1,143	943	5,414	19,910	9,812	23,930	63,225
Credit cards	–	–	–	–	–	–	–	–	8,329	8,329
Business and government	13,088	5,921	7,126	6,779	6,218	19,543	75,099	12,247	48,435	194,456
Allowance for credit losses	–	–	–	–	–	–	–	–	(1,639)	(1,639)
Total loans and acceptances, net of allowance	15,477	8,209	12,495	14,228	11,930	49,479	159,645	33,473	79,055	383,991
Other Assets										
Derivative instruments	2,040	3,385	1,645	1,012	807	3,407	6,074	7,834	–	26,204
Customers' liability under acceptances	16,529	1,988	65	3	–	–	–	–	–	18,585
Other	1,740	506	189	26	6	17	20	4,824	21,507	28,835
Total other assets	20,309	5,879	1,899	1,041	813	3,424	6,094	12,658	21,507	73,624
Total Assets	154,238	32,820	22,970	25,256	17,989	64,828	198,219	102,135	155,593	774,048

									2018	
(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 (1)										
Banks	16,966	6,032	1,200	227	106	–	–	–	3,376	27,907
Business and government	23,524	32,231	22,713	15,893	8,629	22,418	48,684	12,932	126,276	313,300
Individuals	2,582	6,455	7,953	7,619	10,536	11,736	16,327	2,582	115,054	180,844
Total deposits	43,072	44,718	31,866	23,739	19,271	34,154	65,011	15,514	244,706	522,051
Other liabilities										
Derivative instruments	1,499	2,456	1,616	913	639	3,831	6,335	7,122	–	24,411
Acceptances	16,529	1,988	65	3	–	–	–	–	–	18,585
Securities sold but not yet purchased	28,804	–	–	–	–	–	–	–	–	28,804
Securities lent or sold under repurchase agreements	63,496	2,249	8	931	–	–	–	–	–	66,684
Current tax liabilities	–	–	–	–	–	–	–	–	50	50
Deferred tax liabilities	–	–	–	–	–	–	–	–	74	74
Securitization and structured entities' liabilities	1,044	1,084	475	512	588	4,912	13,398	3,038	–	25,051
Other	8,548	5,568	44	34	184	789	4,455	1,905	14,302	35,829
Total other liabilities	119,920	13,345	2,208	2,393	1,411	9,532	24,188	12,065	14,426	199,488
Subordinated debt	–	–	–	–	–	–	–	6,782	–	6,782
Total Equity	–	–	–	–	–	–	–	–	45,727	45,727
Total Liabilities and Equity	162,992	58,063	34,074	26,132	20,682	43,686	89,199	34,361	304,859	774,048

(1) Deposits payable on demand and payable after notice have been included under no maturity.

									2018	
(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)	1,472	3,610	6,892	9,620	11,345	21,056	84,295	3,144	–	141,434
Backstop liquidity facilities	–	–	–	–	–	–	5,627	–	–	5,627
Operating leases	34	70	99	101	100	358	770	1,210	–	2,742
Securities lending	4,939	–	–	–	–	–	–	–	–	4,939
Purchase obligations	56	388	153	155	158	615	186	82	–	1,793

(1) 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.

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

(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	2017 Total
On-Balance Sheet Financial Instruments										
Assets										
Cash and cash equivalents	31,641	–	–	–	–	–	–	–	958	32,599
Interest bearing deposits with banks	3,784	1,579	626	319	182	–	–	–	–	6,490
Securities	3,620	2,917	5,933	5,845	3,625	7,675	22,842	52,615	58,126	163,198
Securities borrowed or purchased under resale agreements	57,919	13,236	2,353	1,241	249	49	–	–	–	75,047
Loans										
Residential mortgages	1,045	1,551	4,531	7,687	6,201	19,866	65,547	8,830	–	115,258
Consumer instalment and other personal	517	371	1,084	1,374	1,285	4,211	20,845	8,590	23,667	61,944
Credit cards	–	–	–	–	–	–	–	–	8,071	8,071
Business and government	13,379	7,352	6,454	6,169	5,059	17,948	63,614	11,380	43,712	175,067
Allowance for credit losses	–	–	–	–	–	–	–	–	(1,833)	(1,833)
Total loans and acceptances, net of allowance	14,941	9,274	12,069	15,230	12,545	42,025	150,006	28,800	73,617	358,507
Other Assets										
Derivative instruments	1,701	3,748	1,580	1,229	1,306	3,272	7,426	8,689	–	28,951
Customers' liability under acceptances	14,179	2,263	104	–	–	–	–	–	–	16,546
Other	1,340	475	129	17	11	11	131	4,431	21,697	28,242
Total other assets	17,220	6,486	1,813	1,246	1,317	3,283	7,557	13,120	21,697	73,739
Total Assets	129,125	33,492	22,794	23,881	17,918	53,032	180,405	94,535	154,398	709,580

(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	2017 Total
Liabilities and Equity										
Deposits (1)										
Banks	12,462	9,321	2,633	496	25	–	–	–	3,268	28,205
Business and government	23,917	25,224	19,112	12,897	10,806	16,522	42,707	15,712	116,379	283,276
Individuals	3,835	5,081	5,569	5,662	7,999	9,098	15,811	2,075	113,181	168,311
Total deposits	40,214	39,626	27,314	19,055	18,830	25,620	58,518	17,787	232,828	479,792
Other liabilities										
Derivative instruments	1,876	3,227	1,512	1,510	1,206	3,477	6,885	8,111	–	27,804
Acceptances	14,179	2,263	104	–	–	–	–	–	–	16,546
Securities sold but not yet purchased	25,163	–	–	–	–	–	–	–	–	25,163
Securities lent or sold under repurchase agreements	53,165	1,644	290	20	–	–	–	–	–	55,119
Current tax liabilities	–	–	–	–	–	–	–	–	125	125
Deferred tax liabilities	–	–	–	–	–	–	–	–	233	233
Securitization and structured entities' liabilities	10	709	1,523	556	845	3,931	11,812	3,668	–	23,054
Other	12,616	2,536	517	43	239	752	154	2,361	13,143	32,361
Total other liabilities	107,009	10,379	3,946	2,129	2,290	8,160	18,851	14,140	13,501	180,405
Subordinated debt	–	–	–	–	–	–	–	5,029	–	5,029
Total Equity	–	–	–	–	–	–	–	–	44,354	44,354
Total Liabilities and Equity	147,223	50,005	31,260	21,184	21,120	33,780	77,369	36,956	290,683	709,580

(1) Deposits payable on demand and payable after notice have been included under no maturity.
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	2017 Total
Off-Balance Sheet Commitments										
Commitments to extend credit (1)	1,377	2,302	4,755	8,312	14,560	21,985	71,481	2,283	–	127,055
Backstop liquidity facilities	–	–	–	–	–	–	5,044	–	–	5,044
Operating leases	31	62	91	89	87	329	712	1,032	–	2,433
Securities lending	5,336	–	–	–	–	–	–	–	–	5,336
Purchase obligations	42	83	128	124	129	519	577	157	–	1,759

(1) 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.

Material presented in a blue-tinted font above is an integral part of the 2018 annual consolidated financial statements (see page 78).

Operational Risk

Operational risk is the potential for loss resulting from inadequate or failed internal processes or systems, human interactions or external events, but excludes business risk, credit risk, liquidity and funding risk, market risk, strategic and reputation risk.

Operational risk is inherent in all of our business and banking activities and can lead to significant impacts on our business and financial results, including financial loss, restatements and damage to our reputation. Like other financial services organizations that operate in multiple jurisdictions, BMO is exposed to a variety of operational risks arising from the potential for failures of our internal processes, employees and systems, 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 and exposure to risks related to outsourcing and damage to physical assets. Given the large volume of transactions we process on a daily basis, and the complexity and speed of our business, there is a possibility that certain operational or human errors may be repeated or compounded before they are discovered and rectified.

Operational risk is not only inherent in our business and banking activities, it is also inherent in the processes and controls we use to manage our risks. There is the possibility that errors will occur, as well as the possibility of a failure in our internal processes or systems, which could lead to financial loss and reputational harm. Shortcomings or failures of our internal processes, employees or systems, 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 our reputation.

The nature of our business also exposes us to the risk of theft and fraud when we enter into credit transactions with customers or counterparties. In extending credit, we rely 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 with 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 utilize various risk management frameworks to manage and mitigate all of these risks, including internal controls, limits and governance processes. However, despite the contingency plans we have in place to maintain our 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 that we face or could face in the future. For more information on these and other factors that may affect future results, please refer to the discussion on page 80.

Consistent with the management of risk across the enterprise, we employ a three-lines-of-defence approach in managing operational risk. Operational risk is managed by the operating groups and corporate functions as the first line of defence. This is overseen by ERPM Operational Risk Management (ORM), along with Corporate Support areas for specialized risks, as the second line of defence, governed by a robust committee structure and supported by a comprehensive Operational Risk Management Framework (ORMF). The Corporate Audit Division, as the third line of defence, assesses our adherence to internal controls and limits, and identifies opportunities to strengthen our processes.

Operational Risk Governance

The Operational Risk Committee (ORC), a sub-committee of the RMC, is the primary governance committee exercising oversight of all operational risk management matters. As part of its governance responsibilities, the ORC provides effective challenge to the policies, standards, operating guidelines, methodologies and tools that comprise the governing principles of the ORMF. The documentation that gives effect to these governing principles is reviewed on a regular basis to ensure it incorporates sound practices and is consistent with our risk appetite. Regular analysis and reporting of our enterprise operational risk profile to the various committees (ORC, RMC and RRC) are important elements of our risk governance framework. Enterprise 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 Risk Management

The operating groups, as the first line of defence, are accountable for the day-to-day management of operational risk, with the CROs of businesses providing governance and oversight for their respective business units, and Corporate Support areas providing additional governance and oversight in certain targeted areas. Independent risk management oversight is provided by the ORM team, which is responsible for operational risk strategy, tools and policies, and for second-line oversight, effective challenge and governance. ORM establishes and maintains the ORMF, which defines the processes to be used by the first line of defence to identify, measure, manage, mitigate, monitor and report on key operational risk exposures, losses and near-miss operational risk events with significant potential impact. In addition, the ORMF defines the processes by which ORM, as the second line of defence, develops, supports, monitors, assesses and communicates with the first line in its management of operational risk. Operational Risk Officers (OROs) within ORM independently assess group operational risk profiles, identify material exposures and potential weaknesses in processes and controls, and recommend appropriate mitigation strategies and actions. Executing our ORMF strategy also involves continuing to strengthen our risk culture by promoting greater awareness and understanding of operational risk across all three lines of defence, learning from loss events and near-misses and providing other training and communication, as well as day-to-day execution and oversight of the ORMF. We also continue to strengthen our second-line-of-defence support and oversight.

The following are the key programs, methodologies and processes set out in the ORMF that assist us in the ongoing review of our operational risk profile:

- Risk Control Self-Assessment (RCSA) 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. The RCSA process provides a forward-looking view of the impact of the business environment and internal controls on operating group risk profiles, enabling the proactive prevention, mitigation and management of risk.

- ORM provides an independent enterprise-level view of operational risk relative to our risk appetite, so that key risks can be appropriately identified, documented, managed and mitigated.
- Process Risk Assessments (PRAs) and ORM reviews take a deeper view by identifying key risks and controls in our critical business processes, which may span multiple business and functional units. PRAs and ORM reviews enable a greater understanding of our key processes, issues and risk mitigation activities, which facilitates more effective oversight and appropriate risk management.
- BMO's initiative assessment and approval process 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 seeks to ensure that due diligence, approval, monitoring and reporting requirements are appropriately addressed at all levels of the organization.
- Key risk indicators (KRIs) provide an early indication of any adverse changes in risk exposure. Operating groups and corporate functions identify specific metrics related to their material operational risks. KRIs are used in monitoring operational risk profiles and their overall relation to our risk appetite, are subject to review and challenge by ORM, and are linked to thresholds that trigger management intervention.
- Internal loss data serves as an important means of assessing our operational risk exposure and identifying opportunities for future risk prevention. In these assessments, internal loss data is analyzed and benchmarked against available external data. Material trends are regularly reported to the ORC, RMC and RRC so that preventative or corrective action can be taken where appropriate. BMO is a member of the Operational Risk Data Exchange Association, the American Bankers Association and other national and international associations of banks that share loss data information anonymously to assist in risk identification, assessment and modelling.
- BMO's operational risk management training programs seek to ensure that our employees are qualified and equipped to execute the ORMF consistently, effectively and efficiently.
- Effective business continuity management prepares us to maintain, manage and recover 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 level 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.

A primary objective of the ORMF, and our implementation and oversight of this framework and its provisions, is to ensure that our operational risk profile is consistent with our risk appetite and supported by adequate capital.

Cyber Security Risk

Information security is integral to BMO's business activities, brand and reputation. Given our reliance on the internet and our pervasive use of advanced digital technologies to process data, we face common banking information security risks, including the threat of potential data loss, hacking, loss or exposure of customer or employee information, 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. We have increased our investments in defensive technology, talent and processes in order to prevent or detect and manage cyber security threats within BMO operations and at our service providers. These measures include benchmarking and review of best practices across peer companies and other industries, third party assessments of our controls, evaluation of the effectiveness of our key controls and development of new controls, as needed, with ongoing investments in both technology and human resources. We also work with information security and software suppliers to bolster our internal resources and technology capabilities in order to improve our ability to remain resilient in a rapidly evolving threat landscape.

Anti-Money Laundering

Compliance with all Anti-Money Laundering, Anti-Terrorist Financing (AML/ATF) and Sanctions Measures is an essential part of safeguarding BMO, our customers and the communities in which we operate. BMO is committed to managing AML/ATF and sanctions risks prudently, and complying with all legal and regulatory requirements. Risks related to non-compliance with these requirements can include enforcement actions, legal actions and damage to our reputation. Our AML/ATF and sanctions program promotes effective governance and oversight across all BMO businesses, so that we are able to take appropriate measures to prevent money laundering, terrorist financing and sanctioned activity. This program is designed to be dynamic and adaptable to the evolving nature of AML/ATF and sanctions risks, and is carried out by employees who use analytics, technology and their professional expertise in order to deter, detect and report suspicious activity.

Operational Risk Capital and Stress Testing

BMO currently uses the Advanced Measurement Approach (AMA), a risk-sensitive capital model, to determine both economic capital and, in conjunction with the Standardized Approach in certain areas, regulatory capital requirements for managing operational risk. The AMA Capital Model employs a loss distribution approach along with the four elements required to support the measurement of our operational risk exposure. Internal and external loss data are used as inputs for the AMA Capital Model and, based on shared attributes, are grouped into cells that include operating group, business activity and event type. Minimum enterprise operational risk capital is determined at a specific upper confidence limit of the enterprise total loss distribution. Business environment and internal control factors are used for post-modelling adjustments, and these are subject to regular review in order to identify and understand risk drivers and to confirm consistency in application across the enterprise. Scenarios are used to verify the distributions and correlations used to model capital, to provide management with a better understanding of low-frequency, high-severity events and to assess enterprise preparedness for events which could create risks that exceed our risk appetite. Scenario analyses are also conducted as part of our stress testing program, which measures the potential impact of plausible operational, economic, market and credit events on our operations and capital position, and allows us to manage tail risk exposure and confirm the adequacy of our operational risk capital. We are monitoring regulatory capital developments on the replacement of AMA with a new Standardized Measurement Approach.

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Model Risk

Model risk is the potential for adverse consequences following from decisions that are based on incorrect or misused model results. These adverse consequences can include financial loss, poor business decision-making or damage to reputation.

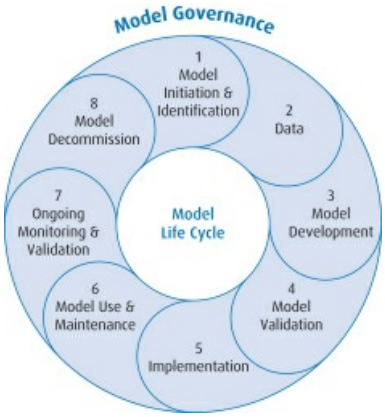
Models are quantitative tools that apply statistical, economic and other quantitative techniques and assumptions to process input data and generate quantitative estimates. BMO uses models ranging from very simple models that produce straightforward estimates to highly sophisticated models that value complex transactions or generate a broad range of forward-looking estimates.

The results from these models 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. For example, BMO uses models as a core risk management tool to measure exposure to specific risks through stress testing, to value and price transactions, to evaluate credit, market and operational risk regulatory capital requirements and to assess risks on an integrated basis using economic capital.

Quantitative 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, BMO mitigates model risk by maintaining strong controls over the development, validation, implementation and use of models across all model categories. BMO also takes steps 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 provide reasonable results.

Model Risk Management

Risk is inherent in models because model results are estimates that rely on data and statistical techniques to simulate reality or provide forecasts of future outcomes. Model risk also arises from the potential for misuse of models. Model risk is governed at BMO by the enterprise-wide Model Risk Management Framework, which covers the model life cycle.



This framework sets out an end-to-end approach for model risk governance across the model life cycle and helps to ensure that model risk remains within the limits of BMO's enterprise-wide risk appetite. The framework includes BMO's Model Risk Corporate Policy, Model Risk Corporate Standard and Model Risk Guidelines, 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 are the first line of defence, the Model Validation group and the Model Governance group are the second line of defence, and the Corporate Audit Division is the third line of defence.

The Model Governance group is responsible for the development and maintenance of the Model Risk Management Framework, oversight of the effectiveness of our model processes, our model inventory, and the overall aggregation and assessment of model risk. The 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 the bank'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.

Model Development and Validation

Models are developed, implemented and used to meet specific business objectives, in addition to complying with certain regulatory requirements and meeting risk management objectives. Model owners, in consultation with model developers and other stakeholders, determine the design, objectives, intended purpose and desired functionality of the models, and have overall responsibility for ensuring that each model complies with BMO's framework and approved terms of use. Model developers act as agents of the model owners by proposing model solutions, identifying data availability and limitations, and developing and implementing models that address their intended purposes. Developers do so by engaging model owners and other key stakeholders in the development and implementation processes, and by evaluating and documenting a model's characteristics, outputs, strengths and weaknesses, limitations and assumptions, and alternatives. Our independent Model Validation group reviews the development documentation, results and analysis generated by the model developers to evaluate whether a proposed model is conceptually and statistically sound, achieves its objectives and is fit for its intended purpose without giving rise to material model risk. They provide observations as guidance for model owners, users and developers that may lead to remediation or mitigation of model issues. Approval from the Model Valuation group is required before a model can be used, unless an exception is obtained in accordance with the framework. Where a methodology or quantitative tool is not considered to be materially reliant on advanced statistical techniques or does not otherwise meet the definition of a model, the tool will not be subject to the framework, but nevertheless, the developers and users of such methodology or tool are expected to provide appropriate documentation and arrange for effective independent review and challenge by knowledgeable BMO employees and managers.

Model Use and Monitoring

Model owners and users are accountable for the appropriate use of models in business decision-making, which includes having an understanding of the assumptions and limitations of the models, and for the proper care and maintenance of models over the model life cycle. The development and validation processes provide guidance to ensure that models can be used effectively within an appropriate range of use, that any model limitations are identified and that appropriate risk mitigants are implemented. When in use, models are subject to ongoing monitoring, including outcomes analysis, periodic reviews and revaluation as appropriate. Ongoing monitoring and outcomes analysis are part of the evaluation process, which confirms the continuing validity and adequate performance of each model over time. These techniques and other controls are applied to mitigate potential issues and to help ensure that the models continue to perform acceptably.

Outcomes Analysis and Back-Testing

Once models are validated, approved and in use, they are subject to regular revalidation and ongoing monitoring and outcomes analysis. 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. To ensure that variances remain within the defined tolerance range, actions such as model review and parameter recalibration are taken. Performance is assessed by analyzing model overrides and tests conducted during model development. This analysis serves to confirm the validity of a model's performance over time, which helps to ensure that appropriate controls are in place in order to address identified issues and enhances a model's overall performance.

All models used within BMO are subject to validation and ongoing monitoring, and are used in accordance with our framework. The Framework applies to a wide variety of models, ranging from market, credit and operational risk models to stress testing, pricing and valuation and anti-money laundering models. We highlight a few key applications of this framework below:

Credit Risk – The Model Risk Guidelines include clear requirements for the back-testing of all credit risk rating models. The process for back-testing the probability of default (PD) model computations includes comparing PD estimates generated by credit risk models to the actual or realized default rates across borrower ratings. This process also includes examining statistical evidence to confirm that default rates accurately capture sampling variability over time. The PD credit risk models are subject to quarterly performance monitoring. This comprehensive monitoring involves prescribed tests and analyses that assess discriminatory power, calibration and population stability. Overall model performance assessment is based on all individual testing results, as well as other qualitative considerations, such as user feedback, performance trends and mitigants that are in place. The comprehensive validation of a risk rating system involves various prescribed tests and analyses that assess discriminatory power, calibration and dynamic properties, with support from migration analysis. Additional tests or analyses are used to validate borrower risk rating grades and probability of default results. This ongoing validation is conducted annually to confirm that the models are performing as intended and continue to be fit for use, and the conclusions are reported to senior management.

Judgment is applied in determining which of the various factors, such as data limitations, might affect the overall relevance of a given validation approach or interpretation of statistical analysis. Similar back-testing is applied to the loss given default and exposure at default model computations.

Trading and Underwriting Market Risk – All internal models used in determining regulatory capital and economic capital for trading and underwriting market risk have their Value at Risk (VaR) results back-tested regularly. The results of the bank's internal VaR model are back-tested daily, and the one-day 99% confidence level VaR at the local and consolidated BMO levels is compared to the realized theoretical profit and loss (P&L) calculation, which is the daily change in portfolio value that would occur if the portfolio composition remained unchanged. If the theoretical 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 Market Risk, senior management and the Board, and are reported to our regulators. This process is used to monitor the quality and accuracy of the internal VaR model results and assist in refining overall risk measurement procedures.

Structural Market Risk – Back-testing of our structural market risk models is performed monthly and reported on quarterly. For products with a scheduled term, such as mortgages and term deposits, the model forecasts of prepayments or redemptions are compared to the actual outcomes observed. For products without a scheduled term, such as credit card loans or chequing accounts, the modelled balance run-off profiles are compared to actual balance trends.

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 risks of failure to: comply with the law (in letter or in spirit) or maintain standards of care; implement legislative 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.

BMO's success relies in part on our ability to manage our exposure to legal and regulatory risk prudently. The financial services industry is highly regulated, and we anticipate intense ongoing scrutiny from our supervisors and strict enforcement of legal and regulatory requirements as governments and regulators around the world continue with reforms intended to strengthen the stability of the financial system. Banks globally continue to be subject to fines and penalties for a number of regulatory and conduct issues. As rulemaking and supervisory expectations evolve, we monitor developments to enable BMO to respond to and implement any required changes.

Under the direction of BMO's General Counsel, our Legal and Compliance Group maintains enterprise-wide frameworks that identify, measure, 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 litigation and enforcement actions. We are subject to litigation arising in the ordinary course of business, and the unfavourable resolution of any such litigation could have a material adverse effect on our financial results and damage our reputation. We are required to disclose material litigation to which we are 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 litigation, factors considered include a case-by-case assessment of specific facts and circumstances, our past experience and the opinions of legal experts. We are currently party to litigation involving certain of our insurance products, which has been the subject of recent media attention. The court will be asked to consider new regulations recently published by the Saskatchewan government confirming that such insurance products may not be used for the purpose sought by the plaintiff. We have concluded that this litigation is not material. Another area of focus is the oversight of fiduciary risk related to any of BMO's businesses that provide products or services giving rise to fiduciary duties, as well as policies and practices that address the responsibilities of a business to a customer (including service requirements and expectations, customer suitability determinations, and 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 and includes 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 has a robust Criminal Risk Framework designed to prevent, detect, respond to and report on exposure to criminal risk using a three-lines-of-defence approach, as well as through enhanced centralized management and oversight. BMO has conducted a review of a previously announced cyber incident where fraudsters claimed to be in possession of personal and financial information of a limited number of customers. We are committed to protecting customer information and privacy, and we have worked directly with impacted customers to protect their accounts. Three related class actions have been filed against BMO on behalf of customers who allege their personal information was disclosed as a result of the cyber incident. At this time, only one of the three lawsuits is proceeding, with a certification motion scheduled for 2019. For additional information regarding BMO's operational risk management practices, including with respect to cyber security, please see Operational Risk in the Enterprise-Wide Risk Management section on page 109.

As governments globally seek to curb corruption and counter its negative effects on political stability, sustainable economic development, international trade and investment and other areas, BMO's Anti-Corruption Office, through its global program, has articulated a set of key principles and activities necessary for the effective oversight of compliance with anti-corruption legislation in jurisdictions where BMO operates. 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, BMO's Anti-Money Laundering Office is responsible for the governance, oversight and assessment of principles and procedures designed to help ensure compliance with legal and regulatory requirements and internal risk parameters related to anti-money laundering, anti-terrorist financing and sanctions measures. For additional discussion regarding BMO's operational risk management practices with respect to anti-money laundering, please see the Anti-Money Laundering section on page 110.

All of these frameworks reflect the three-lines-of-defence operating model described previously. The operating groups and Corporate Support areas manage day-to-day risks by complying with corporate policies and standards, while Legal and 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 other Corporate Support areas, Legal and Compliance assesses and analyzes the implications of regulatory changes. We devote substantial resources to the implementation of systems and processes required to comply with new regulations while also helping us meet the needs and demands of our customers. Failure to comply with applicable legal and regulatory requirements may result in litigation, 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.

Our ethical culture influences how we conduct ourselves, enabling us to deliver positive outcomes for our customers and contribute to the orderly operation of financial markets. Misconduct is behaviour that falls short of legal, professional, internal conduct and ethical standards. Our management approach to culture and conduct is centred on the key themes of our people, customers and markets. We manage and mitigate the potential for misconduct through various risk management processes and procedures using their information and insights to develop an enterprise perspective.

We continue to respond to other global regulatory developments, including capital and liquidity requirements under the Basel Committee on Banking Supervision (BCBS) global standards (Basel III), which we expect will put upward pressure on the amount of capital we are required to hold over time. Other global regulatory developments include over-the-counter (OTC) derivatives reform, consumer protection measures and specific financial reforms, such as the *Dodd-Frank Wall Street Reform and Consumer Protection Act* (Dodd-Frank), which are discussed in further detail below. For additional discussion of the regulatory developments relating to capital management and liquidity and funding risk, please refer to the Enterprise-Wide Capital Management section starting on page 69 and the Liquidity and Funding Risk section starting on page 100. For additional discussion of the impact of certain potential changes in fiscal policy and tax legislation on our results, please see Critical Accounting Estimates – Income Taxes and Deferred Tax Assets on page 119, Tax Legislation and Interpretations on page 80 and General Economic Conditions and Fiscal and Monetary Policies in the Countries in Which We Conduct Business on page 80.

Bank Resolution and Bail-In – In June 2016, legislation required to implement a Bank Recapitalization (Bail-In) Regime was passed by the Canadian government in order to enhance Canada's bank resolution capabilities, in line with international efforts in this area. Final regulations implementing the Bail-In Regime took effect in September 2018. The related total loss-absorbing capacity (TLAC) requirements take effect in November 2021. For additional discussion of the Bail-In Regime and TLAC requirements, please refer to the Enterprise-Wide Capital Management section starting on page 69 and the Liquidity and Funding Risk section starting on page 100.

Housing Market Reforms – In October 2017, OSFI published the final version of Guideline B-20 – Residential Mortgage Underwriting Practices and Procedures. The revised Guideline came into effect on January 1, 2018. The revisions reinforce OSFI's expectation that banks and other federally regulated mortgage lenders remain vigilant in their mortgage underwriting practices, with a focus on the minimum qualifying rate for uninsured mortgages, expectations related to loan-to-value (LTV) frameworks and limits, and restrictions on transactions designed to circumvent those LTV limits.

Federal Financial Sector Legislation – In October 2018, in connection with its previously tabled budget, the government of Canada introduced legislation: amending the *Bank Act* to strengthen the financial consumer protection framework, with enhancements in the areas of corporate governance, responsible business conduct, disclosure and customer redress; amending the *Financial Consumer Agency of Canada Act* to strengthen the mandate and powers of the Financial Consumer Agency of Canada; and enacting the *Pay Equity Act* to redress systemic gender-based discrimination by requiring federal public and private sector employers to establish and maintain a pay equity plan within set time frames. Implementing regulations are still required, regarding earlier amendments to the *Bank Act*, which would allow banks to undertake broader financial technology activities.

U.S. Regulatory Reform – 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, and changes to certain exemptions to restrictions on proprietary trading and the ownership and sponsorship of private investment funds by banks and their affiliates. The bank continues to monitor EGRRCP rulemaking activities by applicable agencies.

Other Regulatory Initiatives Impacting Financial Services in Canada – Federal and provincial regulators continue to focus on issues relating to consumer protection, including with respect to seniors and retail investors, OTC derivatives and advisor conduct. Recent amendments to federal privacy legislation set out privacy breach reporting requirements. For additional discussion regarding privacy, please see the Risks That May Affect Future Results – Top and Emerging Risks That May Affect Future Results – Cyber Security, Information Security and Privacy Risk section in the Enterprise-Wide Risk Management section on page 79.

Derivatives Reform – G20 jurisdictions continue to implement new regulations as part of the OTC derivatives regulatory reform program. Margin requirements for non-centrally cleared derivatives have been adopted in a number of jurisdictions, including Canada, the European Union, Hong Kong, Singapore and the United States. Margin rules will require the exchange of variation margin and initial margin, both of which are designed to secure performance on non-centrally cleared derivatives transactions between covered entities. BMO has been subject to variation margin rules since March 1, 2017, and will be subject to initial margin rules beginning September 1, 2019. In a number of jurisdictions, OTC derivatives transactions must now be reported to designated trade repositories, and clearing, execution and business conduct regulations continue to be implemented. BMO is preparing for the impact of these rules and requirements.

United Kingdom and European Union Regulatory Reform – The political and legislative processes continue with respect to the United Kingdom's (U.K.'s) withdrawal from the European Union (EU). The General Data Protection Regulation came into effect in the EU in May 2018, establishing guidelines for the collection, processing and management of personal information of individuals within the EU. Effective December 2019, the U.K.'s Prudential Regulation Authority and Financial Conduct Authority will extend the senior managers and certification regime to all regulated firms. The London Interbank Offered Rate (LIBOR), Euro Interbank Offered Rate and other rates and indices are the subject of national, international and other regulatory guidance and proposals for reform. For additional discussion regarding the impact of the United Kingdom's withdrawal from the EU and benchmark reform, please see Risks That May Affect Future Results – Other Factors That May Affect Future Results – Regulatory Requirements and Benchmark Interest Rate Reform, respectively, in the Enterprise-Wide Risk Management section on pages 80 and 81.

The General Counsel and the Chief Compliance Officer regularly report to the Audit and Conduct Review Committee (ACRC) of the Board 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 legal and regulatory requirements. The Program directs operating groups and Corporate Support areas to maintain compliance policies, procedures and controls that meet these requirements. Under the direction of the Chief Compliance Officer, we identify and report on gaps and deficiencies, and track remedial action plans. The Chief Anti-Money Laundering Officer also regularly reports to the ACRC.

All BMO employees must complete annual 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.

Business Risk

Business risk arises from the specific business activities of an enterprise and the effects these could have on its earnings.

Business risk encompasses the potential causes of earnings volatility that are distinct from credit, market or operational risk factors. The management of business risk identifies and addresses factors related to the risk that volumes will decrease or margins will shrink without the enterprise having the ability to compensate for these developments by cutting costs.

BMO faces many risks that are similar to those faced by non-financial firms, principally that our profitability, and hence value, may be eroded by changes in the business environment or by failures of strategy or execution. Sources of these risks include, but are not limited to, changing client expectations, heightened competition, technology driver changes, adverse business developments and relatively ineffective responses to industry changes. For example, client retention can be influenced by a number of factors, including service levels, prices for products and services, delivery platforms, ease of access to products and services, the quality of the customer experience, our reputation and the actions of our competitors.

Within BMO, each operating group is responsible for controlling its respective business risk by assessing, managing and mitigating the risks arising from changes in business volumes and cost structures, among other factors.

Strategic Risk

Strategic risk is the potential for loss due to changes in the external business environment and/or failure to respond appropriately to these changes as a result of inaction, ineffective strategies or poor implementation of strategies.

Strategic risk arises from external risks inherent in the business environment within which BMO operates, as well as from the potential for loss if BMO is 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 Office of Strategic Management (OSM) oversees our strategic planning process and works with the lines of business, along with ERPM, Finance and Corporate Support areas, to identify, monitor and mitigate strategic risk across the enterprise. Our rigorous strategic management framework encourages a consistent approach in developing strategies and incorporates information linked to financial commitments.

The OSM 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, such as broad industry trends and the actions of competitors, are considered as part of this process and inform strategic decisions within each of our lines 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.

Our ability to execute on the strategic plans developed by management influences our financial performance. If these strategic plans do not meet with success or if there is a change in the strategic plans, our earnings could grow at a slower pace or decline. 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 monitored closely in order to identify any significant emerging risk issues.

Environmental and Social Risk

Environmental and social risk is the potential for loss or damage resulting from environmental or social concerns related to BMO or its customers. Environmental and social risk is often associated with credit, operational and reputation risk.

Environmental and social risk involves a broad spectrum of issues, such as climate change, biodiversity, ecosystem health, pollution, waste and the unsustainable use of water and other resources, as well as risks to the livelihoods, health, human rights and cultural heritage of communities.

Our Sustainability Principles are the guidelines we follow as a responsibly managed bank that considers environmental, social and governance (ESG) issues as we pursue sustainable growth. These principles contribute to a deeper sense of responsibility that informs all aspects of our business strategy.

BMO's Sustainability Council, chaired by BMO's General Counsel, is comprised of senior leaders from business and Corporate Support areas across our organization, and provides oversight and leadership for our sustainability strategy.

The Sustainability Office is responsible for coordinating the development and maintenance of an enterprise-wide strategy that meets BMO's overarching environmental and social responsibilities. The Sustainability Office works in partnership with the lines of business and Corporate Support areas to manage environmental and social risk within our business, and works with external stakeholders to better understand the consequences and impacts of our operations and financing decisions.

BMO's Procurement and Corporate Real Estate groups are responsible for establishing environmental management processes. Within Corporate Real Estate, the Environmental Sustainability group is responsible for establishing and maintaining an operational environmental management system that is aligned with the framework set out in ISO 14001, and for setting objectives and targets that are related to aligning the bank's operations with its Environmental Policy.

As part of our enterprise risk management framework and credit risk management framework, we evaluate the environmental and social risk associated with credit and counterparty transactions and exposures. We have developed and implemented specific financing guidelines to address environmental and social risks for specific lines of business. To limit our potential exposure to clients' environmental risks, we apply enhanced due diligence to transactions with clients operating in environmentally sensitive industry sectors, and we avoid doing business with borrowers that have poor environmental and social risk management track records. BMO has been a signatory to the Equator Principles since 2005 and applies its credit risk management framework to identify, assess and manage the environmental and social risk of transactions within its scope. We also apply environmental and social screening procedures to categorize and assess projects based on the magnitude of their potential impacts and risks. These principles have been integrated into our credit risk management framework.

We are a long-standing signatory to and participant in the Carbon Disclosure Project – a global initiative that gathers and publishes corporate disclosure on greenhouse gas emissions and climate change. We also support the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), and we continue to investigate and assess climate-related risks and improve our climate-related disclosures.

BMO is a signatory to the United Nations Principles for Responsible Investment, a framework that encourages sustainable investing through the integration of ESG considerations into investment, decision-making and ownership practices. We are a partner in the Carbon Pricing Leadership Coalition, a voluntary initiative that supports the effective implementation of carbon pricing around the world.

We consider the impact our decisions have on our stakeholders. Our Board-approved Code of Conduct reflects our commitment to manage our business responsibly. We expect our suppliers to be aware of, understand and respect the principles of our Supplier Code of Conduct, which outlines our standards for integrity, fair dealing and sustainability. We publicly report under the United Kingdom *Modern Slavery Act 2015*, and our Supplier Code of Conduct reflects this legislation.

To keep informed of emerging issues, we participate in global forums with our peers, maintain an open dialogue with our internal and external stakeholders, and monitor and evaluate policy and legislative changes in the jurisdictions in which we operate. We publicly report on our environmental and social performance and targets in our annual Environmental, Social and Governance (ESG) Report and Public Accountability Statement (PAS), and on our website at https://www.bmo.com/home/about/banking/corporate-responsibility/our-approach/reporting#esg_pas. Selected environmental and social indicators in the ESG Report and PAS are assured by a third party.

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.

BMO's reputation is built on our commitment to high standards of business conduct and ethics, 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 maintain customer 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, 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.

Our corporate governance practices and enterprise risk management framework have various controls in place that support the management of risks to our reputation. We seek to identify activities or events that could impact our reputation, including events with large-scale impact through the media or otherwise. 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 is responsible for enterprise-wide reporting on our corporate culture and our employees' conduct, and reports on cases of misconduct 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; provisions for income taxes and deferred tax asset; goodwill, 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, respectively, on pages 164 and 165 of the consolidated financial statements. Note 17 on page 184 of the consolidated financial statements discusses the judgments made in determining the fair value of financial instruments. If actual results were to differ from our estimates, the impact would be recorded in future periods. We have established detailed policies and control procedures that are intended to ensure the judgments we make in estimating these amounts are well controlled, independently reviewed and consistently applied from period to period. We believe that our estimates of the value of BMO's assets and liabilities are appropriate.

For a more detailed discussion of the use of estimates, please see Note 1 on page 148 of the consolidated financial statements.

Allowance for Credit Losses

The allowance for credit losses (ACL) consists of allowances for impaired loans, which represent estimated losses related to impaired loans in the portfolio provided for but not yet written off, and allowances for 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 for performing loans is based on the requirements of IFRS, considering the guideline issued by OSFI. 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 up to 12 months of ECL is recorded. Significant increase in credit risk is based on the change in PD between the reporting date and origination. We may apply experienced credit judgment to reflect factors not captured in the results produced by the ECL models. We have controls and processes in place to govern the ECL process including judgments and assumptions used in the determination of the allowance for performing loans. These judgments and assumptions will change over time, and the impact of the change will be recorded in future periods.

In establishing our allowance for performing loans, we attach probability weightings to three economic scenarios, which are representative of our view of forecast economic conditions – a base case scenario, which in our view represents the most probable outcome, and is described below, as well as benign and adverse scenarios, all developed by our Economics group. The adverse scenario is also described below given the focus on such a scenario at this point of the economic cycle. 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.

Our base case economic forecast depicts a Canadian economy that grows by a moderate 1.7% on average over the forecast period, similar to long-run potential growth, reducing the unemployment rate slightly to 5.6% in 2020. The U.S. economy grows moderately faster than Canada, averaging 2.1% over the forecast period, due to the near-term fiscal stimulus. 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 $1,250 million as at October 31, 2018, compared with the reported allowance for performing loans of $1,473 million.

Our adverse case economic forecast depicts a typical recession in Canada and the United States occurring in the first year of our forecast horizon that involves the economy contracting approximately 3% over five quarters and the unemployment rate rising more than 3 percentage points to 9.5% in Canada and 7.0% in the U.S. This is followed by a slow recovery initially, then more moderate growth towards the end of the projection period. 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 $2,650 million as at October 31, 2018, compared with the reported allowance for performing loans of $1,473 million. 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 those weightings will change through time.

The following table shows the key economic variables we use to estimate our allowance for performing loans during the forecast period. The values shown represent the end of period national average values for the first 12 months and then the national average for the remaining horizon. While the values disclosed below are national variables, in our underlying models we use regional variables where considered appropriate.

	Benign scenario		Base case scenario		Adverse scenario	
As at October 31, 2018	First 12 months	Remaining horizon (1)	First 12 months	Remaining horizon (1)	First 12 months	Remaining horizon (1)
Real gross domestic product growth rates (2)						
Canada	3.1%	2.4%	1.8%	1.6%	(3.2)%	0.8%
United States	2.9%	1.9%	2.4%	1.6%	(2.9)%	0.9%
Corporate BBB 10-year spread						
Canada	2.0%	2.1%	2.3%	2.3%	4.7%	3.9%
United States	1.8%	2.0%	2.2%	2.3%	4.3%	3.5%
Unemployment rates						
Canada	5.4%	5.2%	5.6%	5.6%	9.3%	9.3%
United States	3.2%	3.1%	3.6%	3.7%	6.7%	6.8%
Housing price index						
Canada (3)	2.4%	2.6%	1.4%	1.8%	(12.8)%	(3.2)%
United States (4)	5.1%	4.3%	3.6%	3.0%	(7.3)%	(1.2)%

(1) The remaining forecast period is two years.
(2) Real gross domestic product is based on year-over-year growth.
(3) In Canada, we use the HPI Benchmark Composite.
(4) In the United States, we use the National Case-Shiller House Price Index.

The ECL approach requires the recognition of credit losses based on up to 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 $1,000 million, compared with the reported allowance for performing loans of $1,473 million.

Our provision for credit losses in 2018 was $662 million, comprised of $700 million on impaired loans and a recovery of $38 million on performing loans. Our total allowance for performing and impaired loans at October 31, 2018, was $1,870 million. 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 on page 87, as well as in Note 4 on page 157 of the consolidated financial statements.

Financial Instruments Measured at Fair Value

BMO records trading securities, fair value through profit and loss securities, fair value through other comprehensive income securities and derivatives and certain other assets and liabilities are designated under the fair value option at fair value. Fair value represents our 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 securities, derivative assets and liabilities, and liabilities recorded at fair value as at October 31, 2018, as well as a sensitivity analysis of our Level 3 financial instruments, is disclosed in Note 17 on page 184 of the consolidated financial statements.

Our valuation models use general assumptions and market data, and therefore do not reflect the specific risks and other factors that could affect a particular instrument's fair value. Valuation Product Control (VPC), a group independent of the trading lines of business, ensures that the fair values at which financial instruments are recorded are materially accurate by:

- Developing and maintaining valuation policies and procedures in accordance with regulatory requirements and IFRS;
- Establishing official rate sources for valuation of all portfolios; and
- Providing independent review of portfolios for which prices supplied by traders are used for valuation.

For instruments that are valued using models, VPC identifies situations in which valuation adjustments must be made to the model estimates in order to arrive at fair value. As a result, we incorporate certain adjustments when using internal models to establish fair values. These fair value adjustments take into account the estimated impact of credit risk, liquidity risk and other items, including closeout costs. For example, the credit risk valuation adjustment for derivative financial instruments incorporates credit risk into our determination of fair values by taking into account factors such as the counterparty's credit rating, the duration of the instrument and changes in credit spreads. We also incorporate an estimate of the implicit funding costs borne by BMO for over-the-counter derivative positions (the funding valuation adjustment).

The methodologies used for calculating these adjustments are reviewed on an ongoing basis to ensure that they remain appropriate. Significant changes in methodologies are made only when we believe that a change will result in better estimates of fair value.

The Valuation Steering Committee is BMO's senior management valuation committee. It meets at least monthly to address the more challenging material valuation issues related to BMO's portfolios, approves valuation adjustments and methodology changes, and acts as a key forum for the discussion of positions categorized as Level 3 for financial reporting purposes and their inherent uncertainty.

Valuation Adjustments

(Canadian $ in millions)

As at October 31	2018	2017
Credit risk	**55**	63
Funding risk	**19**	15
Liquidity risk	**79**	33
Total	**153**	111

Valuation adjustments increased in 2018, primarily due to the increased size of the trading book.

Pension and Other Employee Future Benefits

Our pension and other employee future benefits expense is calculated by independent actuaries using assumptions determined by management. If actual experience were to differ from the assumptions used, the difference would be 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 our plans using high-quality corporate bonds with terms matching the plans' specific cash flows.

Additional information regarding our accounting for pension and other employee future benefits, including a sensitivity analysis for key assumptions, is included in Note 21 on page 194 of the consolidated financial statements.

Impairment of Securities

We have investments in associates and joint ventures, which are classified as other securities. We review other securities at each quarter-end reporting period to identify and evaluate instruments 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 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 our accounting for debt securities measured at amortized cost or FVOCI and other securities, allowance for credit losses and the determination of fair value is included in Note 3 on page 153 and Note 17 on page 184 of the consolidated financial statements.

Income Taxes and Deferred Tax Assets

Our approach to tax is governed by our tax risk management framework, which is implemented through internal controls and processes. We actively seek to identify, evaluate, monitor and manage any tax risks that may arise to ensure our financial exposure is well understood and is within a level consistent with our objectives for the management of tax risk, as set out in our tax risk management framework. Our intention is to comply fully with tax laws. We consider all applicable laws in connection with our commercial activities, and where tax laws change in our business or for our customers, we adapt and change. We do not knowingly do business with customers we believe are transacting with us to evade taxes. We are committed to maintaining productive relationships and cooperating with taxing authorities in all tax matters. We seek to resolve disputes in a collaborative manner; however, where our interpretation of tax law differs from that of taxing 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 our Consolidated Statement of Income or our 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 taxing 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 may be utilized. We are required to assess whether it is probable that our deferred income 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. Changes in our assessment of these factors could increase or decrease our provision for income taxes in future periods.

If income tax rates increase or decrease in future periods in a jurisdiction, our provision for income taxes for future periods will increase or decrease accordingly. Furthermore, our 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, the reduction in the U.S. federal tax rate from 35% to 21% as a result of the enactment of the U.S. *Tax Cuts and Jobs Act* (Act) resulted in a $425 million one-time non-cash tax charge to our net income in 2018 and a corresponding reduction in our net deferred tax assets. In addition, U.S. tax reform increased our annual net income by approximately US$100 million. Since its enactment, we have been monitoring the release of guidance to assist in interpreting the Act. Guidance on tax base broadening measures is expected to be released later in 2018, or early in 2019. We will reflect the impact, if any, in the period in which the applicable guidance is released.

In fiscal 2018, we were reassessed by the Canada Revenue Agency (CRA) for additional income taxes and interest in an amount of approximately $169 million in respect of certain 2013 Canadian corporate dividends. In prior fiscal years, we were reassessed for additional income taxes and interest of approximately $116 million and $76 million, respectively, for certain 2012 and 2011 Canadian corporate dividends. In its reassessments, the CRA denied dividend deductions on the basis that the dividends were received as part of a "dividend rental arrangement". The tax rules raised by the CRA in its reassessments were prospectively addressed in the 2015 and 2018 Canadian federal budgets. In the future, it is possible that we may be reassessed for significant additional income taxes for similar activities in 2014 and subsequent years. We remain of the view that our tax filing positions were appropriate and intend to challenge any reassessment. If our challenge is unsuccessful, the additional expense would negatively impact our net income.

Additional information regarding our accounting for income taxes is included in Note 22 on page 198 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 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 our CGUs in a different manner. Management must exercise judgment and make assumptions in determining fair value, and differences in judgments and assumptions could affect the determination of fair value and any resulting impairment write-down. At October 31, 2018, the estimated fair value of each of our CGUs was greater than its 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 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, we write it 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 on page 176 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 be the result of a change in the assumption for future investment yields.

Additional information on insurance-related liabilities is provided in Note 14 on page 179 of the consolidated financial statements, and information on insurance risk is provided on page 100.

Provisions

BMO and its subsidiaries are involved in various legal actions in the ordinary course of business.

Provisions are recorded at the best estimate of the amount required to settle any obligation related to these legal actions as at the balance sheet date, taking into account the risks and uncertainties surrounding the obligation. Factors considered in making the estimate include a case-by-case assessment of specific facts and circumstances, our past experience and the opinions of legal experts. Management and internal and external experts are involved in estimating any amounts that may be required. The actual costs of resolving these claims may be substantially higher or lower than the amounts of the provisions.

Additional information regarding provisions is provided in Note 24 on page 201 of the consolidated financial statements.

Transfers of Financial Assets and Consolidation of Structured Entities

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. 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. Since 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 in our Consolidated Balance Sheet. Additional information concerning the transfer of financial assets is included on page 76, as well as in Note 6 on page 164 of the consolidated financial statements.

In the normal course of business, BMO enters into arrangements with SEs. We are required to consolidate an SE if we determine that we control the SE. We control an SE when we have power over the entity, exposure or rights to variable returns from our investment and the ability to exercise power to affect the amount of our returns.

Additional information concerning BMO's interests in SEs is included on page 77, as well as in Note 7 on page 165 of the consolidated financial statements.

Caution

This Critical Accounting Estimates section contains forward-looking statements. Please see the Caution Regarding Forward-Looking Statements.

Changes in Accounting Policies in 2018

Effective November 1, 2017, we prospectively adopted IFRS 9 *Financial Instruments* (IFRS 9), which addresses impairment, classification and measurement, and hedge accounting. The impact on shareholders' equity at November 1, 2017 was an increase of $70 million ($44 million after-tax) related to the impairment requirements of the standard. Prior periods have not been restated.

Impairment

IFRS 9 introduces a new single expected credit loss (ECL) impairment model for all financial assets and certain off-balance sheet loan commitments and guarantees. The ECL model results in an allowance for credit losses being recorded on financial assets, regardless of whether there has been an actual loss event. This differs from our previous approach, where the allowance recorded on performing loans is designed to capture only losses that have been incurred whether or not they have been specifically identified.

Classification and Measurement

IFRS 9 requires that we classify debt instruments based on our business model for managing the assets and the contractual cash flow characteristics of the asset. Equity instruments are measured at fair value through profit or loss unless we elect to measure at fair value through other comprehensive income.

Hedge Accounting

IFRS 9 introduces a new hedge accounting model that expands the scope of hedged items and risks eligible for hedge accounting and aligns hedge accounting more closely with risk management. The new model no longer specifies quantitative measures for effectiveness testing and does not permit hedge de-designation. Consistent with a policy choice allowed in IFRS 9, we have elected to continue to apply the existing hedge accounting rules.

Notes 1 and 28 on pages 148 and 207, respectively, of the consolidated financial statements, provide further details on the impact of the new standard.

Future Changes in Accounting Policies

BMO monitors the potential changes to IFRS proposed by the International Accounting Standards Board (IASB) and analyzes the effects that any such changes to the standards may have on BMO's financial reporting and accounting policies. New standards and amendments to existing standards that will be effective for BMO in future reporting periods are described in Note 1 on page 148 of the consolidated financial statements.

Transactions with Related Parties

In the ordinary course of business, we provide banking services to our key management personnel on the same terms that we offer these services to our 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. We provide banking services to our joint ventures and equity-accounted investees on the same terms offered to our customers for these services. We also offer employees a subsidy on annual credit card fees.

Details of our investments in joint arrangements and associates and the compensation of key management personnel are disclosed in Note 27 on page 206 of the consolidated financial statements.

MANAGEMENT'S DISCUSSION AND ANALYSIS

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: (i) the quality of the services provided by the engagement team of the shareholders' auditors during the audit period; (ii) the relevant qualifications, experience and geographical reach to serve BMO Financial Group; (iii) the quality of communications received from the shareholders' auditors; and (iv) 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 risky 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; and
- 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 of Canada) and the CPAB.

In 2018, 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 and audit performance. In 2015, the ACRC completed a periodic comprehensive review of the shareholders' auditors. The comprehensive review was based on the recommendations of the CPA of Canada and the 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 these reviews, the ACRC was satisfied with the performance of the shareholders' auditors.

Independence of the shareholders' auditors is overseen by the ACRC in accordance with our 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 our policy limiting the services provided by the shareholders' auditors that are not related to their role as auditors. 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 and the services to be provided are presented to the ACRC for ratification at its next meeting. All services must comply with our Auditor Independence Standard, as well as professional standards and securities regulations governing auditor independence.

Shareholders' Auditors' Fees

Aggregate fees paid to the shareholders' auditors during the fiscal years ended October 31, 2018 and 2017 were as follows:

(Canadian $ in millions)

Fees (1)	**2018**	2017
Audit fees	**18.2**	19.1
Audit-related fees (2)	**2.2**	2.5
All other fees (3)	**2.1**	2.1
Total	**22.5**	23.7

(1) The classification of fees is based on applicable Canadian securities laws and U.S. Securities and Exchange Commission definitions.
(2) Audit-related fees for 2018 and 2017 relate to fees paid for accounting advice, specified procedures on our Proxy Circular and other specified procedures.
(3) All other fees for 2018 and 2017 relate primarily to fees paid for reviews of compliance with regulatory requirements for financial information and reports on internal controls over services provided by various BMO Financial Group businesses. They also include the costs of translation services.

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, 2018, under the supervision of the CEO and the CFO, Bank of Montreal's management evaluated the effectiveness of the design and operation of our 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 our disclosure controls and procedures were effective, as at October 31, 2018.

Internal Control over Financial Reporting

Internal control over financial reporting is a process designed under the supervision of the bank's CEO and CFO, in order to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements in accordance with IFRS. Management is responsible for establishing and maintaining adequate internal control over financial reporting for Bank of Montreal.

Bank of Montreal's internal control over financial reporting includes policies and procedures that:

(i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of Bank of Montreal;

(ii) 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 that receipts and expenditures of Bank of Montreal are being made only in accordance with authorizations by management and directors of Bank of Montreal; and

(iii) are designed to provide reasonable assurance that any unauthorized acquisition, use or disposition of Bank of Montreal's assets which 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.

Bank of Montreal'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, 2018.

At the request of Bank of Montreal'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, Bank of Montreal maintained, in all material respects, effective internal control over financial reporting as at October 31, 2018, in accordance with the criteria established in the 2013 COSO Framework. This audit report appears on page 141.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the year ended October 31, 2018 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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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 the EDTF for the provision of high-quality, transparent risk disclosures.

Disclosures related to the EDTF recommendations are detailed below.

General

1 Present all risk-related information in the Annual Report, Supplementary Financial Information and Supplementary Regulatory Capital Disclosure, and provide an index for easy navigation.

Annual Report: Risk-related information is presented in the Enterprise-Wide Risk Management section on pages 78 to 116.

Supplementary Financial Information: A general index is provided, as well as a detailed Pillar 3 index (pages 34 to 35), in our Supplementary Financial Information.

2 Define the bank's risk terminology and risk measures and present key parameters used.

Annual Report: Specific risk definitions and key parameters underpinning BMO's risk reporting are provided on pages 87 to 116.

A glossary of financial terms (including risk terminology) can be found on pages 210 to 211.

3 Discuss top and emerging risks for the bank.

Annual Report: BMO's top and emerging risks are discussed on pages 79 to 81.

4 Outline plans to meet new key regulatory ratios once the applicable rules are finalized.

Annual Report: We outline BMO's plans to meet new regulatory ratios on pages 71 and 106.

Risk Governance

5 Summarize the bank's risk management organization, processes, and key functions.

Annual Report: BMO's risk management organization, processes and key functions are summarized on pages 82 to 87.

6 Describe the bank's risk culture.

Annual Report: BMO's risk culture is described on page 84.

7 Describe key risks that arise from the bank's business model and activities.

Annual Report: A diagram of BMO's risk exposure by operating segment is provided on page 74 and descriptions of key risks arising from the bank's business models and activities are provided on pages 82 to 83 and 85 to 87.

8 Describe the use of stress testing within the bank's risk governance and capital frameworks.

Annual Report: BMO's stress testing process is described on page 86.

Capital Adequacy and Risk-Weighted Assets (RWA)

9 Provide minimum Pillar 1 capital requirements.

Annual Report: Pillar 1 capital requirements are described on pages 69 to 73.

Supplementary Financial Information: Regulatory capital is disclosed on pages 36 and 38.

10 Summarize information contained in the composition of capital templates adopted by the Basel Committee.

Annual Report: An abridged version of the regulatory capital template is provided on page 72.

Supplementary Financial Information: Pillar 3 disclosure is provided on pages 36 to 37 and 40. A Main Features template can be found on BMO's website at www.bmo.com under Investor Relations and Regulatory Filings.

11 Present a flow statement of movements in regulatory capital, including changes in Common Equity Tier 1, Additional Tier 1, and Tier 2 capital.

Supplementary Financial Information: Regulatory capital flow statement is provided on page 39.

12 Discuss capital planning within a more general discussion of management's strategic planning.

Annual Report: BMO's capital planning process is discussed under Capital Management Framework on page 69.

13 Provide granular information to explain how RWA relate to business activities.

Annual Report: A diagram of BMO's risk exposure, including RWA by operating group, is provided on page 74.

Supplementary Financial Information: RWA by operating group is provided on page 39.

14 Present a table showing the capital requirements for each method used for calculating RWA.

Annual Report: Regulatory capital requirement, as a percentage of RWA, is outlined on pages 70 and 71.

Information about significant models used to determine RWA is provided on pages 88 to 91.

Supplementary Financial Information: A table showing RWA by model approach and by risk type is provided on page 40.

15 Tabulate credit risk in the banking book for Basel asset classes.

Supplementary Financial Information: Wholesale and retail credit exposures by internal rating grades are provided on pages 45 and 51.

16 Present a flow statement that reconciles movements in RWA by credit risk and market risk.

Supplementary Financial Information: RWA flow statements are provided on page 46.

17 Describe the bank's Basel validation and back-testing process.

Annual Report: BMO's Basel validation and back-testing process for credit and market risk is described on pages 111 to 112.

Supplementary Financial Information: A table showing estimated and actual loss parameters is provided on page 57. The results of IRB back-testing of probability of default per portfolio is provided on page 58.

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Liquidity

18 **Describe how the bank manages its potential liquidity needs and the liquidity reserve held to meet those needs.**

Annual Report: BMO's potential liquidity needs and the liquidity reserve held to meet those needs are described on pages 100 to 105.

Funding

19 **Summarize encumbered and unencumbered assets in a table by balance sheet category.**

Annual Report: An Asset Encumbrance table is provided on page 103.

Supplementary Financial Information: The Asset Encumbrance table by currency is provided on page 33.

20 **Tabulate consolidated total assets, liabilities and off-balance sheet commitments by remaining contractual maturity.**

Annual Report: A Contractual Maturities table is provided on pages 107 to 108.

21 **Discuss the bank's sources of funding and describe the bank's funding strategy.**

Annual Report: BMO's sources of funding and funding strategy are described on pages 104 to 105.

A table showing the composition and maturity of wholesale funding is provided on page 105.

Market Risk

22 **Provide a breakdown of balance sheet positions into trading and non-trading market risk measures.**

Annual Report: A table linking balance sheet items to market risk measures is provided on page 99.

23 **Provide qualitative and quantitative breakdowns of significant trading and non-trading market risk measures.**

Annual Report: Trading market risk exposures are described and quantified on pages 95 to 97.

Structural (non-trading) market risk exposures are described and quantified on pages 98 to 99.

24 **Describe significant market risk measurement model validation procedures and back-testing and how these are used to enhance the parameters of the model.**

Annual Report: Market risk measurement model validation procedures and back-testing for trading market risk and structural (non-trading) market risk are described on pages 111 to 112.

25 **Describe the primary risk management techniques employed by the bank to measure and assess the risk of loss beyond reported risk measures.**

Annual Report: The use of stress testing, scenario analysis and stressed VaR for market risk management is described on pages 95 to 97.

Credit Risk

26 **Provide information about the bank's credit risk profile.**

Annual Report: Information about BMO's credit risk profile is provided on pages 87 to 94 and in Note 4 on pages 158 to 164 of the consolidated financial statements.

Supplementary Financial Information: Tables detailing credit risk information are provided on pages 18 to 29 and 41 to 56.

27 **Describe the bank's policies related to impaired loans and renegotiated loans.**

Annual Report: Impaired loan and renegotiated loan policies are described in Note 4 on pages 158 and 163, respectively of the consolidated financial statements.

28 **Provide reconciliations of impaired loans and the allowance for credit losses.**

Annual Report: Continuity schedules for gross impaired loans acceptances, and allowance for credit losses are provided on pages 91 to 92 and Note 4 on pages 161 to 162 of the consolidated financial statements, respectively.

29 **Provide a quantitative and qualitative analysis of the bank's counterparty credit risk that arises from its derivative transactions.**

Annual Report: Quantitative disclosures on collateralization agreements for over-the-counter (OTC) derivatives are provided on page 94 and qualitative disclosures are provided on page 88.

Supplementary Financial Information: Quantitative disclosures for derivative instruments are provided on page 30 and pages 49 to 53.

30 **Provide a discussion of credit risk mitigation.**

Annual Report: A discussion of BMO's credit and counterparty risk management is provided on pages 87 to 88. Collateral management discussions are provided on page 88 and in Note 8 on pages 168, 170 and 173 and in Note 24 on page 202 of the consolidated financial statements.

Supplementary Financial Information: Information on credit risk mitigation techniques is provided on page 43 and on collateral for counter-party credit risk is provided on page 52.

Other Risks

31 **Describe other risks and discuss how each is identified, governed, measured and managed.**

Annual Report: Diagrams illustrating the risk governance process that supports BMO's risk culture and the risk types are provided on pages 82 and 87. Other risks are discussed on pages 109 to 116.

32 **Discuss publicly known risk events related to other risks, where material or potentially material loss events have occurred.**

Annual Report: Other risks are discussed on pages 109 to 116.

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SUPPLEMENTAL INFORMATION

Supplemental Information

Certain comparative figures have been reclassified to conform to the current year's presentation and for changes in accounting policies. Refer to Note 1 of the consolidated financial statements. In addition, since November 1, 2011, BMO's financial statements have been reported in accordance with IFRS. Results for years prior to 2011 have not been restated and are presented in accordance with Canadian GAAP as defined at that time (CGAAP). As a result of these changes, certain growth rates and compound annual growth rates (CAGR) may not be meaningful.

Adjusted results in this section are non-GAAP measures. Refer to the Non-GAAP Measures section on page 27.

Table 1: Shareholder Value and Other Statistical Information

As at or for the year ended October 31	**2018**	2017	2016	2015	2014	2013	2012	2011	2010	2009
Market Price per Common Share ($)										
High	**109.00**	104.15	87.92	84.39	85.71	73.90	61.29	63.94	65.71	54.75
Low	**93.60**	83.58	68.65	64.01	67.04	56.74	53.15	55.02	49.78	24.05
Close	**98.43**	98.83	85.36	76.04	81.73	72.62	59.02	58.89	60.23	50.06
Common Share Dividends										
Dividends declared per share ($)	**3.78**	3.56	3.40	3.24	3.08	2.94	2.82	2.80	2.80	2.80
Dividend payout ratio (%)	**46.2**	44.8	49.0	49.2	47.8	47.5	46.0	57.1	58.6	90.6
Dividend yield (%)	**3.8**	3.6	4.0	4.3	3.8	4.0	4.8	4.8	4.6	5.6
Dividends declared ($ millions)	**2,424**	2,312	2,191	2,087	1,991	1,904	1,820	1,690	1,571	1,530
Total Shareholder Return (%)										
Five-year average annual return	**10.5**	15.5	12.5	9.5	15.5	17.0	4.2	1.9	5.9	1.8
Three-year average annual return	**13.3**	10.9	9.9	13.5	16.7	11.5	10.8	17.4	4.5	(5.3)
One-year return	**3.3**	20.2	17.0	(3.0)	17.1	28.8	5.2	2.4	26.4	25.1
Common Share Information										
Number outstanding (in thousands)										
End of year	**639,330**	647,816	645,761	642,583	649,050	644,130	650,730	639,000	566,468	551,716
Average basic	**642,930**	649,650	644,049	644,916	645,860	648,476	644,407	591,403	559,822	540,294
Average diluted	**644,913**	651,961	646,126	647,141	648,475	649,806	648,615	607,068	563,125	542,313
Book value per share ($)	**64.73**	61.92	59.56	56.31	48.18	43.22	39.41	36.76	34.09	31.95
Total market value of shares ($ billions)	**62.9**	64.0	55.1	48.9	53.0	46.8	38.4	37.6	34.1	27.6
Price-to-earnings multiple	**12.1**	12.5	12.3	11.6	12.8	11.8	9.7	12.2	12.7	16.3
Price-to-adjusted earnings multiple	**11.0**	12.1	11.4	10.9	12.4	11.7	9.9	11.5	12.5	12.5
Market-to-book value multiple	**1.52**	1.60	1.43	1.35	1.70	1.66	1.47	1.49	1.77	1.57
Balances ($ millions)										
Total assets	**774,048**	709,580	687,935	641,881	588,659	537,044	524,684	500,575	411,640	388,458
Average assets	**754,295**	722,626	707,122	664,391	593,928	555,431	543,931	469,934	398,474	438,548
Average net loans and acceptances	**386,959**	370,899	356,528	318,823	290,621	263,596	246,129	215,414	171,554	182,097
Return on Equity and Assets										
Return on equity (%)	**13.2**	13.3	12.1	12.5	14.0	14.9	15.9	15.1	14.9	9.9
Adjusted return on equity (%) (1)	**14.6**	13.7	13.1	13.3	14.4	15.0	15.5	16.0	15.0	12.9
Return on tangible common equity (%)	**16.2**	16.3	15.3	15.8	17.3	17.9	19.4	17.6	16.6	11.3
Adjusted return on tangible common equity (%) (1)	**17.5**	16.5	16.1	16.4	17.4	17.7	18.5	18.2	16.6	14.5
Return on average assets (%)	**0.72**	0.74	0.65	0.66	0.72	0.74	0.75	0.65	0.71	0.41
Adjusted return on average assets (%) (1)	**0.79**	0.76	0.71	0.70	0.74	0.75	0.73	0.68	0.71	0.52
Return on average risk-weighted assets (%)	**1.97**	1.99	1.71	1.84	1.85	1.93	1.96	1.70	1.74	0.97
Adjusted return on average risk-weighted assets (%) (1)	**2.16**	2.05	1.85	1.96	1.91	1.94	1.92	1.79	1.76	1.25
Average equity to average total assets (%)	**0.05**	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.04
Other Statistical Information										
Employees (2)										
Canada	**29,982**	29,647	29,643	30,669	30,587	30,303	30,797	31,351	29,821	29,118
United States	**13,943**	14,071	14,147	14,316	14,845	14,694	14,963	15,184	7,445	6,732
Other	**1,529**	1,482	1,444	1,368	1,346	634	512	440	363	323
Total	**45,454**	45,200	45,234	46,353	46,778	45,631	46,272	46,975	37,629	36,173
Bank branches										
Canada	**908**	926	942	939	934	933	930	920	910	900
United States	**571**	573	576	592	615	626	638	688	321	290
Other	**4**	4	4	4	4	4	3	3	3	5
Total	**1,483**	1,503	1,522	1,535	1,553	1,563	1,571	1,611	1,234	1,195
Automated banking machines										
Canada	**3,387**	3,315	3,285	3,442	3,016	2,900	2,596	2,235	2,076	2,030
United States	**1,441**	1,416	1,314	1,319	1,322	1,325	1,375	1,366	905	636
Total	**4,828**	4,731	4,599	4,761	4,338	4,225	3,971	3,601	2,981	2,666

2010 and prior based on CGAAP.

2011 has not been restated to reflect the new IFRS standards adopted in 2014. The adoption of new IFRS standards in 2015 and 2018 only impacted our results prospectively.

(1) The impact of adjusting items (net of tax) was an increase/(decrease) to net income as follows: 2011 – $161 million; 2010 – $32 million; 2009 – $509 million. Details on the adjusting items can be found in the 2011 to 2009 Management's Discussion and Analysis.

(2) 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	2018	2017	2016	2015	2014	5-year CAGR	10-year CAGR
Income Statement – Reported Results							
Net interest income	**10,313**	10,007	9,872	8,763	8,292	**4.0**	**7.4**
Non-interest revenue	**12,724**	12,253	11,215	10,626	9,931	**8.8**	**9.3**
Revenue	**23,037**	22,260	21,087	19,389	18,223	**6.5**	**8.4**
Insurance claims, commissions and changes in policy benefit liabilities (CCPB) (1)	**1,352**	1,538	1,543	1,254	1,505	**12.0**	**33.3**
Revenue, net of CCPB	**21,685**	20,722	19,544	18,135	16,718	**6.2**	**7.8**
Provision for credit losses	**662**	746	771	544	527	**nm**	**nm**
Non-interest expense	**13,613**	13,330	13,041	12,250	10,955	**5.8**	**7.0**
Income before provision for income taxes	**7,410**	6,646	5,732	5,341	5,236	**7.1**	**14.1**
Provision for income taxes	**1,960**	1,296	1,101	936	903	**13.2**	**nm**
Net income	**5,450**	5,350	4,631	4,405	4,333	**5.4**	**10.3**
Attributable to bank shareholders	**5,450**	5,348	4,622	4,370	4,277	**5.7**	**10.7**
Attributable to non-controlling interest in subsidiaries	**–**	2	9	35	56	**nm**	**nm**
Net income	**5,450**	5,350	4,631	4,405	4,333	**5.4**	**10.7**
Income Statement – Adjusted Results							
Net interest income	**10,313**	10,007	9,872	8,764	8,292	**5.7**	**7.4**
Non-interest revenue	**12,724**	12,253	11,299	10,627	9,931	**8.9**	**8.6**
Revenue	**23,037**	22,260	21,171	19,391	18,223	**7.4**	**8.0**
Insurance claims, commissions and changes in policy benefit liabilities (CCPB) (1)	**1,352**	1,538	1,543	1,254	1,505	**12.0**	**33.3**
Revenue, net of CCPB	**21,685**	20,722	19,628	18,137	16,718	**7.1**	**7.4**
Provision for credit losses	**662**	822	771	544	527	**nm**	**nm**
Non-interest expense	**13,480**	13,035	12,588	11,887	10,795	**6.6**	**7.0**
Income before provision for income taxes	**7,543**	6,865	6,269	5,706	5,396	**7.5**	**10.9**
Provision for income taxes	**1,564**	1,357	1,249	1,025	943	**17.7**	**nm**
Adjusted net income	**5,979**	5,508	5,020	4,681	4,453	**7.2**	**9.1**
Attributable to bank shareholders	**5,979**	5,506	5,011	4,646	4,397	**7.2**	**9.1**
Attributable to non-controlling interest in subsidiaries	**–**	2	9	35	56	**nm**	**nm**
Adjusted net income	**5,979**	5,508	5,020	4,681	4,453	**7.2**	**9.1**
Earnings per Share (EPS) ($)							
Basic	**8.19**	7.95	6.94	6.59	6.44	**5.8**	**8.0**
Diluted	**8.17**	7.92	6.92	6.57	6.41	**5.8**	**8.1**
Adjusted diluted	**8.99**	8.16	7.52	7.00	6.59	**7.7**	**8.4**
Year-over-Year Growth-Based Statistical Information (%)							
Net income growth	**1.9**	15.5	5.1	1.7	3.3	**na**	**na**
Adjusted net income growth	**8.6**	9.7	7.2	5.1	5.4	**na**	**na**
Diluted EPS growth	**3.1**	14.5	5.3	2.5	3.9	**na**	**na**
Adjusted diluted EPS growth	**10.1**	8.5	7.4	6.2	6.1	**na**	**na**

Five-year and ten-year CAGR based on CGAAP in 2008 and IFRS in 2013 and 2018.

The adoption of new IFRS standards in 2015 and 2018 only impacted our results prospectively.

(1) Beginning in 2015, insurance claims, commissions and changes in policy benefit liabilities (CCPB) are reported separately. They were previously reported as a reduction in insurance revenue in non-interest revenue. Prior years' amounts and ratios have been reclassified.

nm – not meaningful

na – not applicable

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SUPPLEMENTAL INFORMATION

Table 3: Revenue and Revenue Growth

($ millions, except as noted) For the year ended October 31	2018	2017	2016	2015	2014	5-year CAGR	10-year CAGR
Net Interest Income	**10,313**	10,007	9,872	8,763	8,292	**4.0**	**7.4**
Year-over-year growth (%)	**3.0**	1.4	12.7	5.7	(2.3)	**na**	**na**
Adjusted Net Interest Income	**10,313**	10,007	9,872	8,764	8,292	**5.7**	**7.4**
Year-over-year growth (%)	**3.0**	1.4	12.6	5.7	5.9	**na**	**na**
Net Interest Margin (1)							
Average earning assets	**682,945**	646,799	622,732	579,471	528,786	**7.1**	**7.6**
Net interest margin (%)	**1.51**	1.55	1.59	1.51	1.57	**na**	**na**
Adjusted net interest margin (%)	**1.51**	1.55	1.59	1.51	1.57	**na**	**na**
Canadian dollar net interest margin (%)	**1.75**	1.64	1.66	1.67	1.81	**na**	**na**
U.S. dollar and other currencies net interest margin (%)	**1.28**	1.46	1.76	1.64	1.56	**na**	**na**
Non-Interest Revenue							
Securities commissions and fees	**1,029**	969	924	901	894	**4.6**	**(0.7)**
Deposit and payment service charges	**1,144**	1,123	1,076	1,005	1,002	**4.6**	**4.2**
Trading revenues	**1,830**	1,352	1,192	987	949	**16.6**	**12.9**
Lending fees	**997**	917	859	737	680	**10.6**	**8.8**
Card fees	**564**	479	526	532	462	**4.1**	**6.8**
Investment management and custodial fees	**1,742**	1,622	1,556	1,552	1,286	**11.7**	**17.8**
Mutual fund revenues	**1,473**	1,411	1,364	1,377	1,065	**12.2**	**9.6**
Underwriting and advisory fees	**936**	1,036	820	706	744	**7.5**	**10.2**
Securities gains, other than trading	**239**	171	84	171	162	**(3.5)**	**nm**
Foreign exchange, other than trading	**182**	191	162	172	179	**1.1**	**8.5**
Insurance revenue (2)	**1,879**	2,070	2,023	1,762	2,008	**9.2**	**19.6**
Investments in associates and joint ventures	**167**	386	140	207	169	**(2.6)**	**nm**
Other revenues	**542**	526	489	517	331	**9.1**	**10.0**
Total Non-Interest Revenue	**12,724**	12,253	11,215	10,626	9,931	**8.8**	**9.3**
Year-over-year non-interest revenue growth (%)	**3.9**	9.2	5.5	7.0	19.0	**na**	**na**
Non-interest revenue as a % of total revenue	**55.2**	55.0	53.2	54.8	54.5	**na**	**na**
Adjusted Non-Interest Revenue	**12,724**	12,253	11,299	10,627	9,931	**8.9**	**8.6**
Year-over-year adjusted non-interest revenue growth (%)	**3.9**	8.4	6.3	7.0	19.5	**na**	**na**
Adjusted non-interest revenue as a % of total adjusted revenue	**55.2**	55.0	53.4	54.8	54.5	**na**	**na**
Total Revenue	**23,037**	22,260	21,087	19,389	18,223	**6.5**	**8.4**
Year-over-year total revenue growth (%)	**3.5**	5.6	8.8	6.4	8.3	**na**	**na**
Total Revenue, net of CCPB (2)	**21,685**	20,722	19,544	18,135	16,718	**6.2**	**7.8**
Year-over-year total revenue growth, net of CCPB (%)	**4.6**	6.0	7.8	8.5	4.1	**na**	**na**
Total Adjusted Revenue	**23,037**	22,260	21,171	19,391	18,223	**7.4**	**8.0**
Year-over-year total adjusted revenue growth (%)	**3.5**	5.1	9.2	6.4	12.9	**na**	**na**
Total Adjusted Revenue, net of CCPB (2)	**21,685**	20,722	19,628	18,137	16,718	**7.1**	**7.4**
Year-over-year total adjusted revenue growth, net of CCPB (%)	**4.6**	5.6	8.2	8.5	8.7	**na**	**na**

Five-year and ten-year CAGR based on CGAAP in 2008 and IFRS in 2013 and 2018.

The adoption of new IFRS standards in 2015 and 2018 only impacted our results prospectively.

(1) Net interest margin is calculated based on average earning assets.

(2) Beginning in 2015, insurance claims, commissions and changes in policy benefit liabilities (CCPB) are reported separately. They were previously reported as a reduction in insurance revenue in non-interest revenue. Prior years' amounts and ratios have been reclassified.

na – not applicable

nm – not meaningful

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Table 4: Non-Interest Expense, Expense-to-Revenue Ratio and Government Levies and Taxes

($ millions, except as noted) For the year ended October 31	2018	2017	2016	2015	2014	5-year CAGR	10-year CAGR
Non-Interest Expense							
Employee compensation							
Salaries	**4,174**	3,995	4,082	3,910	3,388	**5.1**	**6.9**
Performance-based compensation	**2,510**	2,386	2,278	2,102	1,946	**8.3**	**6.8**
Employee benefits	**775**	1,086	1,022	1,069	908	**(2.9)**	**3.9**
Total employee compensation	**7,459**	7,467	7,382	7,081	6,242	**5.0**	**6.5**
Premises and equipment							
Rental of real estate	**526**	494	486	462	415	**4.8**	**6.5**
Premises, furniture and fixtures	**345**	282	337	287	261	**(1.8)**	**3.1**
Property taxes	**38**	39	42	39	39	**0.2**	**2.7**
Computers and equipment	**1,844**	1,676	1,528	1,349	1,193	**13.0**	**10.5**
Total premises and equipment	**2,753**	2,491	2,393	2,137	1,908	**8.5**	**8.3**
Other expenses							
Amortization of intangible assets	**503**	485	444	411	382	**7.8**	**10.6**
Communications	**282**	286	294	314	289	**(0.7)**	**3.4**
Business, capital and sundry taxes	**38**	38	42	45	39	**(0.4)**	**(1.1)**
Professional fees	**564**	563	523	595	622	**1.4**	**3.9**
Travel and business development	**673**	693	646	605	542	**5.6**	**7.5**
Other	**1,341**	1,307	1,317	1,062	931	**9.1**	**9.4**
Total other expenses	**3,401**	3,372	3,266	3,032	2,805	**5.6**	**7.3**
Total Non-Interest Expense	**13,613**	13,330	13,041	12,250	10,955	**5.8**	**7.0**
Year-over-year total non-interest expense growth (%)	**2.1**	2.2	6.5	11.8	6.8	**na**	**na**
Total Adjusted Non-Interest Expense	**13,480**	13,035	12,588	11,887	10,795	**6.6**	**7.0**
Year-over-year total adjusted non-interest expense growth (%)	**3.4**	3.6	5.9	10.1	3.7	**na**	**na**
Non-interest expense-to-revenue ratio (Efficiency ratio) (%)	**59.1**	59.9	61.8	63.2	60.1	**na**	**na**
Adjusted non-interest expense-to-revenue ratio (Adjusted Efficiency ratio) (%)	**58.5**	58.6	59.5	61.3	59.2	**na**	**na**
Efficiency ratio, net of CCPB (%)	**62.8**	64.3	66.7	67.5	65.5	**na**	**na**
Adjusted efficiency ratio, net of CCPB (%)	**62.2**	62.9	64.1	65.5	64.6	**na**	**na**
Government Levies and Taxes (1)							
Government levies other than income taxes							
Payroll levies	**328**	322	324	312	252	**5.7**	**7.2**
Property taxes	**38**	39	42	39	39	**0.2**	**2.7**
Provincial capital taxes	**29**	29	30	33	27	**(1.0)**	**(1.0)**
Business taxes	**8**	8	9	10	9	**(1.0)**	**(2.8)**
Harmonized sales tax, GST, VAT and other sales taxes	**350**	330	318	288	273	**6.0**	**11.7**
Sundry taxes	**1**	1	3	2	2	**nm**	**nm**
Total government levies other than income taxes	**754**	729	726	684	602	**5.1**	**7.8**
Provision for income taxes	**1,960**	1,296	1,101	936	903	**13.2**	**nm**
Total Government Levies and Taxes	**2,714**	2,025	1,827	1,620	1,505	**10.5**	**25.4**
Total government levies and taxes as a % of income before total government levies and taxes	**33.2**	27.5	28.3	26.9	25.8	**na**	**na**
Effective income tax rate (%)	**26.5**	19.5	19.2	17.5	17.2	**na**	**na**
Adjusted effective income tax rate (%)	**20.7**	19.8	19.9	18.0	17.5	**na**	**na**

Five-year and ten-year CAGR based on CGAAP in 2008 and IFRS in 2013 and 2018.

The adoption of new IFRS standards in 2015 and 2018 only impacted our results prospectively.

(1) Government levies are included in various non-interest expense categories.

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	2018 Average balances	2018 Average interest rate (%)	2018 Interest income/ expense	2017 Average balances	2017 Average interest rate (%)	2017 Interest income/ expense	2016 Average balances	2016 Average interest rate (%)	2016 Interest income/ expense
Assets									
Canadian Dollar									
Deposits with other banks and other interest bearing assets	**2,374**	**1.83**	**43**	1,643	0.51	8	2,095	1.00	20
Securities	**79,187**	**1.27**	**1,007**	84,985	0.98	836	84,099	1.09	914
Securities borrowed or purchased under resale agreements	**36,325**	**1.56**	**566**	32,528	0.95	309	34,906	0.75	261
Loans									
Residential mortgages	**106,610**	**2.79**	**2,973**	104,529	2.61	2,729	99,280	2.63	2,615
Non-residential mortgages	**5,873**	**3.28**	**193**	6,114	3.23	197	6,281	3.37	212
Personal and credit cards	**58,612**	**5.15**	**3,021**	57,675	4.77	2,752	56,211	4.71	2,645
Business and government	**56,427**	**3.98**	**2,248**	52,668	3.48	1,831	49,057	3.60	1,767
Total loans	**227,522**	**3.71**	**8,435**	220,986	3.40	7,509	210,829	3.43	7,239
Total Canadian dollar	**345,408**	**2.91**	**10,051**	340,142	2.55	8,662	331,929	2.54	8,434
U.S. Dollar and Other Currencies									
Deposits with other banks and other interest bearing assets	**46,607**	**1.40**	**654**	39,660	0.86	340	42,921	0.48	205
Securities	**91,198**	**1.68**	**1,528**	74,991	1.29	965	57,820	1.17	676
Securities borrowed or purchased under resale agreements	**55,647**	**1.81**	**1,010**	54,766	0.93	508	54,210	0.59	319
Loans									
Residential mortgages	**11,218**	**3.60**	**404**	8,548	3.55	304	8,630	3.52	304
Non-residential mortgages	**6,652**	**4.48**	**298**	5,159	3.88	200	4,672	3.72	174
Personal and credit cards	**10,799**	**4.41**	**476**	11,513	3.90	449	15,771	3.32	524
Business and government	**113,772**	**4.42**	**5,030**	110,166	3.87	4,261	104,853	3.58	3,752
Total loans	**142,441**	**4.36**	**6,208**	135,386	3.85	5,214	133,926	3.55	4,754
Total U.S. dollar and other currencies	**335,893**	**2.80**	**9,400**	304,803	2.31	7,027	288,877	2.06	5,954
Other non-interest bearing assets	**72,994**			77,681			86,316		
Total All Currencies									
Total assets and interest income	**754,295**	**2.58**	**19,451**	722,626	2.17	15,689	707,122	2.03	14,388
Liabilities									
Canadian Dollar									
Deposits									
Banks	**3,607**	**0.59**	**21**	6,267	0.44	27	7,998	0.30	24
Business and government	**103,986**	**1.61**	**1,673**	103,109	1.20	1,237	97,969	1.24	1,218
Individuals	**111,081**	**0.80**	**891**	108,200	0.70	754	101,402	0.75	757
Total deposits	**218,674**	**1.18**	**2,585**	217,576	0.93	2,018	207,369	0.96	1,999
Securities sold but not yet purchased and securities lent or sold under repurchase agreements (1)	**40,640**	**2.00**	**811**	34,300	1.58	544	37,017	1.44	532
Subordinated debt and other interest bearing liabilities	**25,359**	**2.48**	**628**	25,334	2.02	512	27,127	2.08	563
Total Canadian dollar	**284,673**	**1.41**	**4,024**	277,210	1.11	3,074	271,513	1.14	3,094
U.S. Dollar and Other Currencies									
Deposits									
Banks	**26,282**	**1.93**	**506**	24,416	1.10	269	25,485	0.58	148
Business and government	**191,739**	**1.37**	**2,622**	181,732	0.78	1,417	178,609	0.42	758
Individuals	**61,651**	**0.59**	**367**	57,245	0.33	190	54,081	0.24	131
Total deposits	**279,672**	**1.25**	**3,495**	263,393	0.71	1,876	258,175	0.40	1,037
Securities sold but not yet purchased and securities lent or sold under repurchase agreements (1)	**63,940**	**1.94**	**1,240**	59,154	0.96	570	50,791	0.57	288
Subordinated debt and other interest bearing liabilities	**16,798**	**2.26**	**379**	10,776	1.51	162	8,842	1.10	97
Total U.S. dollar and other currencies	**360,410**	**1.42**	**5,114**	333,323	0.78	2,608	317,808	0.45	1,422
Other non-interest bearing liabilities	**65,223**			69,049			77,546		
Total All Currencies									
Total liabilities and interest expense	**710,306**	**1.29**	**9,138**	679,582	0.84	5,682	666,867	0.68	4,516
Shareholders' equity	**43,989**			43,044			40,255		
Total Liabilities, Interest Expense and Shareholders' Equity	**754,295**	**1.21**	**9,138**	722,626	0.79	5,682	707,122	0.64	4,516
Net interest margin									
– based on earning assets		**1.51**			1.55			1.59	
– based on total assets		**1.37**			1.38			1.40	
Net interest income			**10,313**			10,007			9,872

(1) For the years ended October 31, 2018, 2017 and 2016, the maximum amount of securities lent or sold under repurchase agreements at any month end amounted to $85,489 million, $72,826 million and $67,169 million, respectively.

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Table 6: Volume/Rate Analysis of Changes in Net Interest Income

($ millions) For the year ended October 31	2018/2017 Increase (decrease) due to change in Average balance	Average rate	Total	2017/2016 Increase (decrease) due to change in Average balance	Average rate	Total
Assets						
Canadian Dollar						
Deposits with other banks and other interest bearing assets	**4**	**31**	**35**	(4)	(8)	(12)
Securities	**(57)**	**228**	**171**	9	(87)	(78)
Securities borrowed or purchased under resale agreements	**36**	**221**	**257**	(17)	65	48
Loans						
Residential mortgages	**54**	**190**	**244**	138	(24)	114
Non-residential mortgages	**(8)**	**4**	**(4)**	(6)	(9)	(15)
Personal and credit cards	**45**	**224**	**269**	69	38	107
Business and government	**130**	**287**	**417**	131	(67)	64
Total loans	**221**	**705**	**926**	332	(62)	270
Change in Canadian dollar interest income	**204**	**1,185**	**1,389**	320	(92)	228
U.S. Dollar and Other Currencies						
Deposits with other banks and other interest bearing assets	**59**	**255**	**314**	(15)	150	135
Securities	**209**	**354**	**563**	201	88	289
Securities borrowed or purchased under resale agreements	**8**	**494**	**502**	3	186	189
Loans						
Residential mortgages	**95**	**5**	**100**	(3)	3	–
Non-residential mortgages	**58**	**40**	**98**	18	8	26
Personal and credit cards	**(28)**	**55**	**27**	(142)	67	(75)
Business and government	**140**	**629**	**769**	190	319	509
Total loans	**265**	**729**	**994**	63	397	460
Change in U.S. dollar and other currencies interest income	**541**	**1,832**	**2,373**	252	821	1,073
Total All Currencies						
Change in total interest income (a)	**745**	**3,017**	**3,762**	572	729	1,301
Liabilities						
Canadian Dollar						
Deposits						
Banks	**(12)**	**6**	**(6)**	(5)	8	3
Business and government	**11**	**425**	**436**	64	(45)	19
Individuals	**20**	**117**	**137**	51	(54)	(3)
Total deposits	**19**	**548**	**567**	110	(91)	19
Securities sold but not yet purchased and securities lent or sold under repurchase agreements	**100**	**167**	**267**	(39)	51	12
Subordinated debt and other interest bearing liabilities	**1**	**115**	**116**	(37)	(14)	(51)
Change in Canadian dollar interest expense	**120**	**830**	**950**	34	(54)	(20)
U.S. Dollar and Other Currencies						
Deposits						
Banks	**20**	**217**	**237**	(6)	127	121
Business and government	**78**	**1,127**	**1,205**	13	646	659
Individuals	**15**	**162**	**177**	8	51	59
Total deposits	**113**	**1,506**	**1,619**	15	824	839
Securities sold but not yet purchased and securities lent or sold under repurchase agreements	**46**	**624**	**670**	47	235	282
Subordinated debt and other interest bearing liabilities	**91**	**126**	**217**	21	44	65
Change in U.S. dollar and other currencies interest expense	**250**	**2,256**	**2,506**	83	1,103	1,186
Total All Currencies						
Change in total interest expense (b)	**370**	**3,086**	**3,456**	117	1,049	1,166
Change in total net interest income (a – b)	**375**	**(69)**	**306**	455	(320)	135

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Table 7: Net Loans and Acceptances – Segmented Information (1) (2)

($ millions)	Canada					United States					Other countries				
As at October 31	**2018**	2017	2016	2015	2014	**2018**	2017	2016	2015	2014	**2018**	2017	2016	2015	2014
Consumer															
Residential mortgages	**107,956**	106,647	103,558	96,975	92,972	**11,645**	8,587	8,686	8,905	7,980	**–**	–	–	–	–
Credit cards	**7,788**	7,550	7,541	7,427	7,476	**541**	521	560	553	496	**–**	–	–	–	–
Consumer instalment and other personal loans	**52,706**	51,637	50,368	49,181	48,955	**9,918**	9,798	13,974	16,098	15,088	**458**	373	215	206	1
Total consumer	**168,450**	165,834	161,467	153,583	149,403	**22,104**	18,906	23,220	25,556	23,564	**458**	373	215	206	1
Total business and government	**94,459**	84,046	78,884	69,044	63,460	**109,286**	96,079	98,236	75,336	56,366	**9,088**	11,255	10,037	10,611	10,844
Total loans and acceptances, net of allowance for credit losses on impaired loans	**262,909**	249,880	240,351	222,627	212,863	**131,390**	114,985	121,456	100,892	79,930	**9,546**	11,628	10,252	10,817	10,845
Allowance for credit losses on performing loans (3)	**(689)**	(799)	(833)	(816)	(766)	**(574)**	(641)	(687)	(682)	(595)	**(6)**	–	–	–	–
Total net loans and acceptances	**262,220**	249,081	239,518	221,811	212,097	**130,816**	114,344	120,769	100,210	79,335	**9,540**	11,628	10,252	10,817	10,845

Table 8: Net Impaired Loans and Acceptances – Segmented Information (2) (4)

($ millions, except as noted)	Canada					United States					Other countries				
As at October 31	**2018**	2017	2016	2015	2014	**2018**	2017	2016	2015	2014	**2018**	2017	2016	2015	2014
Consumer															
Residential mortgages	**185**	206	195	204	208	**171**	161	175	173	303	**–**	–	–	–	–
Consumer instalment and other personal loans	**126**	127	121	117	136	**252**	293	345	316	309	**–**	–	–	–	–
Total consumer	**311**	333	316	321	344	**423**	454	520	489	612	**–**	–	–	–	–
Business and government	**235**	248	298	220	247	**597**	762	843	613	507	**–**	30	1	4	4
Total impaired loans and acceptances, net of allowance for credit losses on impaired loans	**546**	581	614	541	591	**1,020**	1,216	1,363	1,102	1,119	**–**	30	1	4	4
Condition Ratios (1)															
NIL as a % of net loans and acceptances	**0.21**	0.23	0.26	0.24	0.28	**0.78**	1.06	1.13	1.10	1.41	**–**	0.26	0.01	0.04	0.04
NIL as a % of net loans and acceptances															
Consumer	**0.18**	0.20	0.20	0.21	0.23	**1.91**	2.40	2.24	1.91	2.60	**–**	–	–	–	–
Business and government	**0.25**	0.30	0.38	0.32	0.39	**0.55**	0.79	0.86	0.81	0.90	**–**	0.27	0.01	0.04	0.04

(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 stated 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. The adoption of IFRS 9 has been applied prospectively.
(4) Net Impaired Loans balances are net of allowance for credit losses on impaired loans, excluding off-balance sheet instruments and undrawn commitments.

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		Total			
2018	2017	2016	2015	2014
119,601	115,234	112,244	105,880	100,952
8,329	8,071	8,101	7,980	7,972
63,082	61,808	64,557	65,485	64,044
191,012	185,113	184,902	179,345	172,968
212,833	191,380	187,157	154,991	130,670
403,845	376,493	372,059	334,336	303,638
(1,269)	(1,440)	(1,520)	(1,498)	(1,361)
402,576	375,053	370,539	332,838	302,277

		Total			
2018	2017	2016	2015	2014
356	367	370	377	511
378	420	466	433	445
734	787	836	810	956
832	1,040	1,142	837	758
1,566	1,827	1,978	1,647	1,714
0.39	0.49	0.53	0.50	0.57
0.38	0.43	0.45	0.45	0.55
0.39	0.54	0.61	0.54	0.58

Table 9: Net Loans and Acceptances – Segmented Information (1) (2)

($ millions)

As at October 31	**2018**	2017	2016	2015	2014
Net Loans and Acceptances by Province					
Atlantic provinces	**13,925**	13,686	13,736	13,364	13,067
Quebec	**40,177**	38,802	38,263	36,493	35,651
Ontario	**111,107**	104,566	97,991	88,850	84,117
Prairie provinces	**48,634**	46,853	46,411	43,519	42,006
British Columbia and territories	**48,377**	45,174	43,117	39,585	37,256
Total net loans and acceptances in Canada	**262,220**	249,081	239,518	221,811	212,097
Net Business and Government Loans by Industry					
Commercial real estate	**31,028**	26,479	24,126	20,509	17,528
Construction (non-real estate)	**3,916**	3,916	3,563	3,544	3,101
Retail trade	**20,403**	18,496	16,430	13,538	12,035
Wholesale trade	**14,814**	11,612	12,157	10,172	7,964
Agriculture	**12,321**	11,114	10,951	9,891	9,155
Communications	**729**	625	905	815	831
Financing products	**4,439**	5,060	6,093	6,454	3,950
Manufacturing	**22,839**	19,824	18,587	16,064	13,427
Mining	**1,916**	1,344	1,867	1,309	1,085
Oil and gas	**9,168**	8,167	7,930	6,667	5,943
Transportation	**10,973**	10,496	10,695	3,735	2,532
Utilities	**3,911**	2,776	2,697	1,984	1,670
Forest products	**840**	835	889	859	587
Service industries	**38,348**	33,705	32,659	26,778	21,030
Financial	**32,463**	32,265	32,076	27,430	22,590
Government	**1,436**	1,470	1,326	1,488	1,690
Other	**3,289**	3,196	4,206	3,754	5,552
	212,833	191,380	187,157	154,991	130,670

Table 10: Net Impaired Loans and Acceptances – Segmented Information (3)

($ millions)

As at October 31	**2018**	2017	2016	2015	2014
Net Impaired Business and Government Loans					
Commercial real estate	**45**	45	60	87	159
Construction (non-real estate)	**18**	39	45	83	84
Retail trade	**50**	36	13	55	38
Wholesale trade	**42**	97	51	47	35
Agriculture	**193**	238	221	129	103
Communications	**–**	–	1	13	59
Financing products	**–**	–	–	–	–
Manufacturing	**77**	70	106	102	100
Mining	**1**	1	2	3	2
Oil and gas	**57**	145	408	100	1
Transportation	**90**	156	88	30	7
Utilities	**2**	4	12	14	–
Forest products	**–**	2	7	9	13
Service industries	**191**	181	82	107	145
Financial	**66**	2	39	48	9
Government	**–**	3	6	–	2
Other	**–**	21	1	10	1
	832	1,040	1,142	837	758

(1) Aggregated 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 stated 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) Net Impaired Loans balances are net of allowance for credit losses on impaired loans, excluding 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	**2018**	2017	2016	2015	2014	**2018**	2017	2016	2015	2014	**2018**	2017	2016	2015	2014
Gross impaired loans and acceptances (GIL), beginning of year															
Consumer	**439**	407	404	438	385	**508**	585	557	678	702	**–**	–	–	–	–
Business and government	**354**	380	282	344	406	**869**	1,009	757	623	1,081	**50**	2	4	5	7
Total GIL, beginning of year	**793**	787	686	782	791	**1,377**	1,594	1,314	1,301	1,783	**50**	2	4	5	7
Additions to impaired loans and acceptances															
Consumer	**836**	697	631	617	643	**274**	360	473	526	529	**–**	–	–	–	–
Business and government	**321**	281	453	231	285	**647**	799	953	542	685	**–**	56	2	5	–
Total additions	**1,157**	978	1,084	848	928	**921**	1,159	1,426	1,068	1,214	**–**	56	2	5	–
Reductions to impaired loans and acceptances (3)															
Consumer	**(628)**	(479)	(446)	(474)	(428)	**(212)**	(301)	(282)	(432)	(321)	**–**	–	–	–	–
Business and government	**(282)**	(259)	(251)	(168)	(229)	**(573)**	(692)	(456)	(248)	(858)	**(49)**	(7)	(4)	(5)	(2)
Total reductions due to net repayments and other	**(910)**	(738)	(697)	(642)	(657)	**(785)**	(993)	(738)	(680)	(1,179)	**(49)**	(7)	(4)	(5)	(2)
Write-offs (4)															
Consumer	**(221)**	(186)	(182)	(177)	(162)	**(100)**	(136)	(163)	(215)	(232)	**–**	–	–	–	–
Business and government	**(84)**	(48)	(104)	(125)	(118)	**(212)**	(247)	(245)	(160)	(285)	**(1)**	(1)	–	(1)	–
Total write-offs	**(305)**	(234)	(286)	(302)	(280)	**(312)**	(383)	(408)	(375)	(517)	**(1)**	(1)	–	(1)	–
Gross impaired loans and acceptances, end of year															
Consumer	**426**	439	407	404	438	**470**	508	585	557	678	**–**	–	–	–	–
Business and government	**309**	354	380	282	344	**731**	869	1,009	757	623	**–**	50	2	4	5
Total GIL, end of year	**735**	793	787	686	782	**1,201**	1,377	1,594	1,314	1,301	**–**	50	2	4	5
Condition Ratios															
GIL as a % of Gross Loans															
Consumer	**0.25**	0.26	0.25	0.26	0.29	**2.12**	2.69	2.52	2.18	2.87	**–**	–	–	–	–
Business and government	**0.33**	0.42	0.48	0.41	0.54	**0.67**	0.90	1.03	1.01	1.10	**–**	0.44	0.02	0.04	0.05
Total Loans and Acceptances	**0.28**	0.32	0.33	0.31	0.37	**0.91**	1.20	1.31	1.31	1.62	**–**	0.43	0.02	0.04	0.05

(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				
2018	2017	2016	2015	2014
947	992	961	1,116	1,087
1,273	1,391	1,043	972	1,494
2,220	2,383	2,004	2,088	2,581
1,110	1,057	1,104	1,143	1,172
968	1,136	1,408	778	970
2,078	2,193	2,512	1,921	2,142
(840)	(780)	(728)	(906)	(749)
(904)	(958)	(711)	(421)	(1,089)
(1,744)	(1,738)	(1,439)	(1,327)	(1,838)
(321)	(322)	(345)	(392)	(394)
(297)	(296)	(349)	(286)	(403)
(618)	(618)	(694)	(678)	(797)
896	947	992	961	1,116
1,040	1,273	1,391	1,043	972
1,936	2,220	2,383	2,004	2,088
0.47	0.51	0.54	0.54	0.64
0.49	0.66	0.74	0.67	0.74
0.48	0.59	0.64	0.60	0.69

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SUPPLEMENTAL INFORMATION

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	**2018**	2017	2016	2015	2014	**2018**	2017	2016	2015	2014	**2018**	2017	2016	2015	2014
Allowance for credit losses (ACL), beginning of year															
Consumer	**705**	595	614	615	602	**301**	254	393	333	278	**–**	–	–	–	–
Business and government	**317**	471	388	371	433	**566**	793	657	646	653	**29**	1	–	1	4
Total ACL, beginning of year	**1,022**	1,066	1,002	986	1,035	**867**	1,047	1,050	979	931	**29**	1	–	1	4
Provision for credit losses (3)															
Consumer	**416**	394	373	366	406	**(9)**	74	(33)	112	202	**–**	–	–	–	–
Business and government	**28**	37	174	131	93	**243**	220	257	(78)	(172)	**(21)**	21	–	(1)	(2)
Total provision for credit losses	**444**	431	547	497	499	**234**	294	224	34	30	**(21)**	21	–	(1)	(2)
Recoveries															
Consumer	**127**	134	102	111	99	**75**	81	87	151	102	**–**	–	–	–	–
Business and government	**5**	10	14	13	15	**51**	40	140	181	408	**3**	–	–	–	–
Total recoveries	**132**	144	116	124	114	**126**	121	227	332	510	**3**	–	–	–	–
Write-offs															
Consumer	**(515)**	(501)	(481)	(475)	(470)	**(125)**	(157)	(173)	(222)	(242)	**–**	–	–	–	–
Business and government	**(84)**	(48)	(104)	(125)	(118)	**(212)**	(247)	(245)	(160)	(285)	**(1)**	(1)	–	(1)	–
Total write-offs	**(599)**	(549)	(585)	(600)	(588)	**(337)**	(404)	(418)	(382)	(527)	**(1)**	(1)	–	(1)	–
Other, including foreign exchange rate changes															
Consumer	**(8)**	(10)	(13)	(3)	(22)	**(12)**	(23)	(20)	19	(7)	**–**	–	–	–	–
Business and government	**(11)**	(27)	(1)	(2)	(52)	**–**	(114)	(16)	68	42	**2**	(1)	1	1	(1)
Total Other, including foreign exchange rate changes	**(19)**	(37)	(14)	(5)	(74)	**(12)**	(137)	(36)	87	35	**2**	(1)	1	1	(1)
ACL, end of year															
Consumer	**725**	612	595	614	615	**230**	229	254	393	333	**–**	–	–	–	–
Business and government	**255**	443	471	388	371	**648**	692	793	657	646	**12**	20	1	–	1
Total ACL, end of year	**980**	1,055	1,066	1,002	986	**878**	921	1,047	1,050	979	**12**	20	1	–	1
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	**2018**	2017	2016	2015	2014	**2018**	2017	2016	2015	2014	**2018**	2017	2016	2015	2014
Consumer															
Residential mortgages	**9**	12	15	17	20	**10**	12	18	21	41	**–**	–	–	–	–
Consumer instalment and other personal loans	**106**	94	76	66	74	**37**	42	47	47	25	**–**	–	–	–	–
Total consumer	**115**	106	91	83	94	**47**	54	65	68	66	**–**	–	–	–	–
Business and government	**74**	106	82	62	97	**134**	107	166	144	116	**–**	20	1	–	1
Total allowance for credit losses on impaired loans	**189**	212	173	145	191	**181**	161	231	212	182	**–**	20	1	–	1
Allowance for credit losses on performing loans (3)	**689**	799	833	816	766	**574**	641	687	682	595	**6**	–	–	–	–
Allowance for credit losses	**878**	1,011	1,006	961	957	**755**	802	918	894	777	**6**	20	1	–	1
Coverage Ratios															
Allowance for credit losses on impaired loans as a % of gross impaired loans and acceptances															
Total	**25.7**	26.7	22.0	21.1	24.4	**15.1**	11.7	14.5	16.1	14.0	**–**	40.0	50.0	–	20.0
Consumer	**27.0**	24.1	22.4	20.5	21.5	**10.0**	10.6	11.1	12.2	9.7	**–**	–	–	–	–
Business and government	**23.9**	29.9	21.6	22.0	28.2	**18.3**	12.3	16.5	19.0	18.6	**–**	40.0	50.0	–	20.0

(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. The adoption of IFRS 9 in 2018 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 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		
2018	2017	2016	2015	2014
1,006	849	1,007	948	880
912	1,265	1,045	1,018	1,090
1,918	2,114	2,052	1,966	1,970
407	468	340	478	608
250	278	431	52	(81)
657	746	771	530	527
202	215	189	262	201
59	50	154	194	423
261	265	343	456	624
(640)	(658)	(654)	(697)	(712)
(297)	(296)	(349)	(286)	(403)
(937)	(954)	(1,003)	(983)	(1,115)
(20)	(33)	(33)	16	(29)
(9)	(142)	(16)	67	(11)
(29)	(175)	(49)	83	(40)
955	841	849	1,007	948
915	1,155	1,265	1,045	1,018
1,870	1,996	2,114	2,052	1,966
0.17	0.19	0.19	0.17	0.17

		Total		
2018	2017	2016	2015	2014
19	24	33	38	61
143	136	123	113	99
162	160	156	151	160
208	233	249	206	214
370	393	405	357	374
1,269	1,440	1,520	1,498	1,361
1,639	1,833	1,925	1,855	1,735
19.1	17.7	17.0	17.8	17.9
18.1	16.9	15.7	15.7	14.3
20.0	18.3	17.9	19.8	22.0

SUPPLEMENTAL INFORMATION

Table 14: Allowance for Credit Losses on Impaired Loans – Segmented Information

($ millions)

As at October 31	2018	2017	2016	2015	2014
Business and Government					
Allowance for Credit Losses on Impaired Loans by Industry					
Commercial real estate	**8**	15	13	17	13
Construction (non-real estate)	**16**	14	4	8	16
Retail trade	**17**	14	12	23	8
Wholesale trade	**23**	17	31	19	10
Agriculture	**16**	11	19	6	8
Communications	**–**	–	1	9	–
Financing products	**–**	–	–	–	–
Manufacturing	**20**	51	36	38	33
Mining	**–**	–	1	1	10
Oil and gas	**17**	42	45	2	–
Transportation	**31**	13	9	5	2
Utilities	**–**	2	3	–	–
Forest products	**1**	1	1	2	9
Service industries	**46**	51	50	33	100
Financial	**1**	2	10	3	2
Government	**–**	–	–	–	–
Other	**12**	–	14	40	3
Total business and government (1)	**208**	233	249	206	214

Table 15: Provision for Credit Losses – Segmented Information

($ millions)

For the year ended October 31	2018	2017	2016	2015	2014
Consumer					
Residential mortgages	**19**	11	24	11	77
Cards	**216**	232	232	216	238
Consumer instalment and other personal loans	**231**	232	246	225	251
Total consumer	**466**	475	502	452	566
Business and Government					
Commercial real estate	**(2)**	(4)	(16)	(37)	(141)
Construction (non-real estate)	**–**	25	15	–	7
Retail trade	**10**	29	13	8	1
Wholesale trade	**18**	24	11	19	29
Agriculture	**37**	31	56	3	15
Communications	**–**	(1)	2	13	–
Financing products	**–**	–	–	–	–
Manufacturing	**20**	28	29	67	44
Mining	**–**	–	20	2	7
Oil and gas	**(25)**	9	105	25	–
Transportation	**74**	108	56	(4)	10
Utilities	**(2)**	–	3	–	–
Forest products	**(1)**	–	(1)	–	(1)
Service industries	**87**	102	21	(29)	80
Financial	**(4)**	(3)	(7)	8	(34)
Government	**–**	–	–	(2)	(3)
Other	**22**	(1)	(38)	5	(53)
Total business and government	**234**	347	269	78	(39)
Total provision for credit losses on impaired loans	**700**	822	771	530	527
Provision for credit losses on performing loans (2)	**(38)**	(76)	–	–	–
	662	746	771	530	527
Performance Ratios (%)					
PCL-to-average net loans and acceptances	**0.17**	0.20	0.22	0.17	0.18
PCL-to-segmented average net loans and acceptances					
Consumer	**0.25**	0.26	0.28	0.26	0.33
Business and government	**0.12**	0.18	0.15	0.05	(0.03)
PCL on impaired loans-to-average net loans and acceptances	**0.18**	0.22	0.22	0.17	0.18

(1) Amounts exclude allowance for credit losses included in Other Liabilities.

(2) Prior periods have not been restated to reflect the adoption of IFRS 9 in 2018. The adoption of IFRS 9 in 2018 has been applied prospectively.

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Table 16: Average Deposits

($ millions, except as noted)	2018 Average balance	2018 Average rate paid (%)	2017 Average balance	2017 Average rate paid (%)	2016 Average balance	2016 Average rate paid (%)
Deposits Booked in Canada						
Demand deposits – interest bearing	**20,874**	**0.86**	21,253	0.44	19,493	0.33
Demand deposits – non-interest bearing	**45,967**	**–**	41,985	–	37,296	–
Payable after notice	**81,941**	**0.84**	79,963	0.49	75,701	0.43
Payable on a fixed date	**150,583**	**1.97**	147,097	1.50	136,821	1.38
Total deposits booked in Canada	**299,365**	**1.28**	290,298	0.93	269,311	0.85
Deposits Booked in the United States and Other Countries						
Banks located in the United States and other countries (1)	**24,596**	**1.92**	23,520	1.10	24,798	0.58
Governments and institutions in the United States and other countries	**10,014**	**1.49**	9,196	0.76	6,867	0.36
Other demand deposits	**13,858**	**0.30**	14,327	0.04	17,346	0.02
Other deposits payable after notice or on a fixed date	**150,513**	**1.05**	143,628	0.61	147,221	0.39
Total deposits booked in the United States and other countries	**198,981**	**1.13**	190,671	0.63	196,232	0.38
Total average deposits	**498,346**	**1.22**	480,969	0.81	465,543	0.65

As at October 31, 2018, 2017 and 2016: deposits by foreign depositors in our Canadian bank offices amounted to $48,592 million, $44,722 million and $52,834 million, respectively; total deposits payable after notice included $34,754 million, $33,561 million and $30,122 million, respectively, of chequing accounts that would have been classified as demand deposits under U.S. reporting requirements; and total deposits payable on a fixed date included $28,927 million, $30,648 million and $35,460 million, respectively, of federal funds purchased, commercial paper issued and other deposit liabilities. These amounts would have been classified as short-term borrowings for U.S. reporting purposes.

(1) Includes regulated and central banks.

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GLOSSARY OF FINANCIAL TERMS

Glossary of Financial Terms

Adjusted Earnings and Measures present results adjusted to exclude the impact of certain items, as set out in the Non-GAAP Measures section. Management considers both reported and adjusted results to be useful in assessing underlying ongoing business performance.
Page 27

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.
Pages 92, 117

Assets under Administration and 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 physical assets such as trade receivables, and is generally used for short-term financing needs.
Pages 76, 105

Average Earning Assets represents the daily or monthly average balance of deposits with other banks and loans and securities, 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.
Pages 70, 71, 105, 106, 113

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.

Business Risk arises from the specific business activities of an enterprise and the effects these could have on its earnings.
Page 114

Common Equity Tier 1 (CET1) capital is comprised of common shareholders' equity less deductions for goodwill, intangible assets, pension assets, certain deferred tax assets and certain other items.
Pages 72, 191

Common Equity Tier 1 Ratio reflects CET1 capital divided by CET1 capital risk-weighted assets.
Pages 33, 69, 70, 71, 191

Common Shareholders' Equity is the most permanent form of capital. For regulatory capital purposes, common shareholders' equity is comprised of 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, procurement, data and analytics and innovation. T&O manages, maintains and provides governance of information technology, cyber security and operations services.
Page 60

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.
Pages 87, 164

Derivatives are contracts with a value that is derived from movements in 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.

Earnings Per Share (EPS) is calculated by dividing net income attributable to bank shareholders, after deducting preferred share dividends, by the average number of common shares outstanding. Diluted EPS, which is our basis for measuring performance, adjusts for possible conversions of financial instruments into common shares if those conversions would reduce EPS. Adjusted EPS is calculated in the same manner using adjusted net income.
Pages 32, 200

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.
Page 98

Economic Capital is an expression of the enterprise's capital demand requirement relative to the bank's view of the economic risks in its underlying business activities. It represents management's estimation of the likely magnitude of economic loss that could occur should severely adverse situations arise, and allows returns to be measured on a consistent basis across such risks. Economic capital is calculated for various types of risk, including credit, market (trading and non-trading), operational and business, based on a one-year time horizon using a defined confidence level.
Pages 74, 85

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.
Page 98

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 revenue and adjusted non-interest expense.
Page 41

Environmental and Social Risk is the potential for loss or damage resulting from environmental or social concerns related to BMO or its customers. Environmental and social risk is often associated with credit, operational and reputation risk.
Page 115

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.

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.
Page 167

Hedging is a risk management technique used to neutralize, manage or offset interest rate, foreign currency, equity, commodity or credit 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.
Page 95

Innovative Tier 1 Capital is a form of Tier 1 capital issued by structured entities that can be included in calculating a bank's Tier 1 Capital Ratio, Total Capital Ratio and Leverage Ratio.

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. It generally entails the inherent unpredictability that can arise from assuming long-term policy liabilities or from the uncertainty of 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, including annuities and life, accident and sickness, and creditor insurance, as well as in our reinsurance business.
Page 100

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 risks of failure to: comply with the law (in letter or in spirit) or maintain standards of care; implement legislative 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.
Page 112

Leverage Ratio reflects Tier 1 capital divided by the sum of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.
Page 70

Liquidity and Funding Risk is the potential for loss if BMO is unable to meet 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.
Page 100

Market Risk is the potential for adverse changes in the value of BMO's 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.
Pages 95, 164

Mark-to-Market represents the valuation of financial instruments at market rates as of the balance sheet date, where required by accounting rules.

Model Risk is the potential for adverse consequences following from decisions that are based on incorrect or misused model results. These adverse consequences can include financial loss, poor business decision-making or damage to reputation.
Page 111

Net Interest Income is comprised of earnings on assets, such as loans and securities, including interest and certain dividend income, less interest expense paid on liabilities, such as deposits.
Page 37

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 total assets.
Page 37

Net Non-Interest Revenue is non-interest revenue, net of insurance claims, commissions and changes in policy benefit liabilities.

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.
Page 41

Operational Risk is the potential for loss resulting from inadequate or failed internal processes or systems, human interactions or external events, but excludes business risk, credit risk, liquidity and funding risk, market risk, strategic and reputation risk.
Page 109

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.
Page 167

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. The PCL can be comprised of both a provision for credit losses on impaired loans and a provision for credit losses on performing loans.
Pages 40, 65, 91

Reputation Risk is the potential for loss or harm to the BMO brand. It can arise even if other risks are managed effectively.
Page 116

Return on Equity or Return on Common Shareholders' Equity (ROE) is calculated as net income, less non-controlling interest in subsidiaries and preferred dividends, as a percentage of average common shareholders' equity. Common shareholders' equity is comprised of 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.
Pages 33, 65

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.
Pages 33, 65

Risk-Weighted Assets (RWA) are defined as on- and off-balance sheet exposures that are risk-weighted based on guidelines established by OSFI. The term is used for capital management and regulatory reporting purposes.
Page 70

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.
Page 76

Strategic Risk is the potential for loss due to changes in the external business environment and/or failure to respond appropriately to these changes as a result of inaction, ineffective strategies or poor implementation of strategies.
Page 115

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.
Page 95

Structured Entities (SEs) include entities for which voting or similar rights are not the dominant factor in determining control of the entity. We are required to consolidate an SE if we control the entity by having power over the entity, exposure to variable returns as a result of our involvement and the ability to exercise power to affect the amount of our returns.
Pages 77, 165

Structural (Non-Trading) Market Risk is comprised of interest rate risk arising from banking activities (loans and deposits) and foreign exchange risk arising from our foreign currency operations and exposures.
Page 98

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:

- *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.

Page 167

Tangible Common Equity is calculated as common shareholders' equity less goodwill and acquisition-related intangible assets, net of related deferred tax liabilities.
Page 33

Taxable Equivalent Basis (teb): Revenues of operating groups are presented in our MD&A on a taxable equivalent basis (teb). 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.
Pages 36, 204

Tier 1 Capital is comprised of CET1 and Additional Tier 1 (AT1) Capital. AT1 capital consists of preferred shares and innovative hybrid instruments subject to phase-out, less certain regulatory deductions.
Pages 70, 191

Tier 1 Capital Ratio reflects Tier 1 capital divided by Tier 1 capital risk-weighted assets.
Pages 70, 191

Total Loss Absorbing Capacity (TLAC) is comprised of total capital and senior unsecured debt subject to the Canadian Bail-In Regime. The largest Canadian banks are required to meet minimum TLAC RWA-based and leverage-based ratios effective November 1, 2021, as calculated under OSFI's TLAC Guideline.
Pages 71, 113

Total Capital includes Tier 1 and Tier 2 capital. **Tier 2 capital** is comprised of subordinated debentures and may include certain loan loss allowances less certain regulatory deductions.
Pages 70, 191

Total Capital Ratio reflects Total capital divided by Total capital risk-weighted assets.
Pages 70, 191

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.
Page 32

Trading and Underwriting Market Risk gives rise to market risk associated with buying and selling financial products in the course of servicing customer requirements, market making and related financing activities, and from assisting clients to raise funds by way of securities issuance.
Page 95

Trading-Related Revenues include 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 revenues include income (expense) and gains (losses) from both on-balance sheet instruments and interest rate, foreign exchange (including spot positions), equity, commodity and credit contracts.
Page 38

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.
Pages 95, 96

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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 consolidated 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, 2018, 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, 2018 is set forth on page 142.

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 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



Thomas E. Flynn
Chief Financial Officer

Toronto, Canada
December 4, 2018

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Independent Auditors' Report of Registered Public Accounting Firm

To the Shareholders of Bank of Montreal

Opinion on the Consolidated Financial Statements
We have audited the accompanying consolidated financial statements of Bank of Montreal (the "Bank"), which comprise the consolidated balance sheets as at October 31, 2018 and October 31, 2017, the 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, 2018, and notes, comprising a summary of significant accounting policies and other explanatory information (collectively referred to as the consolidated financial statements).

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Bank as at October 31, 2018 and October 31, 2017, and its consolidated financial performance and its consolidated cash flows for each of the years in the three-year period ended October 31, 2018 in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Change in Accounting Principle
Without qualifying our opinion on the consolidated financial statements, we draw attention to Note 1 to the consolidated financial statements, which indicates that the Bank has changed its method of accounting for financial instruments in 2018 due to the adoption of International Financial Reporting Standard 9 *Financial Instruments.*

Report on Internal Control Over Financial Reporting
We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Bank's internal control over financial reporting as of October 31, 2018, based on the criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated December 4, 2018 expressed an unqualified (unmodified) opinion on the effectiveness of the Bank's internal control over financial reporting.

Basis for Opinion

A – Management's Responsibility for the Consolidated Financial Statements
Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

B – Auditors' Responsibility
Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement, whether due to error or fraud. Those standards also require that we comply with ethical requirements, including independence. We are required to be independent with respect to the Bank in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in Canada, the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB. We are a public accounting firm registered with the PCAOB.

An audit includes performing procedures to assess the risks of material misstatements of the consolidated financial statements, whether due to error or fraud, and performing procedures to respond to those risks. Such procedures included obtaining and examining, on a test basis, audit evidence regarding the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Bank's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances.

An audit also includes evaluating the appropriateness of accounting policies and principles used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained in our audits is sufficient and appropriate to provide a reasonable basis for our audit opinion.

KPMG LLP

Chartered Professional Accountants, Licensed Public Accountants
We have served as the Bank's auditor since 2004 and as joint auditor for the prior 11 years

December 4, 2018
Toronto, Canada

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Report of Independent Registered Public Accounting Firm

The Shareholders of Bank of Montreal

Opinion on Internal Control over Financial Reporting
We have audited Bank of Montreal (the "Bank")'s internal control over financial reporting as of October 31, 2018, 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, the Bank maintained, in all material respects, effective internal control over financial reporting as of October 31, 2018, based on the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Report on the Consolidated Financial Statements
We also have audited, in accordance with Canadian generally accepted auditing standards and the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of the Bank as at October 31, 2018, and 2017, 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, 2018, and the related notes, comprising a summary of significant accounting policies and other explanatory information (collectively referred to as the "consolidated financial statements") and our report dated December 4, 2018 expressed an unmodified (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 123 of the Management's Discussion and Analysis ("MD&A"). 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 and in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada.

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.

KPMG LLP

Chartered Professional Accountants, Licensed Public Accountants
December 4, 2018
Toronto, Canada

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Consolidated Statement of Income

For the Year Ended October 31 (Canadian $ in millions, except as noted)	2018	2017	2016
Interest, Dividend and Fee Income			
Loans	$ 16,275	$ 13,564	$ 12,575
Securities (Note 3) (1)	2,535	1,801	1,590
Deposits with banks	641	324	223
	19,451	15,689	14,388
Interest Expense			
Deposits	6,080	3,894	3,036
Subordinated debt	226	155	170
Other liabilities	2,832	1,633	1,310
	9,138	5,682	4,516
Net Interest Income	10,313	10,007	9,872
Non-Interest Revenue			
Securities commissions and fees	1,029	969	924
Deposit and payment service charges	1,144	1,123	1,076
Trading revenues	1,830	1,352	1,192
Lending fees	997	917	859
Card fees	564	479	526
Investment management and custodial fees	1,742	1,622	1,556
Mutual fund revenues	1,473	1,411	1,364
Underwriting and advisory fees	936	1,036	820
Securities gains, other than trading (Note 3)	239	171	84
Foreign exchange gains, other than trading	182	191	162
Insurance revenue	1,879	2,070	2,023
Investments in associates and joint ventures	167	386	140
Other	542	526	489
	12,724	12,253	11,215
Total Revenue	23,037	22,260	21,087
Provision for Credit Losses (Notes 1 and 4)	662	746	771
Insurance Claims, Commissions and Changes in Policy Benefit Liabilities (Note 14)	1,352	1,538	1,543
Non-Interest Expense			
Employee compensation (Notes 20 and 21)	7,459	7,467	7,382
Premises and equipment (Note 9)	2,753	2,491	2,393
Amortization of intangible assets (Note 11)	503	485	444
Travel and business development	673	693	646
Communications	282	286	294
Professional fees	564	563	523
Other	1,379	1,345	1,359
	13,613	13,330	13,041
Income Before Provision for Income Taxes	7,410	6,646	5,732
Provision for income taxes (Note 22)	1,960	1,296	1,101
Net Income	$ 5,450	$ 5,350	$ 4,631
Attributable to:			
Bank shareholders	5,450	5,348	4,622
Non-controlling interest in subsidiaries	–	2	9
Net Income	$ 5,450	$ 5,350	$ 4,631
Earnings Per Share (Canadian $) (Note 23)			
Basic	$ 8.19	$ 7.95	$ 6.94
Diluted	8.17	7.92	6.92
Dividends per common share	3.78	3.56	3.40

(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 $1,284 million for the year ended October 31, 2018.

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

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Comprehensive Income

For the Year Ended October 31 (Canadian $ in millions)	2018	2017	2016
Net Income	**$ 5,450**	$ 5,350	$ 4,631
Other Comprehensive (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 securities (1)			
Unrealized (losses) on fair value through OCI debt securities arising during the year (2)	**(251)**	na	na
Unrealized gains on available-for-sale securities arising during the year (3)	**na**	95	151
Reclassification to earnings of (gains) in the year (4)	**(65)**	(87)	(28)
	(316)	8	123
Net change in unrealized (losses) on cash flow hedges			
(Losses) on derivatives designated as cash flow hedges arising during the year (5)	**(1,228)**	(839)	(26)
Reclassification to earnings of losses on derivatives designated as cash flow hedges (6)	**336**	61	10
	(892)	(778)	(16)
Net gains (losses) on translation of net foreign operations			
Unrealized gains (losses) on translation of net foreign operations	**417**	(885)	213
Unrealized gains (losses) on hedges of net foreign operations (7)	**(155)**	23	41
	262	(862)	254
Items that will not be reclassified to net income			
Gains (losses) on remeasurement of pension and other employee future benefit plans (8)	**261**	420	(422)
(Losses) on remeasurement of own credit risk on financial liabilities designated at fair value (Note 1) (9)	**(24)**	(148)	(153)
	237	272	(575)
Other Comprehensive (Loss), net of taxes (Note 22)	**(709)**	(1,360)	(214)
Total Comprehensive Income	**$ 4,741**	$ 3,990	$ 4,417
Attributable to:			
Bank shareholders	**4,741**	3,988	4,408
Non-controlling interest in subsidiaries	**–**	2	9
Total Comprehensive Income	**$ 4,741**	$ 3,990	$ 4,417

(1) Fiscal 2017 and prior years represent available-for-sale securities (Note 1).
(2) Net of income tax recovery of $69 million, na and na for the year ended, respectively.
(3) Net of income tax (provision) of na, $(21) million and $(64) million for the year ended, respectively.
(4) Net of income tax provision of $23 million, $36 million and $11 million for the year ended, respectively.
(5) Net of income tax (provision) recovery of $432 million, $322 million and $(4) million for the year ended, respectively.
(6) Net of income tax (recovery) of $(121) million, $(21) million and $(6) million for the year ended, respectively.
(7) Net of income tax (provision) recovery of $56 million, $(8) million and $(10) million for the year ended, respectively.
(8) Net of income tax (provision) recovery of $(111) million, $(157) million and $156 million for the year ended, respectively.
(9) Net of income tax recovery of $6 million, $53 million and $55 million for the year ended, respectively.

na – not applicable due to IFRS 9 adoption.

The accompanying notes are an integral part of these consolidated financial statements.

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Consolidated Balance Sheet

As at October 31 (Canadian $ in millions)	2018	2017
Assets		
Cash and Cash Equivalents (Note 2)	**$ 42,142**	$ 32,599
Interest Bearing Deposits with Banks (Note 2)	**8,305**	6,490
Securities (Note 3)	**180,935**	163,198
Securities Borrowed or Purchased Under Resale Agreements (Note 4)	**85,051**	75,047
Loans (Notes 4 and 6)		
Residential mortgages	**119,620**	115,258
Consumer instalment and other personal	**63,225**	61,944
Credit cards	**8,329**	8,071
Business and government	**194,456**	175,067
	385,630	360,340
Allowance for credit losses (Notes 1 and 4)	**(1,639)**	(1,833)
	383,991	358,507
Other Assets		
Derivative instruments (Note 8)	**26,204**	28,951
Customers' liability under acceptances (Note 12)	**18,585**	16,546
Premises and equipment (Note 9)	**1,986**	2,033
Goodwill (Note 11)	**6,373**	6,244
Intangible assets (Note 11)	**2,272**	2,159
Current tax assets	**1,515**	1,371
Deferred tax assets (Note 22)	**2,037**	2,865
Other (Note 12)	**14,652**	13,570
	73,624	73,739
Total Assets	**$ 774,048**	$ 709,580
Liabilities and Equity		
Deposits (Note 13)	**$ 522,051**	$ 479,792
Other Liabilities		
Derivative instruments (Note 8)	**24,411**	27,804
Acceptances (Note 14)	**18,585**	16,546
Securities sold but not yet purchased (Note 14)	**28,804**	25,163
Securities lent or sold under repurchase agreements (Note 14)	**66,684**	55,119
Securitization and structured entities' liabilities (Notes 6 and 7)	**25,051**	23,054
Current tax liabilities	**50**	125
Deferred tax liabilities (Note 22)	**74**	233
Other (Note 14)	**35,829**	32,361
	199,488	180,405
Subordinated Debt (Note 15)	**6,782**	5,029
Equity		
Preferred shares (Note 16)	**4,340**	4,240
Common shares (Note 16)	**12,929**	13,032
Contributed surplus	**300**	307
Retained earnings	**25,856**	23,709
Accumulated other comprehensive income	**2,302**	3,066
Total Equity	**45,727**	44,354
Total Liabilities and Equity	**$ 774,048**	$ 709,580

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.

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Changes in Equity

For the Year Ended October 31 (Canadian $ in millions)	2018	2017	2016
Preferred Shares (Note 16)			
Balance at beginning of year	**$ 4,240**	$ 3,840	$ 3,240
Issued during the year	**400**	900	600
Redeemed during the year	**(300)**	(500)	–
Balance at End of Year	**4,340**	4,240	3,840
Common Shares (Note 16)			
Balance at beginning of year	**13,032**	12,539	12,313
Issued under the Shareholder Dividend Reinvestment and Share Purchase Plan (Note 16)	**–**	448	90
Issued under the Stock Option Plan (Note 16)	**99**	146	136
Repurchased for cancellation (Note 16)	**(202)**	(101)	–
Balance at End of Year	**12,929**	13,032	12,539
Contributed Surplus			
Balance at beginning of year	**307**	294	299
Stock option expense, net of options exercised (Note 20)	**(12)**	6	(14)
Other	**5**	7	9
Balance at End of Year	**300**	307	294
Retained Earnings			
Balance at beginning of year	**23,709**	21,205	18,930
Impact from adopting IFRS 9 (Note 28)	**99**	na	na
Net income attributable to bank shareholders	**5,450**	5,348	4,622
Dividends – Preferred shares (Note 16)	**(184)**	(184)	(150)
– Common shares (Note 16)	**(2,424)**	(2,312)	(2,191)
Share issue expense	**(5)**	(9)	(6)
Common shares repurchased for cancellation (Note 16)	**(789)**	(339)	–
Balance at End of Year	**25,856**	23,709	21,205
Accumulated Other Comprehensive Income (Loss) on Fair Value through OCI Securities, net of taxes (1)			
Balance at beginning of year	**56**	48	(75)
Impact from adopting IFRS 9 (Note 28)	**(55)**	na	na
Unrealized gains (losses) on fair value through OCI debt securities arising during the year	**(251)**	na	na
Unrealized gains on available-for-sale securities arising during the year	**na**	95	151
Reclassification to earnings of (gains) in the year	**(65)**	(87)	(28)
Balance at End of Year	**(315)**	56	48
Accumulated Other Comprehensive Income (Loss) on Cash Flow Hedges, net of taxes			
Balance at beginning of year	**(182)**	596	612
(Losses) on derivatives designated as cash flow hedges arising during the year	**(1,228)**	(839)	(26)
Reclassification to earnings of losses on derivatives designated as cash flow hedges in the year	**336**	61	10
Balance at End of Year	**(1,074)**	(182)	596
Accumulated Other Comprehensive Income on Translation of Net Foreign Operations, net of taxes			
Balance at beginning of year	**3,465**	4,327	4,073
Unrealized gains (losses) on translation of net foreign operations	**417**	(885)	213
Unrealized gains (losses) on hedges of net foreign operations	**(155)**	23	41
Balance at End of Year	**3,727**	3,465	4,327
Accumulated Other Comprehensive Income (Loss) on Pension and Other Employee Future Benefit Plans, net of taxes			
Balance at beginning of year	**(92)**	(512)	(90)
Gains (losses) on remeasurement of pension and other employee future benefit plans	**261**	420	(422)
Balance at End of Year	**169**	(92)	(512)
Accumulated Other Comprehensive Loss on Own Credit Risk on Financial Liabilities Designated at Fair Value, net of taxes			
Balance at beginning of year	**(181)**	(33)	120
(Losses) on remeasurement of own credit risk on financial liabilities designated at fair value (Note 1)	**(24)**	(148)	(153)
Balance at End of Year	**(205)**	(181)	(33)
Total Accumulated Other Comprehensive Income	**2,302**	3,066	4,426
Total Shareholders' Equity	**$ 45,727**	$ 44,354	$ 42,304
Non-controlling Interest in Subsidiaries			
Balance at beginning of year	**–**	24	491
Net income attributable to non-controlling interest	**–**	2	9
Dividends to non-controlling interest	**–**	–	(10)
Redemption/purchase of non-controlling interest	**–**	(25)	(450)
Other	**–**	(1)	(16)
Balance at End of Year	**–**	–	24
Total Equity	**$ 45,727**	$ 44,354	$ 42,328

(1) Fiscal 2017 and prior years represent available-for-sale securities (Note 1).

na – not applicable due to IFRS 9 adoption.

The accompanying notes are an integral part of these consolidated financial statements.

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Consolidated Statement of Cash Flows

For the Year Ended October 31 (Canadian $ in millions)	2018	2017	2016
Cash Flows from Operating Activities			
Net Income	**$ 5,450**	$ 5,350	$ 4,631
Adjustments to determine net cash flows provided by (used in) operating activities			
Provision on securities, other than trading (Note 3)	**14**	7	17
Net (gain) on securities, other than trading (Note 3)	**(253)**	(178)	(101)
Net (increase) in trading securities	**(2,650)**	(16,237)	(11,403)
Provision for credit losses (Note 4)	**662**	746	771
Change in derivative instruments – (Increase) decrease in derivative asset	**5,287**	15,544	(306)
– (Decrease) in derivative liability	**(6,699)**	(14,923)	(5,598)
Amortization of premises and equipment (Note 9)	**400**	391	384
Amortization of other assets	**224**	227	219
Amortization of intangible assets (Note 11)	**503**	485	444
Net decrease in deferred income tax asset	**834**	156	108
Net increase (decrease) in deferred income tax liability	**2**	(12)	(7)
Net (increase) in current income tax asset	**(232)**	(497)	(345)
Net increase (decrease) in current income tax liability	**(87)**	52	(18)
Change in accrued interest – (Increase) in interest receivable	**(366)**	(130)	(81)
– Increase in interest payable	**337**	15	64
Changes in other items and accruals, net	**956**	(3,416)	1,199
Net increase in deposits	**35,261**	15,409	23,385
Net (increase) in loans	**(23,089)**	(6,823)	(23,169)
Net increase in securities sold but not yet purchased	**2,004**	336	3,739
Net increase (decrease) in securities lent or sold under repurchase agreements	**452**	16,535	(82)
Net (increase) decrease in securities borrowed or purchased under resale agreements	**(2,958)**	(10,891)	2,793
Net increase in securitization and structured entities' liabilities	**1,860**	762	628
Net Cash Provided by (Used in) Operating Activities	**17,912**	2,908	(2,728)
Cash Flows from Financing Activities			
Net increase (decrease) in liabilities of subsidiaries	**2,203**	(87)	3,100
Proceeds from issuance of covered bonds (Note 13)	**2,706**	5,845	8,945
Redemption of covered bonds (Note 13)	**(567)**	(2,602)	(2,101)
Proceeds from issuance of subordinated debt (Note 15)	**2,685**	850	2,250
Repayment of subordinated debt (Note 15)	**(900)**	(100)	(2,200)
Proceeds from issuance of preferred shares (Note 16)	**400**	900	600
Redemption of preferred shares (Note 16)	**(300)**	(500)	–
Redemption of capital trust securities	**–**	–	(450)
Share issue expense	**(5)**	(9)	(6)
Proceeds from issuance of common shares (Note 16)	**88**	149	137
Common shares repurchased for cancellation (Note 16)	**(991)**	(440)	–
Cash dividends paid	**(2,582)**	(2,010)	(2,219)
Cash dividends paid to non-controlling interest	**–**	–	(10)
Net Cash Provided by Financing Activities	**2,737**	1,996	8,046
Cash Flows from Investing Activities			
Net (increase) decrease in interest bearing deposits with banks	**(1,648)**	(2,245)	3,007
Purchases of securities, other than trading	**(46,749)**	(30,424)	(28,860)
Maturities of securities, other than trading	**14,754**	5,930	6,985
Proceeds from sales of securities, other than trading	**23,561**	24,400	16,294
Purchase of non-controlling interest	**–**	(25)	–
Premises and equipment – net (purchases)	**(330)**	(301)	(224)
Purchased and developed software – net (purchases)	**(556)**	(490)	(387)
Acquisitions (Note 10)	**(365)**	–	(12,147)
Net Cash (Used in) Investing Activities	**(11,333)**	(3,155)	(15,332)
Effect of Exchange Rate Changes on Cash and Cash Equivalents	**227**	(803)	1,372
Net increase (decrease) in Cash and Cash Equivalents	**9,543**	946	(8,642)
Cash and Cash Equivalents at Beginning of Year	**32,599**	31,653	40,295
Cash and Cash Equivalents at End of Year (Note 2)	**$ 42,142**	$ 32,599	$ 31,653
Supplemental Disclosure of Cash Flow Information			
Net cash provided by operating activities includes:			
Interest paid in the year	**$ 8,790**	$ 5,826	$ 4,561
Income taxes paid in the year	**$ 1,261**	$ 1,338	$ 1,201
Interest received in the year	**$ 18,867**	$ 15,553	$ 14,273
Dividends received in the year	**$ 1,277**	$ 1,607	$ 1,336

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.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1: Basis of Presentation

Bank of Montreal ("the bank") 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. Its 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 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 4, 2018.

Basis of Consolidation

These consolidated financial statements are inclusive of the financial statements of our subsidiaries as at October 31, 2018. 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, investing 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. Joint ventures are those 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. Our equity accounted investments are recorded as other securities and our share of the net income or loss is recorded in investments in associates and joint ventures, in our Consolidated Statement of Income. Any other comprehensive income amounts are reflected in the relevant section of our Consolidated Statement of Comprehensive Income. Additional information regarding accounting for other securities is included in Note 3.

Non-controlling interest in subsidiaries is presented in our Consolidated Balance Sheet as a separate component of equity that is distinct from our shareholders' equity. The net income attributable to non-controlling interest in subsidiaries is presented separately in our Consolidated Statement of Income.

Specific 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 gain (loss) 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, 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 Wealth Management and Capital Markets on brokerage transactions executed for customers, generally as a fixed fee per share traded, where 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 or at a point in time, i.e. over the period that account maintenance and cash management services are provided, or 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 certain of our cards are recorded as a reduction in card fees.

Investment management and custodial fees are earned in 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 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 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 or milestones 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.

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

Financial Instruments

Effective November 1, 2017 we adopted IFRS 9 *Financial Instruments* ("IFRS 9"), which replaces IAS 39 *Financial Instruments: Recognition and Measurement* ("IAS 39"). IFRS 9 addresses impairment, classification and measurement, and hedge accounting. The impact to shareholders' equity at November 1, 2017 was an increase of $70 million ($44 million after-tax) related to the impairment requirements of the standard. Prior periods have not been restated. Refer to Note 28, Transition to IFRS 9, for the impact on the opening balance sheet at November 1, 2017 and for accounting policies under IAS 39, which were applicable in prior periods.

Impairment

IFRS 9 introduces a new expected credit loss ("ECL") impairment model for all financial assets and certain off-balance sheet loan commitments and guarantees. The new ECL model results in an allowance for credit losses being recorded on financial assets regardless of whether there has been an actual impairment. This differs from our previous approach where the allowance recorded on performing loans was designed to capture only incurred losses whether or not they have been specifically identified.

The ECL model requires the recognition of credit losses based on up to 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).

The determination of a significant increase in credit risk takes into account many different factors and will vary by product and risk segment. The main factors considered in making this determination are relative changes in probability-weighted probability of default since origination and certain other criteria such as 30-day past due and watchlist status. The allowance for assets in Stage 2 will be higher than for those in Stage 1 as a result of the longer time horizon associated with this stage. Stage 3 requires the recognition of lifetime losses for all credit impaired assets.

IFRS 9 requires consideration of past events, current market conditions and reasonable supportable information about future economic conditions, in determining whether there has been a significant increase in credit risk and in calculating the amount of expected losses. The standard also requires future economic conditions be based on an unbiased, probability-weighted assessment of possible future outcomes.

In considering the lifetime of an instrument, IFRS 9 generally requires the use of the contractual period, including pre-payment, extension and other options. For revolving instruments, such as credit cards, that may not have a defined contractual period, lifetime is based on historical behaviour.

Classification and Measurement

Debt instruments, including loans, are classified based on both our business model for managing the assets and the contractual cash flow characteristics of the assets. Debt instruments are measured at fair value through profit or loss ("FVTPL") unless certain conditions are met that permit measurement at either fair value through other comprehensive income ("FVOCI") or amortized cost.

FVOCI is permitted where debt instruments are held with the objective of selling the assets or collecting contractual cash flows and those 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 resulting prepayment risk, changes in credit risk, changes in foreign currency risk, changes in funding sources or terms, or to meet liquidity needs. Changes in fair value are recorded in other comprehensive income; gains or losses on disposal and impairment losses are recorded in our Consolidated Statement of Income.

Amortized cost is permitted where debt instruments are held with the objective of collecting contractual cash flows and those cash flows represent solely payments of principal and interest. Gains or losses on disposal and impairment losses are recorded in our Consolidated Statement of Income.

For both FVOCI and amortized cost instruments, premiums, discounts and transaction costs are amortized over the term of the instrument on an effective yield basis as an adjustment to interest income.

Equity instruments are measured at FVTPL unless we elect to measure at FVOCI, in which case gains and losses are never recognized in income.

As permitted by IFRS 9, in fiscal 2015, we have early adopted the provisions relating to the recognition of changes in own credit risk for financial liabilities designated at FVTPL. Additional information regarding changes in own credit risk is included in Notes 13 and 14.

Hedge Accounting

IFRS 9 introduced a new hedge accounting model that expands the scope of hedged items and risks eligible for hedge accounting and aligns hedge accounting more closely with risk management. The new model no longer specifies quantitative measures for effectiveness testing and does not permit hedge de-designation. IFRS 9 includes a policy choice that allows us to continue to apply the existing hedge accounting rules, which we have elected to use. However, as required by the standard, we adopted the new hedge accounting disclosures. Refer to Note 8.

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 include allowance for credit losses; financial instruments measured at fair value; pension and other employee future benefits; impairment of securities; income taxes and deferred taxes; goodwill and intangible assets; insurance-related liabilities; and 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 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.

We have established detailed policies and control procedures that are intended to ensure these judgments are well controlled, independently reviewed and consistently applied from period to period. We believe that our estimates of the value of our assets and liabilities are appropriate.

Allowance for Credit Losses

The expected credit loss model requires the recognition of credit losses based on up to 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 main factors considered in making this determination are relative changes in probability of default since origination, and 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 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 Notes 4 and 28.

Financial Instruments Measured at Fair Value

Fair value measurement techniques are used to value various financial assets and financial liabilities and are used in performing impairment testing on certain non-financial assets. Detailed discussions of our fair value measurement techniques are included in Note 17.

Pension and Other Employee Future Benefits

Our pension and other employee future benefits 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 benefits 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 other securities 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 other securities, 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 differ from those of taxing 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 may be utilized. We are required to assess whether it is probable that our deferred income tax assets will be realized prior to expiration and, based on all the available evidence, determine if any portion of our deferred income tax assets should not be recognized. 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 period remaining before the expiration of tax loss carryforwards. 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 the 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.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Provisions

The bank and its subsidiaries are involved in various legal actions in the ordinary course of business.

Provisions are recorded at the best estimate of the amounts required to settle any obligations related to these legal actions as at the balance sheet date, taking into account the risks and uncertainties associated with the obligation. Factors considered in making the assessment include: a case-by-case assessment of specific facts and circumstances, our past experience and the opinions of legal experts. Management and external experts are involved in estimating any provisions. The actual costs of resolving these claims may be substantially higher or lower than the amounts of the provisions.

Additional information regarding provisions is included in Note 24.

Transfer of Financial Assets and Consolidation of Structured Entities

We enter into transactions in which we transfer assets, typically mortgage loans and credit cards, to a structured entity or third party to obtain alternate sources of funding. We assess whether substantially all of the risks and rewards of the loans have been transferred to determine if they qualify for derecognition. Since we continue to be exposed to substantially all of the repayment, interest rate and/or credit risk associated with the securitized loans, they do not qualify for derecognition. We continue to recognize the loans 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 how activities are funded. We control and consolidate these vehicles when we have the key decision-making powers necessary to obtain the majority of the benefits of 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 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.

Future Changes in IFRS

Revenue

In May 2014, the IASB issued IFRS 15 *Revenue from Contracts with Customers* ("IFRS 15"), which replaces the existing standards for revenue recognition. The new standard establishes a framework for the recognition and measurement of revenues generated from contracts with customers, providing a principles-based approach for revenue recognition, and introduces the concept of recognizing revenue for performance obligations as they are satisfied. Revenues outside of the scope of IFRS 15 include interest and dividend income, trading revenues, securities gains/losses, insurance revenues, investments in associates and joint ventures and lease income. The standard also requires additional disclosures about the nature, amount, timing and uncertainty of revenues and cash flows arising from transactions with our customers.

In April 2016, the IASB issued clarifications to IFRS 15, which provided additional clarity on revenue recognition related to identifying performance obligations, application guidance on principal versus agent and licences of intellectual property.

The primary impact of IFRS 15 will be the reclassification of amounts within the Consolidated Statement of Income. Loyalty rewards and cash promotion costs on cards currently recorded in non-interest expense will be presented as a reduction in non-interest revenue. Reimbursement of certain expenses incurred on behalf of customers currently recorded as a reduction in non-interest expense will be recorded in non-interest revenue. In addition, there will be minimal impacts to net income as a result of no longer discounting our loyalty rewards costs and the amortization of costs to obtain card customers, which are currently expensed as incurred.

On transition to IFRS 15 on November 1, 2018, we can either restate prior periods as if we had always applied IFRS 15 or alternatively, we can recognize the cumulative effect of any changes resulting from our adoption of IFRS 15 in opening retained earnings with no comparison for prior years. We have elected to restate prior periods.

The impact of adopting IFRS 15 in 2018 and 2017 would have been a decrease in non-interest revenue of $132 million and $153 million, a decrease in non-interest expense of $136 million and $138 million, and an increase in net income of $3 million and a decrease in net income of $11 million, in our Consolidated Statement of Income, respectively. The impact in our Consolidated Balance Sheet as at October 31, 2018 and 2017 is not significant.

Share-based Payment

In June 2016, the IASB issued amendments to IFRS 2 *Share-based Payment* ("IFRS 2") in relation to the classification and measurement of share-based payment transactions. The amendments will not have a significant impact on our consolidated financial statements. The amendments are effective for our fiscal year beginning November 1, 2018.

Leases

In January 2016, the IASB issued IFRS 16 *Leases* ("IFRS 16"), which provides guidance for leases whereby lessees will recognize a liability for the present value of future lease liabilities and record a corresponding asset on the balance sheet for most leases. There are minimal changes to lessor accounting. IFRS 16 is effective for our fiscal year beginning November 1, 2019.

In order to meet the requirements of IFRS 16, we have established an enterprise-wide project and are currently assessing the impact of the standard on our future financial results. The main impact identified to date is the requirement to record real estate leases on balance sheet. Currently, most of our real estate leases are classified as operating leases, whereby we record lease expense over the term of the lease with no asset or liability recorded on the balance sheet other than any related leasehold improvements. Under IFRS 16, we will recognize a right-of-use asset and a lease liability on the balance sheet. There will be no significant impact on our lessor businesses.

When we adopt IFRS 16, we can either recognize the cumulative effect of any changes resulting from our adoption of IFRS 16 in opening retained earnings with no comparison for prior years or alternatively, we can restate prior periods as if we had always applied IFRS 16. We are assessing our transition approach as part of our project.

Insurance Contracts
In May 2017, the IASB issued IFRS 17 *Insurance Contracts* ("IFRS 17"), which provides a comprehensive approach to accounting for all types of insurance contracts and will replace the existing IFRS 4 *Insurance Contracts*. In November 2018, the IASB tentatively decided to defer the effective date of IFRS 17 by one year, which would change the anticipated effective date for the bank to November 1, 2022. We will continue to closely monitor the ongoing discussions at the IASB. We are currently assessing the impact of the standard on our future financial results.

Conceptual Framework
In March 2018, the IASB issued 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, which is effective for our fiscal year beginning November 1, 2020, will inform future standard-setting decisions but does not impact existing IFRS. We do not expect the Framework to have a significant impact on our accounting policies.

Note 2: Cash and Interest Bearing Deposits with Banks

(Canadian $ in millions)	**2018**	2017
Cash and deposits with banks (1)	**40,738**	30,002
Cheques and other items in transit, net	**1,404**	2,597
Total cash and cash equivalents	**42,142**	32,599

(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 $1,655 million as at October 31, 2018 ($1,435 million in 2017).

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 and losses, 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 reliably measurable fair values 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 as 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 as at October 31, 2018 of $8,783 million ($8,465 million as at October 31, 2017) 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 $372 million in non-interest revenue, insurance revenue, for the year ended October 31, 2018 (increase of $39 million for the year ended October 31, 2017).

Securities Mandatorily Measured at FVTPL
Securities managed on a fair value basis, but not held for trading, or debt securities whose cash flows do not represent solely payments of principal and interest and equity securities not held for trading are classified as FVTPL.

Debt securities measured 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 subsequently measured at amortized cost using the effective interest method. Impairment losses (recoveries) are recorded in our Consolidated Statement of Income in 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.

Debt securities measured 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 resulting prepayment risk, changes in credit risk, changes in foreign currency risk, changes in funding sources or terms, or 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 measured at FVOCI are equity securities where 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.

Other securities are investments in associates and joint ventures where we exert significant influence over operating, investing 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 of accounting. Our share of the net income or loss is recorded in investments in associates and joint ventures in our Consolidated Statement of Income. Any other comprehensive income amounts are reflected in the relevant section 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 classified as amortized cost or FVOCI are assessed for impairment using the ECL model, with the exception of securities determined to have low credit risk where the allowance for credit losses is measured at a 12 month expected credit loss. A financial asset is considered to have low credit risk if the financial asset 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.

Classification of Securities

Our securities are classified as at October 31, 2018 under IFRS 9 and as at October 31, 2017 under IAS 39 as follows:

(Canadian $ in millions)	**2018**	2017
Trading	**99,697**	99,069
FVTPL (1)	**11,611**	na
FVOCI - Debt and Equity (2)	**62,440**	na
Available-for-sale	**na**	54,075
Amortized cost (3)	**6,485**	na
Held-to-maturity	**na**	9,094
Other	**702**	960
	180,935	163,198

(1) Comprised of $2,828 million mandatorily measured at fair value and $8,783 million designated at fair value.
(2) Includes allowances for credit losses on FVOCI debt securities of $2 million (na at October 31, 2017).
(3) Net of allowances for credit losses of $1 million (na at October 31, 2017).

na – not applicable due to IFRS 9 adoption.

Fair Value Measurement

For traded securities, quoted market value is considered to be fair value. Quoted market value is based on bid prices. For securities where market quotes are not available, we use estimation techniques to determine fair value. A discussion of fair value measurement is included in Note 17.

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Classified under IFRS 9

(Canadian $ in millions, except as noted)	Term to maturity					2018
	Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	Total
Trading Securities						
Issued or guaranteed by:						
Canadian federal government	4,103	2,195	2,038	1,077	907	10,320
Canadian provincial and municipal governments	1,293	2,029	1,235	1,355	2,790	8,702
U.S. federal government	2,684	2,835	1,260	1,895	843	9,517
U.S. states, municipalities and agencies	756	135	29	114	182	1,216
Other governments	485	557	330	40	–	1,412
NHA MBS, U.S. agency MBS and CMO (1)	382	497	477	346	7,482	9,184
Corporate debt	2,635	1,821	1,295	1,413	2,034	9,198
Loans	14	82	55	48	–	199
Corporate equity	–	–	–	–	49,949	49,949
Total trading securities	12,352	10,151	6,719	6,288	64,187	99,697
FVTPL Securities						
Issued or guaranteed by:						
Canadian federal government	328	–	4	2	97	431
Canadian provincial and municipal governments	–	23	5	22	896	946
U.S. federal government	69	–	–	–	–	69
NHA MBS, U.S. agency MBS and CMO (1)	–	3	4	–	–	7
Corporate debt	616	56	125	692	5,331	6,820
Corporate equity	–	–	–	–	3,338	3,338
Total FVTPL securities	1,013	82	138	716	9,662	11,611
FVOCI Securities						
Issued or guaranteed by:						
Canadian federal government						
Amortized cost	6,600	4,036	1,711	537	–	12,884
Fair value	6,592	4,006	1,688	519	–	12,805
Yield (%)	1.52	1.58	2.09	2.14	–	1.64
Canadian provincial and municipal governments						
Amortized cost	3,200	1,229	1,742	713	12	6,896
Fair value	3,204	1,227	1,726	693	12	6,862
Yield (%)	1.36	1.81	2.67	2.59	3.58	1.90
U.S. federal government						
Amortized cost	462	1,604	7,116	8,221	–	17,403
Fair value	454	1,595	6,858	7,916	–	16,823
Yield (%)	2.39	2.61	1.98	2.35	–	2.22
U.S. states, municipalities and agencies						
Amortized cost	356	684	542	1,177	935	3,694
Fair value	355	678	540	1,158	924	3,655
Yield (%)	1.69	2.07	2.59	2.59	2.66	2.42
Other governments						
Amortized cost	1,193	1,187	2,135	303	–	4,818
Fair value	1,192	1,183	2,113	302	–	4,790
Yield (%)	1.82	2.21	2.74	2.87	–	2.39
NHA MBS (1)						
Amortized cost	306	62	2,014	–	–	2,382
Fair value	310	62	1,998	–	–	2,370
Yield (%)	1.95	1.32	2.00	–	–	1.98
U.S. agency MBS and CMO (1)						
Amortized cost	–	13	109	1,819	9,870	11,811
Fair value	–	13	106	1,761	9,437	11,317
Yield (%)	–	2.31	2.50	2.51	2.29	2.33
Corporate debt						
Amortized cost	672	1,992	569	509	41	3,783
Fair value	671	1,980	566	498	41	3,756
Yield (%)	1.45	2.86	2.87	3.24	4.02	2.67
Corporate equity						
Amortized cost	–	–	–	–	62	62
Fair value	–	–	–	–	62	62
Yield (%)	–	–	–	–	–	–
Total cost or amortized cost	12,789	10,807	15,938	13,279	10,920	63,733
Total fair value	12,778	10,744	15,595	12,847	10,476	62,440
Yield (%)	1.55	2.09	2.23	2.44	2.32	2.13
Amortized Cost Securities						
Issued or guaranteed by:						
Canadian provincial and municipal governments						
Amortized cost	230	280	143	179	–	832
Fair value	230	282	145	184	–	841
Other governments						
Amortized cost	–	3	7	–	–	10
Fair value	–	3	7	–	–	10
NHA MBS, U.S. agency MBS and CMO (1)						
Amortized cost	171	452	–	1,884	3,045	5,552
Fair value	171	454	–	1,808	2,913	5,346
Corporate debt						
Amortized cost	1	10	10	5	65	91
Fair value	1	10	10	5	65	91
Total cost or amortized cost	402	745	160	2,068	3,110	6,485
Total fair value	402	749	162	1,997	2,978	6,288
Other Securities						
Carrying value	–	–	–	–	702	702
Total carrying value or amortized cost of securities	26,556	21,785	22,955	22,351	88,581	182,228
Total value of securities	26,545	21,722	22,612	21,919	88,137	180,935
Total by Currency (in Canadian $ equivalent)						
Canadian dollar	18,091	12,284	9,782	5,475	37,135	82,767
U.S. dollar	7,799	9,423	12,718	16,404	49,922	96,266
Other currencies	655	15	112	40	1,080	1,902
Total securities	26,545	21,722	22,612	21,919	88,137	180,935

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Classified under IAS 39

(Canadian $ in millions, except as noted)	Term to maturity					2017
	Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	Total
Trading Securities						
Issued or guaranteed by:						
Canadian federal government	4,862	1,527	2,021	1,313	1,104	10,827
Canadian provincial and municipal governments	812	1,343	714	1,991	2,467	7,327
U.S. federal government	1,332	1,758	2,000	1,906	2,477	9,473
U.S. states, municipalities and agencies	642	222	86	100	1,081	2,131
Other governments	85	438	266	34	–	823
NHA MBS, U.S. agency MBS and CMO (1)	147	571	203	8	2	931
Corporate debt	1,298	1,375	795	1,281	7,014	11,763
Loans	–	28	7	118	–	153
Corporate equity	–	–	–	–	55,641	55,641
Total trading securities	9,178	7,262	6,092	6,751	69,786	99,069
Available-for-Sale Securities						
Issued or guaranteed by:						
Canadian federal government						
Amortized cost	5,585	1,764	1,266	597	–	9,212
Fair value	5,578	1,749	1,262	591	–	9,180
Yield (%)	0.66	1.48	1.46	1.57	–	0.99
Canadian provincial and municipal governments						
Amortized cost	1,157	265	1,293	860	38	3,613
Fair value	1,156	266	1,310	855	40	3,627
Yield (%)	0.85	1.45	2.24	2.32	3.27	1.77
U.S. federal government						
Amortized cost	15	–	3,128	11,338	–	14,481
Fair value	17	–	3,115	11,137	–	14,269
Yield (%)	0.88	–	1.81	1.80	–	1.80
U.S. states, municipalities and agencies						
Amortized cost	370	563	463	1,329	1,333	4,058
Fair value	370	566	467	1,357	1,336	4,096
Yield (%)	1.63	1.78	2.26	2.40	1.71	2.00
Other governments						
Amortized cost	1,592	1,231	725	19	–	3,567
Fair value	1,593	1,225	722	18	–	3,558
Yield (%)	1.44	1.34	1.52	2.72	–	1.43
NHA MBS (1)						
Amortized cost	255	1,143	1,059	–	–	2,457
Fair value	262	1,141	1,052	–	–	2,455
Yield (%)	2.05	1.83	1.56	–	–	1.74
U.S. agency MBS and CMO – U.S. (1)						
Amortized cost	1	20	62	658	10,161	10,902
Fair value	1	19	62	659	10,020	10,761
Yield (%)	1.83	3.12	2.25	2.31	1.97	1.99
Corporate debt						
Amortized cost	995	2,082	737	607	93	4,514
Fair value	997	2,080	734	619	95	4,525
Yield (%)	0.75	2.08	2.48	3.08	3.64	2.02
Corporate equity						
Amortized cost	–	–	–	–	1,499	1,499
Fair value	–	–	–	–	1,604	1,604
Yield (%)	–	–	–	–	2.37	2.37
Total cost or amortized cost	9,970	7,068	8,733	15,408	13,124	54,303
Total fair value	9,974	7,046	8,724	15,236	13,095	54,075
Yield (%)	0.89	1.72	1.85	1.95	2.00	1.72
Held-to-Maturity Securities						
Issued or guaranteed by:						
Canadian federal government						
Amortized cost	1,855	–	–	–	–	1,855
Fair value	1,857	–	–	–	–	1,857
Canadian provincial and municipal governments						
Amortized cost	735	510	–	322	–	1,567
Fair value	737	512	–	341	–	1,590
NHA MBS, U.S. agency MBS and CMO (1)						
Amortized cost	191	485	364	999	3,633	5,672
Fair value	191	486	366	997	3,609	5,649
Total cost or amortized cost	2,781	995	364	1,321	3,633	9,094
Total fair value	2,785	998	366	1,338	3,609	9,096
Other Securities						
Carrying value	7	21	13	38	881	960
Total carrying value or amortized cost of securities	21,936	15,346	15,202	23,518	87,424	163,426
Total value of securities	21,940	15,324	15,193	23,346	87,395	163,198
Total by Currency (in Canadian $ equivalent)						
Canadian dollar	16,959	8,546	7,222	6,235	41,261	80,223
U.S. dollar	3,948	6,662	7,916	17,087	44,384	79,997
Other currencies	1,033	116	55	24	1,750	2,978
Total securities	21,940	15,324	15,193	23,346	87,395	163,198

(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 tables 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. Equity securities with no maturity date are included in the over 10 years category.

Unrealized Gains and Losses

The following table summarizes the unrealized gains and losses on FVOCI securities as at October 31, 2018 under IFRS 9 and the unrealized gains and losses on available-for-sale securities as at October 31, 2017 under IAS 39.

(Canadian $ in millions)	2018				2017			
	Amortized cost	**Gross unrealized gains**	**Gross unrealized losses**	**Fair value**	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Issued or guaranteed by:								
Canadian federal government	**12,884**	**1**	**80**	**12,805**	9,212	6	38	9,180
Canadian provincial and municipal governments	**6,896**	**8**	**42**	**6,862**	3,613	29	15	3,627
U.S. federal government	**17,403**	**4**	**584**	**16,823**	14,481	12	224	14,269
U.S. states, municipalities and agencies	**3,694**	**16**	**55**	**3,655**	4,058	43	5	4,096
Other governments	**4,818**	**2**	**30**	**4,790**	3,567	3	12	3,558
NHA MBS	**2,382**	**6**	**18**	**2,370**	2,457	9	11	2,455
U.S. agency MBS and CMO	**11,811**	**2**	**496**	**11,317**	10,902	6	147	10,761
Corporate debt	**3,783**	**6**	**33**	**3,756**	4,514	23	12	4,525
Corporate equity	**62**	**–**	**–**	**62**	1,499	121	16	1,604
Total	**63,733**	**45**	**1,338**	**62,440**	54,303	252	480	54,075

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 financial statements as follows, excluding other securities and trading securities. Related income for trading securities is included in Note 17 Trading-Related Revenue.

(Canadian $ in millions)	**2018**	2017	2016
FVTPL	**16**	na	na
FVOCI	**1,118**	na	na
Amortized cost	**172**	na	na
Available-for-sale securities	**na**	662	509
Held-to-maturity securities	**na**	150	143
Total	**1,306**	812	652

na – not applicable due to IFRS 9 adoption.
Certain comparative figures have been reclassified to conform with the current year's presentation.

Non-Interest Revenue

Net gains and losses from securities, excluding net realized and unrealized gains on trading securities, have been included in our Consolidated Statement of Income as follows:

(Canadian $ in millions)	**2018**	2017	2016
Non-Interest Revenue			
FVTPL securities	**106**	na	na
FVOCI securities (1)			
Gross realized gains	**363**	228	59
Gross realized (losses)	**(216)**	(99)	(16)
Unrealized gains on investments reclassified from available-for-sale to other	**na**	–	7
Other securities, net realized and unrealized gains	**–**	49	51
Impairment write-downs	**(14)**	(7)	(17)
Securities gains, other than trading (2)	**239**	171	84

(1) Realized gains (losses) are net of unrealized gains (losses) on related hedge contracts. Fiscal 2017 and prior years represent available-for-sale securities (Note 1).
(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 $354 million for the year ended October 31, 2018 ($325 million in 2017); and securities gains, other than trading, of $1 million for the year ended October 31, 2018 ($nil in 2017).

Unrealized gains and losses on trading securities are included in trading-related revenue in Note 17.

na – not applicable due to IFRS 9 adoption.

Note 4: Loans and Allowance for Credit Losses

Loans are initially measured at fair value plus directly attributable costs, and are subsequently measured at amortized cost using the effective interest method. 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 arise in Personal and Commercial Banking and 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 the 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 when one or more loss events have occurred, such as bankruptcy, default or delinquency. 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 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 continue 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 past due more than 90 days (180 days for credit card loans). Overdrafts are considered to be past due once the customer has breached an advised limit or been advised of a limit smaller 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.

Our average gross impaired loans were $2,115 million for the year ended October 31, 2018 ($2,248 million in 2017). Our average impaired loans, net of the specific allowance, were $1,706 million for the year ended October 31, 2018 ($1,838 million in 2017).

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 and presented as interest income. Interest income on impaired loans of $67 million was recognized for the year ended October 31, 2018 ($75 million in 2017 and $74 million in 2016).

During the year ended October 31, 2018, we recorded a net gain of $4 million before tax ($28 million in 2017 and $5 million in 2016) 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 $1,870 million as at October 31, 2018, of which $1,639 million was recorded in loans and $231 million was recorded in other liabilities in our Consolidated Balance Sheet.

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 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 main factors considered in making this determination are relative changes in probability-weighted probability of default since origination and certain other criteria, such as 30-day past due and watchlist status.

For each exposure, ECL is 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, 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 a 12 month horizon for Stage 1 or a lifetime horizon for Stage 2. The 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 on historical data and represents an estimate of the outstanding amount of credit exposure 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 forward-looking supportable information about future economic conditions in calculating the amount of expected losses. In assessing information about possible future economic conditions, we utilize multiple economic scenarios including our base case, which represents, in our view, the most probable outcome, as well as benign and adverse forecasts, 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.

Allowance on Impaired Loans
We maintain an allowance on individually identified impaired loans (Stage 3) of $370 million on our gross impaired loans of $1,936 million, to reduce their carrying value to an expected recoverable amount of $1,566 million as at October 31, 2018 ($1,827 million as at October 31, 2017). We review our loans on an ongoing basis to assess whether any loans should be classified as impaired and whether an allowance or write-off should be recorded (excluding credit card loans, which are classified as impaired and 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, consumer instalment and other personal loans are individually insignificant and may be individually assessed or collectively assessed 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.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Loans Credit Risk Exposure

The following table sets out our credit risk exposure for all loans carried at amortized cost or FVTPL as at October 31, 2018. Stage 1 represents those performing loans carried with 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 credit loss that are credit impaired.

(Canadian $ in millions)				2018
	Stage 1	**Stage 2**	**Stage 3**	**Total**
Loans: Residential mortgages				
Exceptionally low	–	–	–	–
Very low	**76,314**	**125**	–	**76,439**
Low	**18,975**	**2,479**	–	**21,454**
Medium	**12,621**	**3,765**	–	**16,386**
High	**90**	**445**	–	**535**
Not rated	**4,250**	**181**	–	**4,431**
Impaired	–	–	**375**	**375**
Allowance for credit losses	**20**	**37**	**19**	**76**
Carrying amount	**112,230**	**6,958**	**356**	**119,544**
Loans: Consumer instalment and other personal				
Exceptionally low	**20,236**	**20**	–	**20,256**
Very low	**13,364**	**222**	–	**13,586**
Low	**12,581**	**364**	–	**12,945**
Medium	**7,707**	**4,153**	–	**11,860**
High	**127**	**1,657**	–	**1,784**
Not rated	**2,105**	**168**	–	**2,273**
Impaired	–	–	**521**	**521**
Allowance for credit losses	**83**	**312**	**143**	**538**
Carrying amount	**56,037**	**6,272**	**378**	**62,687**
Loans: Credit cards				
Exceptionally low	**2,403**	**4**	–	**2,407**
Very low	**1,140**	**11**	–	**1,151**
Low	**943**	**107**	–	**1,050**
Medium	**1,742**	**874**	–	**2,616**
High	**108**	**428**	–	**536**
Not rated	**568**	**1**	–	**569**
Impaired	–	–	–	–
Allowance for credit losses	**39**	**191**	–	**230**
Carrying amount	**6,865**	**1,234**	–	**8,099**
Loans: Business and government (1)				
Acceptable				
Investment grade	**109,774**	**2,148**	–	**111,922**
Sub-investment grade	**88,348**	**7,308**	–	**95,656**
Watchlist	–	**4,423**	–	**4,423**
Impaired	–	–	**1,040**	**1,040**
Allowance for credit losses	**232**	**355**	**208**	**795**
Carrying amount	**197,890**	**13,524**	**832**	**212,246**
Commitments and financial guarantee contracts				
Acceptable				
Investment grade	**116,108**	**1,722**	–	**117,830**
Sub-investment grade	**44,895**	**3,426**	–	**48,321**
Watchlist	–	**1,650**	–	**1,650**
Impaired	–	–	**242**	**242**
Allowance for credit losses	**108**	**96**	**27**	**231**
Carrying amount	**160,895**	**6,702**	**215**	**167,812**

(1) Includes customers' liability under acceptances.

The following table shows the continuity in the loss allowance by each product type as at October 31, 2018.

(Canadian $ in millions)

For the twelve months ended	Stage 1	Stage 2	Stage 3	Total
Loans: Residential mortgages				
Balance as at November 1, 2017	**16**	**34**	**49**	**99**
Transfer to Stage 1	**34**	**(31)**	**(3)**	**–**
Transfer to Stage 2	**(1)**	**7**	**(6)**	**–**
Transfer to Stage 3	**–**	**(9)**	**9**	**–**
Net remeasurement of loss allowance	**(37)**	**42**	**19**	**24**
Loan originations	**10**	**–**	**–**	**10**
Derecognitions and maturities	**(2)**	**(6)**	**–**	**(8)**
Total provision for credit losses ("PCL") (1)	**4**	**3**	**19**	**26**
Write-offs	**–**	**–**	**(20)**	**(20)**
Recoveries of previous write-offs	**–**	**–**	**7**	**7**
Foreign exchange and other	**–**	**1**	**(11)**	**(10)**
Balance as at October 31, 2018	**20**	**38**	**44**	**102**
Loans: Consumer instalment and other personal				
Balance as at November 1, 2017	**76**	**357**	**137**	**570**
Transfer to Stage 1	**214**	**(200)**	**(14)**	**–**
Transfer to Stage 2	**(22)**	**105**	**(83)**	**–**
Transfer to Stage 3	**(4)**	**(162)**	**166**	**–**
Net remeasurement of loss allowance	**(196)**	**272**	**162**	**238**
Loan originations	**39**	**–**	**–**	**39**
Derecognitions and maturities	**(18)**	**(50)**	**–**	**(68)**
Total PCL (1)	**13**	**(35)**	**231**	**209**
Write-offs	**–**	**–**	**(301)**	**(301)**
Recoveries of previous write-offs	**–**	**–**	**92**	**92**
Foreign exchange and other	**1**	**4**	**(15)**	**(10)**
Balance as at October 31, 2018	**90**	**326**	**144**	**560**
Loans: Credit cards				
Balance as at November 1, 2017	**83**	**254**	**–**	**337**
Transfer to Stage 1	**177**	**(177)**	**–**	**–**
Transfer to Stage 2	**(37)**	**37**	**–**	**–**
Transfer to Stage 3	**(1)**	**(195)**	**196**	**–**
Net remeasurement of loss allowance	**(164)**	**342**	**20**	**198**
Loan originations	**19**	**–**	**–**	**19**
Derecognitions and maturities	**(3)**	**(42)**	**–**	**(45)**
Total PCL (1)	**(9)**	**(35)**	**216**	**172**
Write-offs	**–**	**–**	**(319)**	**(319)**
Recoveries of previous write-offs	**–**	**–**	**103**	**103**
Balance as at October 31, 2018	**74**	**219**	**–**	**293**
Loans: Business and government				
Balance as at November 1, 2017	**268**	**410**	**234**	**912**
Transfer to Stage 1	**136**	**(128)**	**(8)**	**–**
Transfer to Stage 2	**(31)**	**66**	**(35)**	**–**
Transfer to Stage 3	**(1)**	**(61)**	**62**	**–**
Net remeasurement of loss allowance	**(155)**	**203**	**215**	**263**
Loan originations	**163**	**–**	**–**	**163**
Derecognitions and maturities	**(80)**	**(86)**	**–**	**(166)**
Model changes	**(7)**	**(3)**	**–**	**(10)**
Total PCL (1)	**25**	**(9)**	**234**	**250**
Write-offs	**–**	**–**	**(297)**	**(297)**
Recoveries of previous write-offs	**–**	**–**	**59**	**59**
Foreign exchange and other	**5**	**7**	**(21)**	**(9)**
Balance as at October 31, 2018	**298**	**408**	**209**	**915**
Total as at October 31, 2018	**482**	**991**	**397**	**1,870**
Comprised of: Loans	**374**	**895**	**370**	**1,639**
Other credit instruments (2)	**108**	**96**	**27**	**231**

(1) Excludes provision for credit losses on other assets of $5 million.
(2) Recorded in other liabilities on the Consolidated Balance Sheet.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following table shows the continuity of our allowance for credit losses under IAS 39 as at October 31, 2017:

(Canadian $ in millions)	Residential mortgages		Credit card, consumer instalment and other personal loans		Business and government loans		Total	
	2017	2016	2017	2016	2017	2016	2017	2016
Impairment allowances (specific ACL), beginning of year	59	69	123	113	250	210	432	392
Amounts written off	(27)	(38)	(631)	(616)	(296)	(349)	(954)	(1,003)
Recoveries of amounts written off in previous years	16	16	199	173	50	154	265	343
Charge to income statement (specific PCL)	11	24	464	478	347	269	822	771
Foreign exchange and other movements	(10)	(12)	(18)	(25)	(117)	(34)	(145)	(71)
Specific ACL, end of year	49	59	137	123	234	250	420	432
Collective ACL, beginning of year	71	111	596	714	1,015	835	1,682	1,660
Charge (recovery) to income statement (collective PCL)	(1)	(42)	(6)	(120)	(69)	162	(76)	–
Foreign exchange and other movements	(1)	2	(4)	2	(25)	18	(30)	22
Collective ACL, end of year	69	71	586	596	921	1,015	1,576	1,682
Total ACL	118	130	723	719	1,155	1,265	1,996	2,114
Comprised of: Loans	93	104	722	719	1,018	1,102	1,833	1,925
Other credit instruments (1)	25	26	1	–	137	163	163	189

(1) The total specific and collective allowances related to other credit instruments are included in other liabilities.

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

Significant changes in the gross balances, including originations, maturities and repayments in the normal course of operations, impact the allowance for credit losses.

Loans and allowance for credit losses by geographic region as at October 31, 2018 under IFRS 9 and as at October 31, 2017 under IAS 39 are as follows:

(Canadian $ in millions)	2018				2017			
	Gross amount	**Allowance on impaired loans** (2)	**Allowance on performing loans** (3)	**Net amount**	Gross amount	Specific allowance (2)	Collective allowance (3)	Net amount
By geographic region: (1)								
Canada	**244,837**	**189**	**689**	**243,959**	233,672	212	799	232,661
United States	**131,247**	**181**	**574**	**130,492**	115,029	161	641	114,227
Other countries	**9,546**	**–**	**6**	**9,540**	11,639	20	–	11,619
Total	**385,630**	**370**	**1,269**	**383,991**	360,340	393	1,440	358,507

(1) Geographic region is based upon the country of ultimate risk.
(2) Excludes allowance for credit losses on impaired loans of $27 million for other credit instruments, which is included in other liabilities ($27 million in 2017).
(3) Excludes allowance for credit losses on performing loans of $204 million for other credit instruments, which is included in other liabilities ($136 million in 2017).

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

Impaired loans, including the related allowances, as at October 31, 2018 under IFRS 9 and as at October 31, 2017 under IAS 39 are as follows:

(Canadian $ in millions)	Gross impaired amount (1)		**Allowance on impaired loans** (3)	Specific allowance (3)	**Net**	Net impaired amount
	2018	2017	**2018**	2017	**2018**	2017
Residential mortgages	**375**	391	**19**	24	**356**	367
Consumer instalment and other personal loans	**521**	556	**143**	136	**378**	420
Business and government loans	**1,040**	1,273	**208**	233	**832**	1,040
Total	**1,936**	2,220	**370**	393	**1,566**	1,827
By geographic region: (2)						
Canada	**735**	793	**189**	212	**546**	581
United States	**1,201**	1,377	**181**	161	**1,020**	1,216
Other countries	**–**	50	**–**	20	**–**	30
Total	**1,936**	2,220	**370**	393	**1,566**	1,827

(1) Excludes purchased credit impaired loans.
(2) Geographic region is based upon the country of ultimate risk.
(3) Excludes allowance for credit losses on impaired loans of $27 million for other credit instruments, which is included in other liabilities ($27 million in 2017).

Fully secured loans with amounts past due between 90 and 180 days that we have not classified as impaired totalled $49 million and $62 million as at October 31, 2018 and 2017, respectively.

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

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 which are held at fair value. The following table presents loans that are past due but not classified as impaired as at October 31, 2018 and 2017.

(Canadian $ in millions)	1 to 29 days		30 to 89 days		90 days or more		Total	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017
Residential mortgages (1)	**660**	649	**513**	438	**21**	19	**1,194**	1,106
Credit card, consumer instalment and other personal loans	**1,431**	1,480	**415**	466	**88**	94	**1,934**	2,040
Business and government loans	**611**	589	**268**	297	**55**	72	**934**	958
Total	**2,702**	2,718	**1,196**	1,201	**164**	185	**4,062**	4,104

(1) The percentage of loans 90 days or more past due but not impaired that were guaranteed by the Government of Canada is 66% for 2018 and 67% for 2017.

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.

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 $1,250 million as at October 31, 2018 compared to the reported allowance for performing loans of $1,473 million.

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 $2,650 million as at October 31, 2018, compared to the reported allowance for performing loans of $1,473 million.

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 we use to estimate our allowance on performing loans during the forecast period. The values shown represent the end of period national average values for the first 12 months and then the national average for the remaining horizon. While the values disclosed below are national variables, in our underlying models we use regional variables where considered appropriate.

	Benign scenario		**Base scenario**		**Adverse scenario**	
As at October 31, 2018	**First 12 months**	**Remaining horizon** (1)	**First 12 months**	**Remaining horizon** (1)	**First 12 months**	**Remaining horizon** (1)
Real gross domestic product (2)						
Canada	**3.1%**	**2.4%**	**1.8%**	**1.6%**	**(3.2)%**	**0.8%**
U.S.	**2.9%**	**1.9%**	**2.4%**	**1.6%**	**(2.9)%**	**0.9%**
Corporate BBB 10-year spread						
Canada	**2.0%**	**2.1%**	**2.3%**	**2.3%**	**4.7%**	**3.9%**
U.S.	**1.8%**	**2.0%**	**2.2%**	**2.3%**	**4.3%**	**3.5%**
Unemployment rates						
Canada	**5.4%**	**5.2%**	**5.6%**	**5.6%**	**9.3%**	**9.3%**
U.S.	**3.2%**	**3.1%**	**3.6%**	**3.7%**	**6.7%**	**6.8%**
Housing Price Index						
Canada (3)	**2.4%**	**2.6%**	**1.4%**	**1.8%**	**(12.8)%**	**(3.2)%**
U.S. (4)	**5.1%**	**4.3%**	**3.6%**	**3.0%**	**(7.3)%**	**(1.2)%**

(1) The remaining forecast period is two years.
(2) Real gross domestic product is based on year over year growth.
(3) In Canada, we use the HPI Benchmark Composite.
(4) In the U.S., we use the National Case-Shiller House Price Index.

The ECL approach requires the recognition of credit losses based on up to 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 $1,000 million compared to the reported allowance for performing loans of $1,473 million.

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 are permitted to 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 continue to apply.

The carrying value of our renegotiated loans was $1,129 million as at October 31, 2018 ($1,064 million in 2017). Renegotiated loans of $541 million were classified as performing during the year ended October 31, 2018 ($509 million in 2017). Renegotiated loans of $53 million were written off in the year ended October 31, 2018 ($36 million in 2017).

Foreclosed Assets

Property or other assets that we receive from borrowers to satisfy their loan commitments are classified as either held for use or held for sale according to management's intention and are recorded at their carrying amount.

During the year ended October 31, 2018, we foreclosed on impaired loans and received $117 million of real estate properties that we classified as held for sale ($62 million in 2017).

As at October 31, 2018, real estate properties held for sale totalled $58 million ($55 million in 2017). These properties are disposed of when considered appropriate. During the year ended October 31, 2018, we recorded an impairment loss of $10 million on real estate properties classified as held for sale ($10 million in 2017 and $18 million in 2016).

Write-offs Subject to Collection Efforts

Generally, we continue to seek recovery on amounts that were written off during the period unless the loan is sold, we no longer have the right to collect or we have exhausted all reasonable efforts to collect.

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 on pages 87 and 88 of 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.

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 text and tables presented in a blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis on pages 87 to 91 of this report. Additional information on credit risk related to loans and derivatives is disclosed 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, 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. We incur market risk in our trading and underwriting activities and in the management of structural market risk in our banking and insurance activities.

Our market risk management practices and key measures are disclosed in the text and tables presented in a blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis on pages 95 to 99 of 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, and lending, investment and pledging commitments, even in times of stress. Managing liquidity and funding risk is essential to maintaining a safe and sound enterprise, depositor confidence and earnings stability.

Our liquidity and funding risk management practices and key measures are disclosed in the text presented in a blue-tinted font in the Enterprise-Wide Risk Management section of Management's Discussion and Analysis on pages 100 to 108 of this report.

Note 6: Transfer of Assets

Loan Securitization

We sell Canadian mortgage loans 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 program and under our own program. We assess whether substantially all of the risks and rewards of the loans have been transferred to determine if 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 loans that were sold, over the yield paid to investors, less credit losses and other costs. Since we continue to be exposed to substantially all of the prepayment, interest rate and credit risk associated with the securitized loans, they do not qualify for derecognition. We continue to recognize the loans 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, is recorded in net interest income using the effective interest method over the term of the securitization. Credit losses associated with the loans are recorded in the provision for credit losses. During the year ended October 31, 2018, we sold $8,062 million of mortgage loans to these programs ($8,707 million in 2017).

The following table presents the carrying amount and fair value of transferred assets that did not qualify for derecognition and the associated liabilities:

(Canadian $ in millions)	2018		2017	
	Carrying amount of assets (1)	**Carrying amount of associated liabilities**	Carrying amount of assets (1)	Carrying amount of associated liabilities
Residential mortgages	**5,569**		4,797	
Other related assets (2)	**11,640**		12,091	
Total (3)	**17,209**	**16,925**	16,888	16,621

(1) Carrying amount of loans is net of allowance.
(2) Other related assets represent payments received on account of loans pledged under securitization programs that have not yet been applied against the associated liabilities. The payments received are held 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.
(3) The fair values of assets and associated liabilities are $17,105 million and $16,763 million, respectively, as at October 31, 2018 ($16,847 million and $16,746 million, respectively, in 2017).

We retain the mortgage servicing rights for certain mortgage loans purchased or originated in the U.S. which are sold and derecognized. During the year ended October 31, 2018, we sold $936 million of these loans ($1,012 million in 2017) and recognized $17 million in mortgage servicing rights ($17 million in 2017) due to our continued involvement.

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 of 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 interest expense related to these liabilities is recorded on an accrual basis. Additional information on securities lent or sold under repurchase agreements is provided in Note 14.

Note 7: Structured Entities

We enter into certain transactions in the ordinary course of business which involve the establishment of structured entities ("SEs") to facilitate or secure customer transactions and to obtain alternate sources of funding. We are required to consolidate an SE if we control the entity. We control an 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 an 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 a 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. See Note 1 for more information on our basis of consolidation.

Consolidated Structured Entities

Bank Securitization Vehicles

We use securitization vehicles to securitize our Canadian credit card loans, Canadian real estate lines of credit and Canadian auto 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 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 amount and fair value of transferred assets that did not qualify for derecognition and the associated liabilities issued by our bank securitization vehicles:

(Canadian $ in millions)	2018		2017	
	Carrying amount of assets (1)	**Carrying amount of associated liabilities**	Carrying amount of assets (1)	Carrying amount of associated liabilities
Credit card receivables	**7,246**	**5,096**	7,058	4,115
Consumer instalment and other personal (2)	**6,827**	**3,083**	5,699	2,295
Total (3)	**14,073**	**8,179**	12,757	6,410

(1) Carrying amount of loans is net of allowance.
(2) Includes Canadian real estate lines of credit and Canadian auto loans.
(3) The fair values of assets and associated liabilities are $14,045 million and $8,134 million, respectively, as at October 31, 2018 ($12,753 million and $6,403 million, respectively, in 2017).

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

U.S. Customer Securitization Vehicle

We sponsor one customer securitization vehicle (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. We do not sell assets to the customer securitization vehicle. 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. We have determined that we control and therefore consolidate this vehicle, as we are exposed to its variable returns and we have the key decision-making powers necessary to affect the amount of those returns in our capacity as liquidity provider and servicing agent.

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 at October 31, 2018 was $7,100 million ($6,765 million at October 31, 2017).

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Capital and Funding Vehicles

We have a funding vehicle that was created to guarantee payments due to bondholders on bonds issued by us. We sell assets to this funding vehicle in exchange for an intercompany loan.

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. As at October 31, 2018, $325 million of guarantee-linked notes issued by these vehicles were included in deposits in our Consolidated Balance Sheet ($318 million at October 31, 2017).

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 Note 13 and Note 24, respectively.

Unconsolidated Structured Entities

The table below presents amounts related to our interests in unconsolidated SEs:

(Canadian $ in millions)	**2018**			2017		
	Capital vehicles	**Canadian customer securitization vehicles** (1)	**Structured finance vehicles**	Capital vehicles	Canadian customer securitization vehicles (1)	Structured finance vehicles
Interests recorded on the balance sheet						
Cash and cash equivalents	**118**	**53**	**–**	8	50	–
Trading securities	**–**	**12**	**–**	–	6	209
FVTPL securities	**–**	**582**	**–**	na	na	na
FVOCI securities	**2**	**242**	**–**	na	na	na
Available-for-sale securities	**na**	**na**	**na**	2	725	–
Loans	**7**	**–**	**–**	7	–	–
Other	**3**	**13**	**–**	–	6	–
	130	**902**	**–**	17	787	209
Deposits	**570**	**53**	**–**	460	50	146
Derivatives	**–**	**–**	**–**	–	–	63
Other	**17**	**–**	**–**	16	–	–
	587	**53**	**–**	476	50	209
Exposure to loss (2)	**28**	**7,135**	**–**	57	6,425	209
Total assets of the entities	**587**	**5,033**	**–**	476	4,592	209

(1) Securities held that are issued by our Canadian customer securitization vehicles are comprised of asset-backed commercial paper and are classified as trading securities, FVTPL securities and FVOCI securities (trading securities and available-for-sale securities in 2017 under IAS 39). All assets held by these vehicles relate to assets in Canada.

(2) Exposure to loss represents securities held, undrawn liquidity facilities, total committed amounts of the BMO funded vehicle, derivative assets and loans.

na – not applicable due to IFRS 9 adoption.

Capital Vehicles

One of our capital vehicles holds a note issued by us as its underlying asset. We intend to redeem the note on December 31, 2018. We may 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.

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. We do not sell assets to the customer securitization vehicles. 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 at October 31, 2018 was $6,286 million ($5,688 million at October 31, 2017).

Structured Finance Vehicles

We facilitate development of investment products by third parties, including mutual funds, unit investment trusts and other investment funds that are sold to retail investors. We enter into derivative contracts with these third parties to provide investors with their desired exposure, and we hedge our exposure related to these derivative contracts by investing in other funds through SEs. We are not required to consolidate these vehicles.

During 2018, we discontinued these vehicles and we no longer enter into these types of arrangements with third parties.

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. Based on our assessment, we have determined that we do not control these funds. Our total interest in unconsolidated BMO managed funds was $1,612 million at October 31, 2018 ($1,750 million in 2017), which is included in securities in our Consolidated Balance Sheet.

Other Structured Entities

We purchase and hold investments in a variety of third-party structured entities, including exchange-traded funds, mutual funds, limited partnerships and investment trusts. 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 an SE if we are involved in the design, legal set-up or marketing of the SE. We may also be deemed to be the sponsor of an SE if market participants would reasonably associate the entity with us. We do not have an interest in certain SEs that we have sponsored.

Additional information on our compensation trusts is provided in Note 20.

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 future 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 financial liabilities 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 on October 31, 2018 was $2,860 million ($3,866 million in 2017), for which we have posted collateral of $2,963 million ($4,223 million in 2017).

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 are executed 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 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 recorded in trading revenues in our Consolidated Statement of Income. 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)	2018			2017		
	Gross assets	**Gross liabilities**	**Net**	Gross assets	Gross liabilities	Net
Trading						
Interest Rate Contracts						
Swaps	**7,795**	**(6,419)**	**1,376**	8,390	(7,027)	1,363
Forward rate agreements	**36**	**(10)**	**26**	41	–	41
Futures	**2**	**(3)**	**(1)**	–	–	–
Purchased options	**425**	**–**	**425**	444	–	444
Written options	**–**	**(273)**	**(273)**	–	(329)	(329)
Foreign Exchange Contracts						
Cross-currency swaps	**2,362**	**(1,678)**	**684**	2,687	(1,752)	935
Cross-currency interest rate swaps	**4,977**	**(6,057)**	**(1,080)**	8,103	(9,051)	(948)
Forward foreign exchange contracts	**4,335**	**(2,817)**	**1,518**	4,954	(3,178)	1,776
Purchased options	**241**	**–**	**241**	267	–	267
Written options	**–**	**(228)**	**(228)**	–	(270)	(270)
Commodity Contracts						
Swaps	**1,559**	**(1,084)**	**475**	726	(717)	9
Futures	**17**	**–**	**17**	–	–	–
Purchased options	**484**	**–**	**484**	352	–	352
Written options	**–**	**(372)**	**(372)**	–	(357)	(357)
Equity Contracts	**2,158**	**(2,402)**	**(244)**	1,388	(3,386)	(1,998)
Credit Default Swaps						
Purchased	**1**	**(36)**	**(35)**	–	(54)	(54)
Written	**9**	**(1)**	**8**	7	(1)	6
Total fair value – trading derivatives	**24,401**	**(21,380)**	**3,021**	27,359	(26,122)	1,237
Hedging						
Interest Rate Contracts						
Cash flow hedges – swaps	**18**	**(1,261)**	**(1,243)**	78	(558)	(480)
Fair value hedges – swaps	**701**	**(668)**	**33**	274	(402)	(128)
Total swaps	**719**	**(1,929)**	**(1,210)**	352	(960)	(608)
Foreign Exchange Contracts						
Cash flow hedges	**1,084**	**(1,074)**	**10**	1,202	(722)	480
Total foreign exchange contracts	**1,084**	**(1,074)**	**10**	1,202	(722)	480
Equity Contracts						
Cash flow hedges	**–**	**(28)**	**(28)**	38	–	38
Total equity contracts	**–**	**(28)**	**(28)**	38	–	38
Total fair value – hedging derivatives (1)	**1,803**	**(3,031)**	**(1,228)**	1,592	(1,682)	(90)
Total fair value – trading and hedging derivatives	**26,204**	**(24,411)**	**1,793**	28,951	(27,804)	1,147
Less: impact of master netting agreements	**(15,575)**	**15,575**	**–**	(19,909)	19,909	–
Total	**10,629**	**(8,836)**	**1,793**	9,042	(7,895)	1,147

(1) 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.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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)			2018			2017
	Exchange traded	**Over-the-counter**	**Total**	Exchange traded	Over-the-counter	Total
Interest Rate Contracts						
Swaps	**–**	**3,684,763**	**3,684,763**	–	3,073,490	3,073,490
Forward rate agreements	**–**	**411,573**	**411,573**	–	195,142	195,142
Purchased options	**26,629**	**35,023**	**61,652**	10,407	29,107	39,514
Written options	**16,511**	**48,721**	**65,232**	9,284	37,247	46,531
Futures	**192,482**	**–**	**192,482**	89,053	–	89,053
Total interest rate contracts	**235,622**	**4,180,080**	**4,415,702**	108,744	3,334,986	3,443,730
Foreign Exchange Contracts						
Cross-currency swaps	**–**	**57,226**	**57,226**	–	50,534	50,534
Cross-currency interest rate swaps	**–**	**449,187**	**449,187**	–	430,808	430,808
Forward foreign exchange contracts	**–**	**463,743**	**463,743**	–	392,924	392,924
Purchased options	**2,625**	**21,468**	**24,093**	6,001	23,812	29,813
Written options	**1,420**	**24,018**	**25,438**	1,249	29,101	30,350
Futures	**739**	**–**	**739**	794	–	794
Total foreign exchange contracts	**4,784**	**1,015,642**	**1,020,426**	8,044	927,179	935,223
Commodity Contracts						
Swaps	**–**	**24,366**	**24,366**	–	18,713	18,713
Purchased options	**3,303**	**6,182**	**9,485**	5,031	7,080	12,111
Written options	**4,909**	**4,233**	**9,142**	6,896	4,905	11,801
Futures	**33,104**	**–**	**33,104**	28,139	–	28,139
Total commodity contracts	**41,316**	**34,781**	**76,097**	40,066	30,698	70,764
Equity Contracts	**33,687**	**52,725**	**86,412**	14,253	63,184	77,437
Credit Default Swaps						
Purchased	**–**	**3,047**	**3,047**	–	2,658	2,658
Written	**–**	**443**	**443**	–	448	448
Total	**315,409**	**5,286,718**	**5,602,127**	171,107	4,359,153	4,530,260

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. In addition, we use deposits to hedge foreign currency exposure in our net investment in foreign operations. To the extent these instruments 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 on page 98 of 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 on page 99. 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 being 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.

The following table outlines the notional amounts and average rates of derivatives and the carrying amount of deposits designated as hedging instruments, by term to maturity, hedge type, and risk type, where applicable.

(Canadian $ in millions, except as noted)		2018					
		Remaining term to maturity					
		Within 1 year	1 to 3 years	3 to 5 years	5 to 10 years	Over 10 years	Total
Cash Flow Hedges							
Interest rate risk – Interest rate swaps							
Notional amount		5,252	22,976	30,790	14,751	–	73,769
Average fixed interest rate		1.66%	1.67%	2.60%	2.42%	–	2.21%
Foreign exchange risk – Cross-currency swaps and foreign exchange forwards (1)							
CAD-USD pair	Notional amount	3,939	10,572	11,781	2,576	251	29,119
	Average fixed interest rate	1.31%	1.20%	2.01%	1.27%	3.02%	1.57%
	Average exchange rate: CAD-USD	1.3347	1.3035	1.2923	1.1871	1.3122	1.2930
CAD-EUR pair	Notional amount	3,804	8,726	8,618	–	201	21,349
	Average fixed interest rate	1.74%	2.10%	2.26%	–	2.97%	2.11%
	Average exchange rate: CAD-EUR	1.5217	1.4685	1.4999	–	1.4870	1.4908
Other currency pairs (2)	Notional amount	–	1,817	4,427	109	–	6,353
	Average fixed interest rate	–	2.05%	2.80%	2.98%	–	2.59%
	Average exchange rate: CAD-Non USD/EUR	–	1.4361	1.3338	0.1696 (3)	–	1.3430
Equity price risk – Total return swap							
Notional amount		381	–	–	–	–	381
Fair Value Hedges							
Interest rate risk – Interest rate swaps							
Notional amount		14,516	21,919	22,928	14,101	–	73,464
Average fixed interest rate		1.81%	2.16%	2.29%	2.36%	–	2.17%
Net Investment Hedges							
Foreign exchange risk							
USD denominated deposit – carrying amount		6,596	–	–	–	–	6,596
GBP denominated deposit – carrying amount		473	–	–	–	–	473

(1) 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.
(2) Includes CAD-AUD, CAD-CHF, CAD-CNH, CAD-GBP or CAD-HKD cross-currency swaps where applicable.
(3) Includes one CAD-HKD cross-currency swap.

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 London Interbank Offered Rate ("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.

To the extent that changes in the fair value of the derivative offset changes in the fair value of the hedged item for the designated hedged risk, they are recorded 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. We do not terminate our foreign exchange hedges before maturity.

Under 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 are designated as a hedging instrument for a portion of the net investment in foreign operations. 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.

Effectiveness of our net investment hedge is determined by using the dollar offset method with spot foreign currency rates. As the notional amount of the deposits and the hedged net investment in foreign operations are the same, there is no source of ineffectiveness in these hedging relationships.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

For cash flow hedges and net investment hedges, the following table contains information related to items designated as hedging instruments, hedged items and hedge ineffectiveness for the year ended October 31, 2018.

					2018
	Carrying amount of hedging instruments (1)		Hedge ineffectiveness		
(Canadian $ in millions)	Asset	Liability	Gains (Losses) on hedging derivatives used to calculate hedge ineffectiveness	Gains (Losses) on hypothetical derivatives used to calculate hedge ineffectiveness	Ineffectiveness recorded in non-interest revenue – other
Cash flow hedges					
Interest rate risk – Interest rate swaps	**18**	**(1,261)**	**(1,685)**	**1,687**	**(4)**
Foreign exchange risk – Cross-currency swaps and foreign exchange forwards	**1,084**	**(1,074)**	**(459)**	**459**	**–**
Equity price risk – Total return swaps	**–**	**(28)**	**24**	**(24)**	**–**
	1,102	**(2,363)**	**(2,120)**	**2,122**	**(4)**
Net investment hedges					
Foreign exchange risk – Deposit liabilities		**(7,069)**	**(211)**	**211**	**–**
Total	**1,102**	**(9,432)**	**(2,331)**	**2,333**	**(4)**

(1) Represents the unrealized gains (losses) within derivative financial instruments in assets and liabilities, respectively, in the Consolidated Balance Sheet.

For cash flow hedges and net investment hedges, the following table contains information related to impacts on the Consolidated Statement of Other Comprehensive Income, on a pre-tax basis for the year ended October 31, 2018.

						2018
					Balance in cash flow hedge AOCI / net foreign operations AOCI	
(Canadian $ in millions)	AOCI as at November 1, 2017	Gains / (losses) recognized in OCI	Amount reclassified to net income as the hedged item affects net income	AOCI as at October 31, 2018	Active hedges	Discontinued hedges
Cash flow hedges						
Interest rate risk	(597)	**(1,681)**	**67**	**(2,211)**	**(1,348)**	**(863)**
Foreign exchange risk	298	**(3)**	**456**	**751**	**751**	**–**
Equity price risk	72	**24**	**(66)**	**30**	**30**	**–**
	(227)	**(1,660)**	**457**	**(1,430)** (1)	**(567)**	**(863)**
Net investment hedges						
Foreign exchange risk	(1,580)	**(211)**	**–**	**(1,791)**	**(1,791)**	**–**
Total	(1,807)	**(1,871)**	**457**	**(3,221)**	**(2,358)**	**(863)**

(1) Tax balance related to cash flow hedge AOCI is $356 million as at October 31, 2018.

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 interest rate swaps to hedge interest rate risk, including benchmark interest rates, inherent in fixed rate securities, a portfolio of mortgages, deposits and subordinated debt.

Any 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 the counterparty effect and 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 year are as follows:

(Canadian $ in millions)								2018
	Carrying amount of hedging derivatives (1)		Hedge ineffectiveness				Accumulated amount of fair value hedge gains (losses) on hedged items	
	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								
Interest rate swaps	**701**	**(668)**						
FVOCI securities and loans	**–**	**–**	**850**	**(843)**	**7**	**36,722**	**(1,160)**	**–**
Deposits and subordinated debt	**–**	**–**	**(764)**	**761**	**(3)**	**(34,375)**	**719**	**436**
Total	**701**	**(668)**	**86**	**(82)**	**4**	**2,347**	**(441)**	**436**

(1) Represents the unrealized gains (losses) within derivative financial instruments in assets and liabilities, respectively, in the Consolidated Balance Sheet.
(2) Represents the carrying value on 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.

Comparative Information
During 2017, net losses of $1,161 million related to the effective portion of cash flow hedges were recognized in OCI. A gain of $188 million related to cash flow hedges was transferred from equity to income in interest income or interest expense. Net ineffectiveness recognized on cash flow hedges during 2017 was a loss of $7 million.

Included within non-interest revenue, other, is a fair value loss of $200 million on derivatives held in qualifying fair value hedging relationships, and a gain of $193 million representing net increases in the fair value of the hedged item attributable to the hedged risk.

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, foreign exchange rates, equity and commodity prices and their implied volatilities, as well as credit spreads, 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

Over-the-counter 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, including 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 table below are as follows:

Replacement cost represents the cost of replacing all contracts that have a positive fair value, determined using current market rates. It represents in effect the unrealized gains on our derivative instruments. Replacement costs disclosed below represent the net of the asset and liability to a specific counterparty where we have a legally enforceable right to offset the amount owed to us with the amount owed by us and we intend either to settle on a net basis or to realize the asset and settle the liability simultaneously.

Credit risk equivalent represents the total replacement cost plus an amount representing the potential future credit exposure, 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.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(Canadian $ in millions)	2018			2017		
	Replacement cost	**Credit risk equivalent**	**Risk-weighted assets**	Replacement cost	Credit risk equivalent	Risk-weighted assets
Interest Rate Contracts						
Swaps	**8,514**	**10,699**	**–**	8,742	11,603	–
Forward rate agreements	**36**	**34**	**–**	41	42	–
Purchased options	**409**	**393**	**–**	440	381	–
Total interest rate contracts	**8,959**	**11,126**	**704**	9,223	12,026	1,537
Foreign Exchange Contracts						
Cross-currency swaps	**3,270**	**7,832**	**–**	3,727	8,345	–
Cross-currency interest rate swaps	**5,035**	**14,909**	**–**	8,157	17,210	–
Forward foreign exchange contracts	**4,453**	**8,373**	**–**	5,062	8,389	–
Purchased options	**225**	**424**	**–**	250	420	–
Total foreign exchange contracts	**12,983**	**31,538**	**2,544**	17,196	34,364	2,701
Commodity Contracts						
Swaps	**1,559**	**4,450**	**–**	726	2,971	–
Purchased options	**335**	**1,108**	**–**	120	1,034	–
Total commodity contracts	**1,894**	**5,558**	**1,188**	846	4,005	971
Equity Contracts	**1,585**	**4,332**	**431**	1,322	4,750	461
Credit Default Swaps	**10**	**55**	**83**	7	46	27
Total derivatives	**25,431**	**52,609**	**4,950**	28,594	55,191	5,697
Less: impact of master netting agreements	**(15,575)**	**(29,170)**	**–**	(19,909)	(33,025)	–
Total	**9,856**	**23,439**	**4,950**	8,685	22,166	5,697

The total derivatives and the impact of master netting agreements for replacement cost do not include exchange-traded derivatives with a fair value of $773 million as at October 31, 2018 ($357 million in 2017).

Transactions are conducted with counterparties in various geographic locations and industry sectors. Set out below is the replacement cost of contracts with customers located in the following countries, based on country of ultimate risk:

(Canadian $ in millions, except as noted)	Before master netting agreements				After master netting agreements			
	2018		2017		**2018**		2017	
Canada	**13,449**	**53%**	15,447	54%	**4,901**	**50%**	5,045	58%
United States	**5,446**	**21%**	7,149	25%	**2,102**	**21%**	1,940	22%
United Kingdom	**1,181**	**5%**	1,079	4%	**315**	**3%**	182	2%
Other countries (1)	**5,355**	**21%**	4,919	17%	**2,538**	**26%**	1,518	18%
Total	**25,431**	**100%**	28,594	100%	**9,856**	**100%**	8,685	100%

(1) No other country represented 15% or more of our replacement cost in 2018 or 2017.

Transactions are conducted with various counterparties. Set out below is the replacement cost of contracts (before the impact of master netting agreements) with customers in the following industries:

As at October 31, 2018 (Canadian $ in millions)	**Interest rate contracts**	**Foreign exchange contracts**	**Commodity contracts**	**Equity contracts**	**Credit default swaps**	**Total**
Financial institutions	**6,509**	**10,238**	**360**	**1,219**	**10**	**18,336**
Governments	**1,694**	**1,478**	**56**	**–**	**–**	**3,228**
Natural resources	**3**	**27**	**432**	**–**	**–**	**462**
Energy	**93**	**641**	**727**	**–**	**–**	**1,461**
Other	**660**	**599**	**319**	**366**	**–**	**1,944**
Total	**8,959**	**12,983**	**1,894**	**1,585**	**10**	**25,431**

As at October 31, 2017 (Canadian $ in millions)	Interest rate contracts	Foreign exchange contracts	Commodity contracts	Equity contracts	Credit default swaps	Total
Financial institutions	6,063	13,898	227	1,141	7	21,336
Governments	1,895	1,202	66	–	–	3,163
Natural resources	–	22	74	–	–	96
Energy	155	479	226	–	–	860
Other	1,110	1,595	253	181	–	3,139
Total	9,223	17,196	846	1,322	7	28,594

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					2018	2017
	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	**1,404,557**	**707,683**	**1,167,568**	**514,392**	**37,797**	**3,831,997**	3,202,365
Forward rate agreements, futures and options	**608,132**	**100,756**	**13,885**	**7,897**	**269**	**730,939**	370,240
Total interest rate contracts	**2,012,689**	**808,439**	**1,181,453**	**522,289**	**38,066**	**4,562,936**	3,572,605
Foreign Exchange Contracts							
Cross-currency swaps	**12,466**	**36,718**	**24,980**	**15,413**	**3,339**	**92,916**	85,586
Cross-currency interest rate swaps	**118,783**	**147,231**	**97,828**	**72,857**	**18,533**	**455,232**	434,210
Forward foreign exchange contracts, futures and options	**512,002**	**9,283**	**1,148**	**134**	**26**	**522,593**	463,665
Total foreign exchange contracts	**643,251**	**193,232**	**123,956**	**88,404**	**21,898**	**1,070,741**	983,461
Commodity Contracts							
Swaps	**6,234**	**14,885**	**2,875**	**372**	**–**	**24,366**	18,713
Futures and options	**21,910**	**25,587**	**3,530**	**704**	**–**	**51,731**	52,051
Total commodity contracts	**28,144**	**40,472**	**6,405**	**1,076**	**–**	**76,097**	70,764
Equity Contracts	**72,922**	**7,953**	**3,873**	**1,680**	**366**	**86,794**	77,781
Credit Contracts	**746**	**248**	**1,262**	**1,083**	**151**	**3,490**	3,106
Total notional amount	**2,757,752**	**1,050,344**	**1,316,949**	**614,532**	**60,481**	**5,800,058**	4,707,717

Note 9: Premises and Equipment

We record all premises and equipment at cost less accumulated amortization, 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 amortized 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 amortized over each component's estimated useful life.

The maximum estimated useful lives we use to amortize our assets are as follows:

Buildings	10 to 40 years
Computer equipment and operating system software	5 years
Other equipment	10 years
Leasehold improvements	Lease term to a maximum of 10 years

Amortization 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 no significant write-downs of premises and equipment due to impairment during the years ended October 31, 2018 and 2017. Gains and losses on disposal are included in non-interest expense, premises and equipment, in our Consolidated Statement of Income.

Net rent expense for premises and equipment reported in non-interest expense, premises and equipment, in our Consolidated Statement of Income for the years ended October 31, 2018, 2017 and 2016 was $530 million, $501 million and $502 million, respectively.

(Canadian $ in millions)	2018						2017					
	Land	**Buildings**	**Computer equipment**	**Other equipment**	**Leasehold improvements**	**Total**	Land	Buildings	Computer equipment	Other equipment	Leasehold improvements	Total
Cost												
Balance at beginning of year	**174**	**1,726**	**1,994**	**913**	**1,429**	**6,236**	207	1,784	1,844	902	1,347	6,084
Additions	**4**	**66**	**236**	**40**	**87**	**433**	–	72	156	69	105	402
Disposals (1)	**(32)**	**(163)**	**(11)**	**(27)**	**(20)**	**(253)**	(28)	(95)	(13)	(13)	(10)	(159)
Foreign exchange and other	**(1)**	**(2)**	**10**	**7**	**18**	**32**	(5)	(35)	7	(45)	(13)	(91)
Balance at end of year	**145**	**1,627**	**2,229**	**933**	**1,514**	**6,448**	174	1,726	1,994	913	1,429	6,236
Accumulated Depreciation and Impairment												
Balance at beginning of year	**–**	**1,063**	**1,465**	**674**	**1,001**	**4,203**	–	1,055	1,306	649	927	3,937
Disposals (1)	**–**	**(116)**	**(9)**	**(24)**	**(15)**	**(164)**	–	(32)	(11)	(8)	(8)	(59)
Amortization	**–**	**60**	**201**	**48**	**91**	**400**	–	63	185	49	94	391
Foreign exchange and other	**–**	**9**	**5**	**6**	**3**	**23**	–	(23)	(15)	(16)	(12)	(66)
Balance at end of year	**–**	**1,016**	**1,662**	**704**	**1,080**	**4,462**	–	1,063	1,465	674	1,001	4,203
Net carrying value	**145**	**611**	**567**	**229**	**434**	**1,986**	174	663	529	239	428	2,033

(1) Includes fully depreciated assets written off.

Note 10: 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.

KGS-Alpha Capital Markets ("KGS")

On September 1, 2018, we completed the acquisition of the business of KGS, a U.S. fixed income broker-dealer specializing in U.S. mortgage and asset-backed securities in the institutional investor market, for cash consideration of US$304 million (CAD$397 million). 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 $49 million and goodwill of $54 million. The intangible assets are being amortized over three to fourteen years on an accelerated basis. Goodwill of $32 million related to this acquisition is 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)	
	KGS
Securities – trading	5,193
Securities borrowed or purchased under resale agreements	5,669
Goodwill and intangible assets	103
Other assets	584
Total assets	11,549
Securities lent or sold under repurchase agreements	9,563
Securities sold but not yet purchased	1,431
Other liabilities	158
Purchase price	397

The purchase price allocation for KGS is subject to refinement as we complete the valuation of the assets acquired and liabilities assumed.

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 2% (3% in 2017). The discount rates we applied in determining the recoverable amounts in 2018 ranged from 8.6% to 11.4% (8.3% to 12.2% in 2017), 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.

There were no write-downs of goodwill due to impairment during the years ended October 31, 2018 and 2017.

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 recoverable amounts of our CGUs to decline below their carrying amounts.

A continuity of our goodwill by group of CGUs for the years ended October 31, 2018 and 2017 is as follows:

(Canadian $ in millions)	Personal and Commercial Banking			Wealth Management			BMO Capital Markets	Total
	Canadian P&C	U.S. P&C	Total	Traditional Wealth Management	Insurance	Total		
Balance – October 31, 2016	97	3,861	3,958	2,117	2	2,119	304	6,381
Acquisitions (disposals) during the year	–	–	–	(4)	–	(4)	–	(4)
Foreign exchange and other (1)	–	(142)	(142)	24	–	24	(15)	(133)
Balance – October 31, 2017	97	3,719	3,816	2,137	2	2,139	289	6,244
Acquisitions (disposals) during the year	**–**	**–**	**–**	**–**	**–**	**–**	**54**	**54**
Foreign exchange and other (1)	**–**	**78**	**78**	**(8)**	**–**	**(8)**	**5**	**75**
Balance – October 31, 2018	**97** (2)	**3,797** (3)	**3,894**	**2,129** (4)	**2** (5)	**2,131**	**348** (6)	**6,373**

(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 plc, LGM Investments Limited, M&I, myCFO, Inc., Stoker Ostler Wealth Advisors, Inc., CTC Consulting LLC, AWMB and F&C Asset Management plc.
(5) Relates to AIG.
(6) Relates to Gerard Klauer Mattison, BMO Nesbitt Burns Inc., Paloma Securities L.L.C., M&I, Greene Holcomb Fisher and KGS.

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	Branch distribution networks	Software – amortizing	Software under development	Other	Total
Cost as at October 31, 2016	704	968	194	3,189	476	365	5,896
Additions (disposals)	(33)	–	–	546	(67)	–	446
Foreign exchange and other	(17)	(37)	(7)	(39)	(11)	11	(100)
Cost as at October 31, 2017	654	931	187	3,696	398	376	6,242
Additions (disposals)	**35**	**–**	**–**	**422**	**94**	**12**	**563**
Foreign exchange and other	**(1)**	**20**	**4**	**9**	**4**	**(4)**	**32**
Cost as at October 31, 2018	**688**	**951**	**191**	**4,127**	**496**	**384**	**6,837**

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

The following table presents the accumulated amortization of our intangible assets:

(Canadian $ in millions)	Customer relationships	Core deposits	Branch distribution networks	Software – amortizing	Software under development	Other	Total
Accumulated amortization at October 31, 2016	398	735	194	2,329	–	62	3,718
Amortization	68	56	–	336	–	25	485
Disposals	(22)	–	–	(11)	–	–	(33)
Foreign exchange and other	(13)	(29)	(7)	(36)	–	(2)	(87)
Accumulated amortization at October 31, 2017	431	762	187	2,618	–	85	4,083
Amortization	**46**	**51**	**–**	**387**	**–**	**19**	**503**
Disposals	**–**	**–**	**–**	**(20)**	**–**	**–**	**(20)**
Foreign exchange and other	**(2)**	**17**	**4**	**(15)**	**–**	**(5)**	**(1)**
Accumulated amortization at October 31, 2018	**475**	**830**	**191**	**2,970**	**–**	**99**	**4,565**
Carrying value at October 31, 2018	**213**	**121**	**–**	**1,157**	**496**	**285**	**2,272**
Carrying value at October 31, 2017	223	169	–	1,078	398	291	2,159

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

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 $165 million as at October 31, 2018 ($169 million as at October 31, 2017) 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, when this is less than the carrying value.

There were write-downs of intangible assets of $13 million during the year ended October 31, 2018 ($5 million in 2017).

Note 12: Other Assets

Customers' Liability under 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 lending fees in our Consolidated Statement of Income over the term of the acceptance. The amount potentially due under the acceptances is recorded in other liabilities on 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 on our Consolidated Balance Sheet.

Other

The components of other within other assets are as follows:

(Canadian $ in millions)	**2018**	2017
Accounts receivable, prepaid expenses and other items	**6,910**	6,508
Accrued interest receivable	**1,461**	1,079
BMO Transportation Finance – leased vehicles	**937**	928
Cash collateral	**2,019**	3,165
Due from clients, dealers and brokers	**236**	156
Insurance-related assets	**822**	644
Pension asset (Note 21)	**664**	508
Precious metals	**1,603**	582
Total	**14,652**	13,570

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

Note 13: Deposits

	Payable on demand									
(Canadian $ in millions)	Interest bearing		Non-interest bearing		Payable after notice		Payable on a fixed date		Total	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017
Deposits by:										
Banks (1)	**1,450**	818	**1,400**	1,864	**526**	586	**24,531**	24,937	**27,907**	28,205
Business and government	**25,266**	20,621	**33,984**	33,968	**67,026**	61,790	**187,024**	166,897	**313,300**	283,276
Individuals	**3,476**	3,278	**21,345**	20,044	**90,233**	89,859	**65,790**	55,130	**180,844**	168,311
Total (2)(3)	**30,192**	24,717	**56,729**	55,876	**157,785**	152,235	**277,345**	246,964	**522,051**	479,792
Booked in:										
Canada	**21,735**	21,557	**47,231**	44,380	**82,091**	81,590	**161,192**	145,648	**312,249**	293,175
United States	**7,395**	2,259	**9,477**	11,496	**74,476**	69,555	**86,805**	75,517	**178,153**	158,827
Other countries	**1,062**	901	**21**	–	**1,218**	1,090	**29,348**	25,799	**31,649**	27,790
Total	**30,192**	24,717	**56,729**	55,876	**157,785**	152,235	**277,345**	246,964	**522,051**	479,792

(1) Includes regulated and central banks.
(2) Includes structured notes designated at fair value through profit or loss.
(3) As at October 31, 2018 and 2017, total deposits payable on a fixed date included $29,673 million and $30,419 million, respectively, of federal funds purchased, commercial paper issued and other deposit liabilities. Included in deposits as at October 31, 2018 and 2017 are $259,747 million and $237,127 million, respectively, of deposits denominated in U.S. dollars, and $37,427 million and $27,686 million, respectively, of deposits denominated in other foreign currencies.

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

Deposits payable on demand are comprised primarily of our customers' chequing accounts, some of which we pay interest on. 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 term deposits and guaranteed investment certificates. The terms of these deposits can vary from one day to 10 years.
- Federal funds purchased, which are overnight borrowings of other banks' excess reserve funds at the United States Federal Reserve Bank. As at October 31, 2018, we had borrowed $55 million of federal funds ($707 million in 2017).
- Commercial paper, which totalled $9,121 million as at October 31, 2018 ($8,430 million in 2017).
- Covered bonds, which totalled $25,045 million as at October 31, 2018 ($23,108 million in 2017).

The following table presents the maturity schedule for our deposits payable on a fixed date:

(Canadian $ in millions)	**2018**	2017
Within 1 year	**162,666**	145,039
1 to 2 years	**34,154**	25,620
2 to 3 years	**26,107**	23,323
3 to 4 years	**16,708**	19,345
4 to 5 years	**22,196**	15,850
Over 5 years	**15,514**	17,787
Total (1)	**277,345**	246,964

(1) Includes $247,808 million of deposits, each greater than one hundred thousand dollars, of which $146,697 million were booked in Canada, $71,770 million were booked in the United States and $29,341 million were booked in other countries ($221,954 million, $130,197 million, $65,963 million and $25,794 million, respectively, in 2017). Of the $146,697 million of deposits booked in Canada, $55,190 million mature in less than three months, $3,836 million mature in three to six months, $12,909 million mature in six to twelve months and $74,762 million mature after 12 months ($130,197 million, $41,418 million, $7,922 million, $10,574 million and $70,283 million, respectively, in 2017). We have unencumbered liquid assets of $242,612 million to support these and other deposit liabilities ($213,757 million in 2017).

Most of our structured note liabilities included in deposits have been designated at fair value through profit or loss and are accounted for at fair value, which aligns the accounting result with the way the portfolio is managed. The fair value and notional amount due at contractual maturity of these notes as at October 31, 2018 were $15,309 million and $15,668 million respectively ($13,674 million and $13,563 million, respectively, in 2017). The change in fair value of these structured notes was recorded as an increase of $498 million in non-interest revenue, trading revenues, and a decrease of $28 million before tax was recorded in other comprehensive income related to changes in our own credit spread for the year ended October 31, 2018 (a decrease of $72 million recorded in non-interest revenue, trading revenues, and a decrease of $169 million related to changes in our own credit spread in 2017). The impact of changes in our own credit spread is measured based on movements in our own credit spread year over year.

The cumulative change in fair value related to changes in our own credit spread that has been recognized since the notes were designated at fair value to October 31, 2018 was an unrealized loss of approximately $331 million (unrealized loss of approximately $303 million in 2017), and $255 million of this unrealized loss has been recorded in other comprehensive income ($227 million in 2017).

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 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 on 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 on 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 other assets or other liabilities, 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 in Securities sold but not yet purchased at fair value, 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.

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. The obligation to repurchase these securities is recorded at the amount owing. The interest expense related to these liabilities is recorded on an accrual basis in interest expense, other liabilities, 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 program. Additional information on our securitization program 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.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Other

The components of other within other liabilities are as follows:

(Canadian $ in millions)	**2018**	2017
Accounts payable, accrued expenses and other items	**8,119**	7,894
Accrued interest payable	**1,385**	1,037
Cash collateral	**4,343**	3,696
Insurance-related liabilities	**9,585**	8,959
Liabilities of subsidiaries, other than deposits	**9,283**	6,931
Other employee future benefits liability (Note 21)	**960**	1,303
Payable to brokers, dealers and clients	**1,898**	2,177
Pension liability (Note 21)	**256**	364
Total	**35,829**	32,361

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

Insurance-Related Liabilities

We are engaged in insurance businesses related to life and health insurance, annuities 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 fair value of these investment contract liabilities as at October 31, 2018 of $800 million ($749 million as at October 31, 2017) is recorded in other liabilities in our Consolidated Balance Sheet. The change in fair value of these investment contract liabilities resulted in a decrease of $28 million in insurance claims, commissions and changes in policy benefit liabilities for the year ended October 31, 2018 (decrease of $41 million in 2017 and an increase of $55 million in 2016). For the year ended October 31, 2018, a loss of $2 million was recorded in other comprehensive income related to changes in our credit spread (loss of $32 million in 2017 and $7 million in 2016). The impact of changes in our own credit spread 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.

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)	**2018**	2017
Insurance-related liabilities, beginning of year	**8,959**	7,909
Increase (decrease) in life insurance policy benefit liabilities from:		
New business	**742**	545
In-force policies	**(400)**	66
Changes in actuarial assumptions and methodology	**3**	(52)
Foreign currency	**–**	(1)
Net increase in life insurance policy benefit liabilities	**345**	558
Change in other insurance-related liabilities	**281**	492
Insurance-related liabilities, end of year	**9,585**	8,959

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, 2018, 2017 and 2016, as shown in the table below:

(Canadian $ in millions)	**2018**	2017	2016
Direct premium income	**1,976**	1,750	1,561
Ceded premiums	**(148)**	(157)	(271)
	1,828	1,593	1,290

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	**2018 Total**	2017 Total
Debentures Series 20	150	December 2025 to 2040	8.25	Not redeemable	**143**	148
Series F Medium-Term Notes, First Tranche	900	March 2023	6.17	March 2018 (1)	**–**	905
Series H Medium-Term Notes, First Tranche (8)	1,000	September 2024	3.12	September 2019 (2)	**1,003**	1,016
Series H Medium-Term Notes, Second Tranche (8)	1,000	December 2025	3.34	December 2020 (3)	**916**	969
Series I Medium-Term Notes, First Tranche (8)	1,250	June 2026	3.32	June 2021 (4)	**1,222**	1,178
Series I Medium-Term Notes, Second Tranche (8)	850	June 2027	2.57	June 2022 (5)	**813**	813
3.803% Subordinated Notes due 2032 (8)(9)	US 1,250	December 2032	3.80	December 2027 (6)	**1,573**	–
4.338% Subordinated Notes due 2028 (8)(10)	US 850	October 2028	4.34	October 2023 (7)	**1,112**	–
Total (11)					**6,782**	5,029

(1) All $900 million Series F Medium-Term Notes, First Tranche were redeemed on March 28, 2018 for 100% of the principal amount plus accrued and unpaid interest to, but excluding, the redemption date.
(2) Redeemable at par together with accrued and unpaid interest to, but excluding, their redemption date commencing September 19, 2019.
(3) Redeemable at the greater of par and the Canada Yield Price prior to December 8, 2020, and redeemable at par together with accrued and unpaid interest to, but excluding, their redemption date commencing December 8, 2020.
(4) Redeemable at the greater of par and the Canada Yield Price prior to June 1, 2021, and redeemable at par together with accrued and unpaid interest to, but excluding, their redemption date commencing June 1, 2021.
(5) 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.
(6) Redeemable at par on December 15, 2027 together with accrued and unpaid interest to, but excluding, the redemption date.
(7) Redeemable at par on October 5, 2023 together with accrued and unpaid interest to, but excluding, the redemption date.
(8) 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, the notes 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 times the multiplier.
(9) On December 12, 2017, we issued US$1,250 million of 3.803% subordinated notes.
(10) On October 5, 2018, we issued US$850 million of 4.338% subordinated notes.
(11) Certain amounts of subordinated debt were issued at a premium or discount and include fair value hedge adjustments, which together decreased their carrying value as at October 31, 2018 by $233 million ($121 million in 2017); see Note 8 for further details. The carrying value is also adjusted for the subordinated debt holdings, held for market making purposes.

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

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 on pages 107 to 108 of this report.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 16: Equity

Share Capital

(Canadian $ in millions, except as noted)	2018			2017		
	Number of shares	**Amount**	**Dividends declared per share**	Number of shares	Amount	Dividends declared per share
Preferred Shares – Classified as Equity						
Class B – Series 14 (1)	**–**	**–**	**–**	–	–	0.66
Class B – Series 15 (2)	**–**	**–**	**–**	–	–	0.73
Class B – Series 16 (3)	**–**	**–**	**0.64**	6,267,391	157	0.85
Class B – Series 17 (4)	**–**	**–**	**0.52**	5,732,609	143	0.55
Class B – Series 25	**9,425,607**	**236**	**0.45**	9,425,607	236	0.45
Class B – Series 26	**2,174,393**	**54**	**0.59**	2,174,393	54	0.43
Class B – Series 27	**20,000,000**	**500**	**1.00**	20,000,000	500	1.00
Class B – Series 29	**16,000,000**	**400**	**0.98**	16,000,000	400	0.98
Class B – Series 31	**12,000,000**	**300**	**0.95**	12,000,000	300	0.95
Class B – Series 33	**8,000,000**	**200**	**0.95**	8,000,000	200	0.95
Class B – Series 35	**6,000,000**	**150**	**1.25**	6,000,000	150	1.25
Class B – Series 36	**600,000**	**600**	**58.50**	600,000	600	58.50
Class B – Series 38	**24,000,000**	**600**	**1.21**	24,000,000	600	1.33
Class B – Series 40 (5)	**20,000,000**	**500**	**1.13**	20,000,000	500	0.80
Class B – Series 42 (6)	**16,000,000**	**400**	**1.10**	16,000,000	400	0.45
Class B – Series 44 (7)	**16,000,000**	**400**	**–**	–	–	–
		4,340			4,240	
Common Shares						
Balance at beginning of year	**647,816,318**	**13,032**		645,761,333	12,539	
Issued under the Shareholder Dividend Reinvestment and Share Purchase Plan	**–**	**–**		4,821,184	448	
Issued/cancelled under the Stock Option Plan and other stock-based compensation plans (Note 20)	**1,513,307**	**99**		2,233,801	146	
Repurchased for cancellation	**(10,000,000)**	**(202)**		(5,000,000)	(101)	
Balance at End of Year	**639,329,625**	**12,929**	**3.78**	647,816,318	13,032	3.56
Share Capital		**17,269**			17,272	

(1) On May 25, 2017, we redeemed all 10 million Non-Cumulative Perpetual Class B Preferred Shares, Series 14, at a price of $25.00 cash per share plus all declared and unpaid dividends. Dividends declared for the year ended October 31, 2017 were $0.66 per share and 10 million shares were outstanding at the time of the dividend declaration.
(2) On May 25, 2017, we redeemed all 10 million Non-Cumulative Perpetual Class B Preferred Shares, Series 15, at a price of $25.00 cash per share plus all declared and unpaid dividends. Dividends declared for the year ended October 31, 2017 were $0.73 per share and 10 million shares were outstanding at the time of the dividend declaration.
(3) On August 25, 2018, we redeemed all 6,267,391 Non-Cumulative Perpetual Class B Preferred Shares, Series 16, at a price of $25.00 cash per share plus all declared and unpaid dividends. Dividends declared for the year ended October 31, 2018 were $0.64 per share and 6,267,391 shares were outstanding at the time of the dividend declaration.
(4) On August 25, 2018, we redeemed all 5,732,609 Non-Cumulative Perpetual Class B Preferred Shares, Series 17, at a price of $25.00 cash per share plus all declared and unpaid dividends. Dividends declared for the year ended October 31, 2018 were $0.52 per share and 5,732,609 shares were outstanding at the time of the dividend declaration.
(5) On March 9, 2017, we issued 20 million Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 40, at a price of $25.00 cash per share for gross proceeds of $500 million.
(6) On June 29, 2017, we issued 16 million Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 42, at a price of $25.00 cash per share for gross proceeds of $400 million.
(7) On September 17, 2018, we issued 16 million Non-Cumulative 5-Year Rate Reset Class B Preferred Shares, Series 44, at a price of $25.00 cash per share for gross proceeds of $400 million.

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 25	25.00	$0.112813 (2)	1.15%	August 25, 2021 (3)(4)	Class B – Series 26 (8)
Class B – Series 26	25.00	Floating (7)	1.15%	August 25, 2021 (3)(5)	Class B – Series 25 (8)
Class B – Series 27	25.00	$ 0.2500 (2)	2.33%	May 25, 2019 (3)(4)	Class B – Series 28 (8)
Class B – Series 29	25.00	$ 0.24375 (2)	2.24%	August 25, 2019 (3)(4)	Class B – Series 30 (8)
Class B – Series 31	25.00	$ 0.2375 (2)	2.22%	November 25, 2019 (3)(4)	Class B – Series 32 (8)
Class B – Series 33	25.00	$ 0.2375 (2)	2.71%	August 25, 2020 (3)(4)	Class B – Series 34 (8)
Class B – Series 35	25.00	$ 0.3125	Does not reset	August 25, 2020 (6)	Not convertible
Class B – Series 36	1,000.00	$ 14.6250 (2)	4.97%	November 25, 2020 (3)(4)	Class B – Series 37 (8)
Class B – Series 38	25.00	$0.303125 (2)	4.06%	February 25, 2022 (3)(4)	Class B – Series 39 (8)
Class B – Series 40	25.00	$ 0.28125 (2)	3.33%	May 25, 2022 (3)(4)	Class B – Series 41 (8)
Class B – Series 42	25.00	$ 0.2750 (2)	3.17%	August 25, 2022 (3)(4)	Class B – Series 43 (8)
Class B – Series 44	25.00	$0.303125 (2)	2.68%	November 25, 2023 (3)(4)	Class B – Series 45 (8)

(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, Series 26, 28, 30, 32, 34, 37, 39, 41, 43 and 45 are floating rate preferred shares.
(5) Convertible on the date noted and every five years thereafter if not redeemed. If converted, Series 25 are fixed rate preferred shares.
(6) Series 35 is subject to a redemption premium if redeemed prior to August 25, 2024.
(7) Floating rate will be set as and when declared at the 3-month Government of Canada treasury bill yield plus a reset premium.
(8) If converted, the holders have the option to convert back to the original preferred shares on subsequent redemption dates.

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 on 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. Further, 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 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 35, Class B – Series 36, Class B – Series 38, Class B – Series 40, Class B – Series 42 and Class B – Series 44 preferred share issues include a non-viability contingent capital provision, which is necessary for the shares to qualify as regulatory capital under Basel III. As such, the shares 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 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 share value of the preferred share issuance (including declared and unpaid dividends on such preferred share issuance) by the conversion price and then times the multiplier.

Normal Course Issuer Bid

We renewed our normal course issuer bid ("NCIB"), effective June 1, 2018 for one year. Under this NCIB, we may purchase up to 20 million of our common shares for cancellation. The timing and amount of purchases under the NCIB are subject to management discretion based on factors such as market conditions and capital levels. The bank will consult with OSFI before making purchases under the NCIB.

During the year ended October 31, 2018, we purchased for cancellation 10 million of our common shares.

During the year ended October 31, 2017, we purchased for cancellation 5 million of our common shares.

Share Redemption and Dividend Restrictions

OSFI must approve any plan to redeem any of our preferred share issues 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.

In addition, we have agreed that if BMO Capital Trust II (the "Trust"), an unconsolidated structured entity, fails to pay any required distribution on its capital trust securities, we will not declare dividends of any kind on any of our preferred or common shares for a period of time following the Trust's failure to pay the required distribution (as defined in the applicable prospectuses) unless the Trust first pays such distribution to the holders of its capital trust securities.

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.

For dividends paid in fiscal 2018, common shares to supply the DRIP were purchased in the open market.

For the dividends paid in the first two quarters of 2017, common shares to supply the DRIP were issued from treasury with a two percent discount. For the dividends paid in the third quarter of 2017, common shares to supply the DRIP were issued from treasury without a discount. For the dividends paid in the fourth quarter, common shares to supply the DRIP were purchased on the open market.

During the year ended October 31, 2018, we did not issue any common shares from treasury (4,821,184 in 2017) and purchased 1,995,353 common shares in the open market (504,873 in 2017) for delivery to shareholders under the DRIP.

Potential Share Issuances

As at October 31, 2018, we had reserved 39,947,147 common shares (39,947,147 in 2017) for potential issuance in respect of the DRIP. We have also reserved 6,095,201 common shares (7,525,296 in 2017) for the potential exercise of stock options, as further described in Note 20.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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 other non-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 and regularly update 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 used 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. Market inputs to the model include coupon, maturity and duration.

Mortgage-Backed Securities and Collateralized Mortgage Obligations
The fair value of mortgage-backed securities and collateralized mortgage obligations is determined using independent prices obtained from third-party vendor prices, 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, 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 multi-contributor pricing sources.

Corporate Equity Securities
The fair value of 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 limited partnership investments is based upon net asset values published by third-party fund managers.

Prices from brokers and multi-contributor pricing sources 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 the vendor employs a valuation model which 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, we discount the remaining contractual cash flows, adjusted for estimated prepayment, at market interest rates currently offered for loans with similar terms and risks. 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.

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, 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 model calculates fair value based on inputs specific to the type of contract, which may include stock prices, correlation for multiple assets, interest rates, foreign exchange rates, yield curves and volatilities.

We calculate a credit valuation adjustment ("CVA") to recognize the risk that any given derivative counterparty may not ultimately be able to fulfill its 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 market 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 for these deposits, adjusted for expected redemptions, at market interest rates currently offered for deposits with similar terms and risks. 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 flows that use market interest rate curves and funding spreads.
- For fixed rate deposits with no defined maturities, we consider fair value to equal carrying value, based on carrying value being 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 assumed to equal carrying value.

A portion 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 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

Short-term and Other Financial Instruments

Carrying value is assumed 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.

Certain assets, including premises and equipment, goodwill and intangible assets, as well as shareholders' equity, are not considered financial instruments and therefore no fair value has been determined for these items.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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 on our Consolidated Balance Sheet.

(Canadian $ in millions) **2018**

	Carrying value	Fair value	Valued using quoted market prices	Valued using models (with observable inputs)	Valued using models (without observable inputs)
Securities					
Amortized cost	**6,485**	**6,288**	**429**	**5,795**	**64**
Loans (1)					
Residential mortgages	**119,544**	**118,609**	**–**	**118,609**	**–**
Consumer instalment and other personal	**62,687**	**62,618**	**–**	**62,618**	**–**
Credit cards	**8,099**	**8,099**	**–**	**8,099**	**–**
Business and government (2)	**192,225**	**191,989**	**–**	**191,989**	**–**
	382,555	**381,315**	**–**	**381,315**	**–**
Deposits (3)	**506,742**	**506,581**	**–**	**506,581**	**–**
Securitization and structured entities' liabilities	**25,051**	**24,838**	**–**	**24,838**	**–**
Subordinated debt	**6,782**	**6,834**	**–**	**6,834**	**–**

(1) Carrying value of loans is net of allowance.
(2) Excludes $1,450 million of loans classified as FVTPL upon adoption of IFRS 9 (refer to Note 28).
(3) Excludes $15,309 million of structured note liabilities designated at FVTPL and accounted for at fair value.

This table excludes financial instruments with a carrying value approximating fair value, such as cash and cash equivalents, 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.

(Canadian $ in millions) 2017

	Carrying value	Fair value	Valued using quoted market prices	Valued using models (with observable inputs)	Valued using models (without observable inputs)
Securities					
Held to maturity	9,094	9,096	2,522	6,574	–
Loans (1)					
Residential mortgages	115,165	114,821	–	114,821	–
Consumer instalment and other personal	61,465	61,470	–	61,470	–
Credit cards	7,828	7,828	–	7,828	–
Business and government	174,084	174,105	–	174,105	–
	358,542	358,224	–	358,224	–
Deposits (2)	466,118	466,441	–	466,441	–
Securitization and structured entities' liabilities	23,054	23,148	–	23,148	–
Subordinated debt	5,029	5,255	–	5,255	–

(1) Carrying value of loans is net of allowance.
(2) Excludes $13,674 million of structured note liabilities designated at FVTPL and accounted for at fair value.

This table excludes financial instruments with a carrying value approximating fair value, such as cash and cash equivalents, 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.

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 and prepayment rates 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, previously classified as available-for-sale 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, fair value liabilities, derivative assets and derivative liabilities is presented in the following tables:

Classified under IFRS 9

(Canadian $ in millions) **2018**

	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	**9,107**	**1,213**	**–**	**10,320**
Canadian provincial and municipal governments	**4,013**	**4,689**	**–**	**8,702**
U.S. federal government	**9,465**	**52**	**–**	**9,517**
U.S. states, municipalities and agencies	**78**	**1,138**	**–**	**1,216**
Other governments	**1,210**	**201**	**–**	**1,411**
NHA MBS and U.S. agency MBS and CMO	**60**	**8,869**	**255**	**9,184**
Corporate debt	**2,973**	**6,218**	**7**	**9,198**
Loans	**–**	**199**	**–**	**199**
Corporate equity	**49,946**	**4**	**–**	**49,950**
	76,852	**22,583**	**262**	**99,697**
FVTPL Securities				
Issued or guaranteed by:				
Canadian federal government	**328**	**103**	**–**	**431**
Canadian provincial and municipal governments	**219**	**727**	**–**	**946**
U.S. federal government	**69**	**–**	**–**	**69**
NHA MBS and U.S. agency MBS and CMO	**–**	**7**	**–**	**7**
Corporate debt	**178**	**6,643**	**–**	**6,821**
Corporate equity	**1,378**	**134**	**1,825**	**3,337**
	2,172	**7,614**	**1,825**	**11,611**
FVOCI Securities				
Issued or guaranteed by:				
Canadian federal government	**11,978**	**827**	**–**	**12,805**
Canadian provincial and municipal governments	**3,315**	**3,547**	**–**	**6,862**
U.S. federal government	**16,823**	**–**	**–**	**16,823**
U.S. states, municipalities and agencies	**14**	**3,640**	**1**	**3,655**
Other governments	**3,143**	**1,647**	**–**	**4,790**
NHA MBS and U.S. agency MBS and CMO	**–**	**13,687**	**–**	**13,687**
Corporate debt	**1,959**	**1,797**	**–**	**3,756**
Corporate equity	**–**	**–**	**62**	**62**
	37,232	**25,145**	**63**	**62,440**
Business and Government Loans	**–**	**–**	**1,450**	**1,450**
Fair Value Liabilities				
Securities sold but not yet purchased	**26,336**	**2,468**	**–**	**28,804**
Structured note liabilities and other note liabilities	**–**	**15,309**	**–**	**15,309**
Annuity liabilities	**–**	**800**	**–**	**800**
	26,336	**18,577**	**–**	**44,913**
Derivative Assets				
Interest rate contracts	**18**	**8,959**	**–**	**8,977**
Foreign exchange contracts	**16**	**12,983**	**–**	**12,999**
Commodity contracts	**166**	**1,894**	**–**	**2,060**
Equity contracts	**286**	**1,872**	**–**	**2,158**
Credit default swaps	**–**	**10**	**–**	**10**
	486	**25,718**	**–**	**26,204**
Derivative Liabilities				
Interest rate contracts	**14**	**8,620**	**–**	**8,634**
Foreign exchange contracts	**2**	**11,852**	**–**	**11,854**
Commodity contracts	**295**	**1,161**	**–**	**1,456**
Equity contracts	**246**	**2,183**	**1**	**2,430**
Credit default swaps	**–**	**36**	**1**	**37**
	557	**23,852**	**2**	**24,411**

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Classified under IAS 39

(Canadian $ in millions) 2017

	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	8,712	2,115	–	10,827
Canadian provincial and municipal governments	3,177	4,150	–	7,327
U.S. federal government	9,417	56	–	9,473
U.S. states, municipalities and agencies	189	1,942	–	2,131
Other governments	630	193	–	823
NHA MBS, U.S. agency MBS and CMO	–	931	–	931
Corporate debt	1,485	10,278	–	11,763
Loans	3	150	–	153
Corporate equity	55,640	1	–	55,641
	79,253	19,816	–	99,069
Available-for-Sale Securities				
Issued or guaranteed by:				
Canadian federal government	8,283	897	–	9,180
Canadian provincial and municipal governments	920	2,707	–	3,627
U.S. federal government	14,269	–	–	14,269
U.S. states, municipalities and agencies	18	4,077	1	4,096
Other governments	2,290	1,268	–	3,558
NHA MBS, U.S. agency MBS and CMO	–	13,216	–	13,216
Corporate debt	1,551	2,972	2	4,525
Corporate equity	37	126	1,441	1,604
	27,368	25,263	1,444	54,075
Other Securities	–	–	333	333
Fair Value Liabilities				
Securities sold but not yet purchased	22,992	2,171	–	25,163
Structured note liabilities and other note liabilities	–	13,674	–	13,674
Annuity liabilities	–	749	–	749
	22,992	16,594	–	39,586
Derivative Assets				
Interest rate contracts	4	9,223	–	9,227
Foreign exchange contracts	17	17,196	–	17,213
Commodity contracts	232	846	–	1,078
Equity contracts	93	1,333	–	1,426
Credit default swaps	–	7	–	7
	346	28,605	–	28,951
Derivative Liabilities				
Interest rate contracts	7	8,309	–	8,316
Foreign exchange contracts	6	14,967	–	14,973
Commodity contracts	239	835	–	1,074
Equity contracts	166	3,220	–	3,386
Credit default swaps	–	55	–	55
	418	27,386	–	27,804

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 assumption to the significant Level 3 categories of private equity investments, as the net asset values are provided by the investment or fund managers.

As at October 31, 2018 (Canadian $ in millions, except as noted)	Reporting line in fair value hierarchy table	Fair value of assets	Valuation techniques	Significant unobservable inputs	Range of input values (1) Low	Range of input values (1) High	Change in fair value reasonably possible alternatives (2)
Private equity (3)	Corporate equity	**1,825**	Net Asset Value	Net Asset Value	**na**	**na**	**na**
			EV/EBITDA	Multiple	**6x**	**18x**	**na**
Loans	Business and government loans	**1,450**	Discounted cash flows	Discount margin	**50 bps**	**175 bps**	**3**

(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 the 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) The impact of assuming a 10 basis point increase or decrease in discount margin for business and government loans.
(3) Included in private equity is $889 million of Federal Reserve Bank and U.S. Federal Home Loan Bank shares that we hold to meet regulatory requirements.
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 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 have high credit quality ratings and similar maturities, such as government bonds. The discount margin therefore represents a market return required for uncertainty in future cash flows. Generally a higher or lower discount margin will result in a lower or higher fair value.

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. The following is a discussion of the significant transfers between Level 1, Level 2 and Level 3 balances for the year ended October 31, 2018.

During the year ended October 31, 2018, $2,578 million of trading securities, $714 million of FVTPL securities and $2,266 million of FVOCI securities ($176 million of trading securities and $107 million of available-for-sale securities, respectively, in 2017) were transferred from Level 1 to Level 2 due to reduced observability of the inputs used to value these securities. During the year ended October 31, 2018, $4,122 million of trading securities, $742 million of FVTPL securities and $4,044 million of FVOCI securities ($156 million of trading securities and $56 million of available-for-sale securities, respectively, in 2017) were transferred from Level 2 to Level 1 due to increased availability of quoted prices in active markets.

During the year ended October 31, 2017, $33 million of available-for-sale securities were transferred from Level 3 to Level 1 due to the availability of observable prices used to value these securities. No such transfers happened in 2018.

Changes in Level 3 Fair Value Measurements

The tables below present a reconciliation of all changes in Level 3 financial instruments during the years ended October 31, 2018 and 2017, including realized and unrealized gains (losses) included in earnings and other comprehensive income.

		Change in fair value								
For the year ended October 31, 2018 (Canadian $ in millions)	Balance November 1, 2017	Included in earnings	Included in other comprehensive income (1)	Purchases	Sales	Maturities/ Settlement	Transfers into Level 3	Transfers out of Level 3	Fair value as at October 31, 2018	Change in unrealized gains (losses) recorded in income for instruments still held (2)
Trading Securities										
NHA MBS and U.S. agency MBS and CMO	–	(1)	4	306	(54)	–	–	–	255	(5)
Corporate debt	–	–	–	7	–	–	–	–	7	–
Total trading securities	–	(1)	4	313	(54)	–	–	–	262	(5)
FVTPL Securities										
Corporate debt (3)	73	–	(4)	5	–	–	–	(74)	–	–
Corporate equity (3)(4)	1,701	12	31	307	(161)	(2)	–	(63)	1,825	5
Total FVTPL securities	1,774	12	27	312	(161)	(2)	–	(137)	1,825	5
FVOCI Securities										
Issued or guaranteed by:										
U.S. states, municipalities and agencies	1	–	–	–	–	–	–	–	1	na
Corporate debt	2	–	–	–	–	(2)	–	–	–	na
Corporate equity	–	–	–	62	–	–	–	–	62	na
Total FVOCI securities	3	–	–	62	–	(2)	–	–	63	na
Business and Government Loans (5)	2,372	(2)	24	604	–	(1,548)	–	–	1,450	–
Derivative Liabilities										
Equity contracts	–	–	–	–	–	–	1	–	1	–
Credit default swaps	–	–	–	–	–	–	1	–	1	–
Total derivative liabilities	–	–	–	–	–	–	2	–	2	–

(1) Foreign exchange translation on trading securities held by foreign subsidiaries is included in other comprehensive income, net foreign operations.
(2) Changes in unrealized gains (losses) on FVTPL securities still held on October 31, 2018 are included in earnings for the year.
(3) Includes $73 million of debt instruments and $260 million of equity instruments reclassified from other securities to FVTPL upon adoption of IFRS 9 (see Note 28).
(4) Includes $1,441 million of equity instruments reclassified from available-for-sale to FVTPL upon adoption of IFRS 9 (see Note 28).
(5) Business and government loans were reclassified from amortized cost to FVTPL upon adoption of IFRS 9 (see Note 28).
na – not applicable

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

For the year ended October 31, 2017 (Canadian $ in millions)	Balance October 31, 2016	Change in fair value: Included in earnings	Change in fair value: Included in other comprehensive income (1)	Purchases	Sales	Maturities/ Settlement	Transfers into Level 3	Transfers out of Level 3	Fair value as at October 31, 2017	Change in unrealized gains (losses) recorded in income for instruments still held (2)
Trading Securities										
Corporate debt	91	1	1	–	–	(93)	–	–	–	–
Total trading securities	91	1	1	–	–	(93)	–	–	–	–
Available-for-Sale Securities										
Issued or guaranteed by:										
U.S. states, municipalities and agencies	1	–	–	–	–	–	–	–	1	na
Corporate debt	4	–	–	–	(1)	(1)	–	–	2	na
Corporate equity	1,456	(40)	(15)	190	(117)	–	–	(33)	1,441	na
Total available-for-sale securities	1,461	(40)	(15)	190	(118)	(1)	–	(33)	1,444	na
Other Securities	320	(9)	(7)	134	(102)	(3)	–	–	333	(8)

(1) Foreign exchange translation on trading securities held by foreign subsidiaries is included in other comprehensive income, net foreign operations.
(2) Changes in unrealized gains (losses) on trading securities, derivative assets and derivative liabilities still held on October 31, 2017 are included in earnings for the year.
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 the 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 the 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)	**2018**	2017	2016
Interest rates	**437**	480	663
Foreign exchange	**377**	369	349
Equities	**449**	239	188
Commodities	**63**	84	66
Other	**82**	47	25
Total trading revenue	**1,408**	1,219	1,291
Reported as:			
Net interest income (1)	**(422)**	(133)	99
Non-interest revenue – trading revenue	**1,830**	1,352	1,192
Total trading revenue	**1,408**	1,219	1,291

(1) Amounts in brackets denote net interest expense.

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) **2018**

				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	**86,635**	**1,584**	**85,051**	**13,355**	**70,640**	**–**	**1,056**
Derivative instruments	**52,810**	**26,606**	**26,204**	**15,575**	**505**	**3,576**	**6,548**
	139,445	**28,190**	**111,255**	**28,930**	**71,145**	**3,576**	**7,604**
Financial Liabilities							
Derivative instruments	**51,017**	**26,606**	**24,411**	**15,575**	**555**	**1,492**	**6,789**
Securities lent or sold under repurchase agreements	**68,268**	**1,584**	**66,684**	**13,355**	**53,071**	**–**	**258**
	119,285	**28,190**	**91,095**	**28,930**	**53,626**	**1,492**	**7,047**

(Canadian $ in millions)							2017
				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	80,948	5,901	75,047	9,382	65,044	–	621
Derivative instruments	45,064	16,113	28,951	19,909	933	2,903	5,206
	126,012	22,014	103,998	29,291	65,977	2,903	5,827
Financial Liabilities							
Derivative instruments	43,917	16,113	27,804	19,909	1,263	1,642	4,990
Securities lent or sold under repurchase agreements	61,020	5,901	55,119	9,382	45,436	–	301
	104,937	22,014	82,923	29,291	46,699	1,642	5,291

(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.

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; is consistent with our target credit ratings; underpins our operating groups' business strategies; and supports depositor, investor and regulator confidence, while building long-term shareholder value.

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 and risk-weighted assets for the consolidated entity are determined in accordance with OSFI's Capital Adequacy Requirements Guideline.

Common Equity Tier 1 (CET1) capital is the most permanent form of capital. It is comprised of common shareholders' equity less deductions for goodwill, intangible assets and certain other items. Tier 1 capital is primarily comprised of CET1, preferred shares and innovative hybrid instruments, less certain regulatory deductions.

Tier 2 capital is primarily comprised of subordinated debentures and may include certain loan loss allowances, less certain 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.

CET1 Capital Ratio, Tier 1 Capital Ratio, Total Capital Ratio and Leverage Ratio are the primary regulatory capital measures.

- The CET1 Capital Ratio is defined as common shareholders' equity, net of capital adjustments, divided by CET1 capital risk-weighted assets.
- The Tier 1 Capital Ratio is defined as Tier 1 capital divided by Tier 1 capital risk-weighted assets.
- The Total Capital Ratio is defined as Total capital divided by Total capital risk-weighted assets.
- The Leverage Ratio is defined as Tier 1 capital divided by the sum of on-balance sheet items and specified off-balance sheet items, net of specified adjustments.

As at October 31, 2018, 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 1.5% Domestic Stability Buffer.

Regulatory Capital Measures and Risk-Weighted Assets

(Canadian $ in millions, except as noted)	**2018**	2017
Common Equity Tier 1 Capital	**32,721**	30,633
Tier 1 Capital	**37,220**	35,108
Total Capital	**44,116**	40,596
Common Equity Tier 1 Capital Risk-Weighted Assets	**289,237**	269,466
Tier 1 Capital Risk-Weighted Assets	**289,420**	269,466
Total Capital Risk-Weighted Assets	**289,604**	269,466
Common Equity Tier 1 Capital Ratio	**11.3%**	11.4%
Tier 1 Capital Ratio	**12.9%**	13.0%
Total Capital Ratio	**15.2%**	15.1%
Leverage Ratio	**4.2%**	4.4%

All 2018 and 2017 balances above are on an "all-in" basis.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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 on or after December 2013 vest in equal tranches of 50% on the third and fourth anniversaries of their grant date. Options granted prior to December 2013 vest in tranches over a four-year period starting from their grant date. Each tranche is treated as a separate award with a different vesting period. Certain options can only be exercised once certain performance targets are met. All 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)	**2018**		2017		2016	
	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	**7,525,296**	**72.05**	9,805,299	77.41	12,111,153	80.19
Granted	**705,398**	**100.63**	723,431	96.90	754,714	77.23
Exercised	**1,513,307**	**58.40**	2,233,801	57.80	2,103,391	55.32
Forfeited/cancelled	**152,417**	**86.85**	13,243	66.89	104,606	71.76
Expired	**469,769**	**153.40**	756,390	195.02	852,571	179.53
Outstanding at end of year	**6,095,201**	**72.19**	7,525,296	72.05	9,805,299	77.41
Exercisable at end of year	**3,782,481**	**61.39**	4,584,375	67.42	5,605,485	83.34
Available for grant	**3,405,239**		3,811,157		4,151,676	

(1) The weighted-average exercise prices reflect the conversion of foreign currency denominated options at the exchange rate as at October 31, 2018, October 31, 2017 and October 31, 2016, 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, 2018, 2017 and 2016 was $7 million, $8 million and $6 million before tax, respectively ($7 million, $7 million and $6 million after tax, respectively).

The intrinsic value of a stock option grant is the difference between the current market price of our common shares and the strike price of the option. The aggregate intrinsic value of stock options outstanding at October 31, 2018, 2017 and 2016 was $162 million, $232 million and $211 million, respectively. The aggregate intrinsic value of stock options exercisable at October 31, 2018, 2017 and 2016 was $140 million, $174 million and $146 million, respectively.

Options outstanding and exercisable at October 31, 2018 by range of exercise price were as follows:

(Canadian $, except as noted)	**2018**					
	Options outstanding			**Options exercisable**		
Range of exercise prices	**Number of stock options**	**Weighted-average remaining contractual life (years)**	**Weighted-average exercise price** (2)	**Number of stock options**	**Weighted-average remaining contractual life (years)**	**Weighted-average exercise price** (2)
$30.01 to $40.00	**13,690**	**0.1**	**34.13**	**13,690**	**0.1**	**34.13**
$50.01 to $60.00	**1,736,930**	**2.3**	**55.88**	**1,736,930**	**2.3**	**55.88**
$60.01 to $70.00	**1,798,219**	**4.7**	**64.68**	**1,798,219**	**4.7**	**64.68**
$70.01 and over (1)	**2,546,362**	**7.7**	**88.83**	**233,642**	**6.0**	**78.62**

(1) Certain options were issued as part of the acquisition of M&I.
(2) The weighted-average exercise prices reflect the conversion of foreign currency denominated options at the exchange rate as at October 31, 2018.

The following table summarizes further information about our Stock Option Plan:

(Canadian $ in millions, except as noted)	**2018**	2017	2016
Unrecognized compensation cost for non-vested stock option awards	**5**	5	4
Weighted-average period over which this cost will be recognized (in years)	**2.6**	2.7	2.5
Total intrinsic value of stock options exercised	**67**	90	55
Cash proceeds from stock options exercised	**88**	129	116
Weighted-average share price for stock options exercised (in dollars)	**102.55**	98.05	81.41

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, 2018, 2017 and 2016 was $11.30, $11.62 and $7.60, 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:

	2018	2017	2016
Expected dividend yield	**4.1%**	4.3%	5.5%
Expected share price volatility	**17.0% – 17.3%**	18.4% – 18.8%	19.8% – 20.0%
Risk-free rate of return	**2.1%**	1.7% – 1.8%	1.3% – 1.4%
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, 2018, 2017 and 2016 was $100.63, $96.90 and $77.23, 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 $100,000. 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 contribution as employee compensation expense when it is contributed to the plan.

Employee compensation expense related to these plans for the years ended October 31, 2018, 2017 and 2016 was $51 million, $53 million and $51 million, respectively. There were 17.8 million, 18.3 million and 18.9 million common shares held in these plans for the years ended October 31, 2018, 2017 and 2016, 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 $1,752 million as at October 31, 2018 ($1,805 million in 2017).

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, 2018, 2017 and 2016 totalled 5.9 million, 5.9 million and 6.4 million, respectively.

Prior to 2015, we entered into agreements with third parties to assume our liabilities related to a portion of units granted for a fixed up-front payment. For units subject to such arrangements, we no longer have any obligation for future cash payments and as a result no liability is recorded related to these awards. All cash payments made under such arrangements are deferred in the Consolidated Balance Sheet as other assets and are recognized on a straight-line basis over the vesting period. Subsequent changes in the market value of our common shares do not affect the amount of compensation expense related to these awards. During the year ended October 31, 2017, all remaining deferred compensation related to these arrangements was recognized.

Employee compensation expense related to plans where we entered into agreements with third parties for the years ended October 31, 2018, 2017 and 2016 was $nil, $(7) million and $26 million before tax, respectively ($nil, $(5) million and $19 million after tax, respectively).

Mid-term incentive plan units for which we did not enter into agreements with third parties for the years ended October 31, 2018, 2017 and 2016 totalled 5.9 million, 5.9 million and 6.4 million units, respectively. The grant date fair value of these awards as at October 31, 2018, 2017 and 2016 was $581 million, $515 million and $492 million, respectively, for which we recorded employee compensation expense of $595 million, $703 million and $537 million before tax, respectively ($437 million, $516 million and $397 million after tax, respectively). We hedge the impact of the change in market value of our common shares by entering into total return swaps (equity contracts). We also enter into foreign currency swaps to manage the foreign exchange translation from our United States businesses. Gains on total return swaps and foreign currency swaps recognized for the years ended October 31, 2018, 2017 and 2016 were $51 million, $183 million and $111 million, respectively, resulting in net employee compensation expense of $544 million, $520 million and $426 million, respectively.

A total of 17.1 million, 17.0 million and 17.0 million mid-term incentive plan units were outstanding as at October 31, 2018, 2017 and 2016, respectively, and the intrinsic value of those awards which had vested was $1,269 million, $1,253 million and $883 million, respectively. Cash payments made in relation to these liabilities were $598 million, $343 million and $131 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, 2018, 2017 and 2016 totalled 0.3 million, 0.3 million and 0.4 million, respectively, and the grant date fair value of these units was $33 million, $32 million and $28 million, respectively.

Liabilities related to these plans are recorded in other liabilities in our Consolidated Balance Sheet and totalled $485 million and $499 million as at October 31, 2018 and 2017, respectively. Payments made under these plans for the years ended October 31, 2018, 2017 and 2016 were $60 million, $32 million and $53 million, respectively.

Employee compensation expense related to these plans for the years ended October 31, 2018, 2017 and 2016 was $27 million, $91 million and $67 million before tax, respectively ($20 million, $67 million and $50 million after tax, 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 on these derivatives for the years ended October 31, 2018, 2017 and 2016 were $8 million, $78 million and $57 million before tax, respectively. These gains resulted in net employee compensation expense for the years ended October 31, 2018, 2017 and 2016 of $19 million, $13 million and $10 million before tax, respectively ($14 million, $10 million and $7 million after tax, respectively).

A total of 4.9 million, 5.0 million and 4.8 million deferred incentive plan units were outstanding as at October 31, 2018, 2017 and 2016, 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 employees in some of our subsidiaries. The costs of these plans, recorded in employee compensation expense, are equal to our contributions to the plans.

The defined benefit pension plans for our employees in the United States were closed to new members on April 1, 2016 and closed to future accruals on March 1, 2017. A defined contribution pension plan was made available for employees affected by the closure. As a result of the closure of these plans, we recorded a curtailment gain of $52 million in non-interest expense, employee compensation, in our Consolidated Statement of Income in 2016.

During the fourth quarter of 2018, we announced changes to our other employee future benefits plan for Canadian employees that will become mandatory for new retirees beginning January 1, 2021. Plan changes include an increase in the service requirement for eligibility and flexible benefits with employer premium caps. We recorded a $277 million benefit from the remeasurement of the benefit liability in non-interest expense, employee compensation, in our Consolidated Statement of Income.

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 the 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 the fair market values at October 31, are as follows:

	Pension benefit plans		
	Target range 2018	**Actual 2018**	Actual 2017
Equities	**25% – 50%**	**37%**	40%
Fixed income investments	**25% – 55%**	**46%**	46%
Other	**10% – 40%**	**17%**	14%

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 expense 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 in the United States the supplementary pension plan is unfunded.

Our other employee future benefit plans in Canada and the United States are either partially 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, 2018 and the most recent funding valuation for our primary U.S. pension plan was performed as at January 1, 2018. Benefit payments for fiscal 2019 are estimated to be $486 million.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

A summary of plan information for the past three years is as follows:

(Canadian $ in millions)	Pension benefit plans			Other employee future benefit plans		
	2018	2017	2016	**2018**	2017	2016
Defined benefit obligation	**8,311**	8,846	8,992	**1,113**	1,460	1,493
Fair value of plan assets	**8,719**	8,990	8,655	**153**	157	150
Surplus (deficit) and net defined benefit asset (liability)	**408**	144	(337)	**(960)**	(1,303)	(1,343)
Surplus (deficit) is comprised of:						
Funded or partially funded plans	**573**	339	(127)	**37**	28	7
Unfunded plans	**(165)**	(195)	(210)	**(997)**	(1,331)	(1,350)
Surplus (deficit) and net defined benefit asset (liability)	**408**	144	(337)	**(960)**	(1,303)	(1,343)

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		
	2018	2017	2016	**2018**	2017	2016
Annual benefits expense						
Current service cost	**210**	254	224	**26**	32	25
Net interest (income) expense on net defined benefit (asset) liability	**(10)**	7	(10)	**45**	47	52
Past service cost (income)	**7**	–	–	**(277)**	–	–
Administrative expenses	**5**	5	5	**–**	–	–
Remeasurement of other long-term benefits	**–**	–	–	**(10)**	(6)	6
Benefits expense	**212**	266	219	**(216)**	73	83
Canada and Quebec pension plan expense	**76**	75	73	**–**	–	–
Defined contribution expense	**153**	123	96	**–**	–	–
Total annual pension and other employee future benefit expenses recognized in the Consolidated Statement of Income	**441**	464	388	**(216)**	73	83

Weighted-average Assumptions Used to Determine Benefit Expenses

	Pension benefit plans			Other employee future benefit plans		
	2018	2017	2016	**2018**	2017	2016
Discount rate at beginning of year (3)(4)	**3.5%**	3.4%	4.2%	**3.6%**	3.6%	4.4%
Rate of compensation increase	**2.4%**	2.8%	2.7%	**2.0%**	2.4%	2.4%
Assumed overall health care cost trend rate	**na**	na	na	**4.9%** (1)	5.2% (2)	5.3% (2)

(1) Trending to 4.1% in 2040 and remaining at that level thereafter.
(2) Trending to 4.5% in 2031 and remaining at that level thereafter.
(3) The pension benefit current service cost was calculated using a separate discount rate of 3.70% and 3.68% for 2018 and 2017, respectively.
(4) The other employee future benefit plans current service cost was calculated using a separate discount rate of 3.76% and 3.78% for 2018 and 2017, respectively.
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	
	2018	2017	**2018**	2017
Life expectancy for those currently age 65				
Males	**23.7**	23.6	**21.9**	22.0
Females	**24.0**	24.0	**23.4**	23.4
Life expectancy at age 65 for those currently age 45				
Males	**24.6**	24.6	**23.1**	23.2
Females	**25.0**	24.9	**24.5**	24.6

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	
	2018	2017	**2018**	2017
Defined benefit obligation				
Defined benefit obligation at beginning of year	**8,846**	8,992	**1,460**	1,493
Current service cost	**210**	254	**26**	32
Past service cost (income)	**7**	–	**(277)**	–
Interest cost	**299**	300	**51**	52
Benefits paid	**(492)**	(448)	**(43)**	(45)
Employee contributions	**15**	15	**5**	5
Actuarial (gains) losses due to:				
Changes in demographic assumptions	**(50)**	(127)	**(31)**	(107)
Changes in financial assumptions	**(562)**	(150)	**(77)**	(2)
Plan member experience	**16**	45	**(4)**	39
Foreign exchange and other	**22**	(35)	**3**	(7)
Defined benefit obligation at end of year	**8,311**	8,846	**1,113**	1,460
Wholly or partially funded defined benefit obligation	**8,146**	8,651	**116**	129
Unfunded defined benefit obligation	**165**	195	**997**	1,331
Total defined benefit obligation	**8,311**	8,846	**1,113**	1,460
Weighted-average assumptions used to determine the defined benefit obligation				
Discount rate at end of year	**4.0%**	3.5%	**4.1%**	3.6%
Rate of compensation increase	**2.4%**	2.4%	**2.0%**	2.0%
Assumed overall health care cost trend rate	**na**	na	**4.9%** (1)	5.2% (2)
Fair value of plan assets				
Fair value of plan assets at beginning of year	**8,990**	8,655	**157**	150
Interest income	**309**	293	**6**	5
Return on plan assets (excluding interest income)	**(323)**	277	**(10)**	8
Employer contributions	**213**	219	**35**	40
Employee contributions	**15**	15	**5**	5
Benefits paid	**(492)**	(448)	**(43)**	(45)
Administrative expenses	**(5)**	(5)	**–**	–
Foreign exchange and other	**12**	(16)	**3**	(6)
Fair value of plan assets at end of year	**8,719**	8,990	**153**	157
Surplus (deficit) and net defined benefit asset (liability) at end of year	**408**	144	**(960)**	(1,303)
Recorded in:				
Other assets	**664**	508	**–**	–
Other liabilities	**(256)**	(364)	**(960)**	(1,303)
Surplus (deficit) and net defined benefit asset (liability) at end of year	**408**	144	**(960)**	(1,303)
Actuarial gains (losses) recognized in other comprehensive income				
Net actuarial gains (losses) on plan assets	**(323)**	277	**(10)**	8
Actuarial gains (losses) on defined benefit obligation due to:				
Changes in demographic assumptions	**50**	127	**30**	104
Changes in financial assumptions	**562**	150	**72**	–
Plan member experience	**(16)**	(45)	**1**	(41)
Foreign exchange and other	**6**	(3)	**–**	–
Actuarial gains recognized in other comprehensive income for the year	**279**	506	**93**	71

(1) Trending to 4.1% in 2040 and remaining at that level thereafter.
(2) Trending to 4.5% in 2031 and remaining at that level thereafter.
na – not applicable

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 are as follows:

(Canadian $ in millions)	**2018**			2017		
	Quoted	**Unquoted**	**Total**	Quoted	Unquoted	Total
Cash and money market funds	**114**	**–**	**114**	150	5	155
Securities issued or guaranteed by:						
Canadian federal government	**108**	**41**	**149**	143	47	190
Canadian provincial and municipal governments	**219**	**309**	**528**	471	320	791
U.S. federal government	**297**	**–**	**297**	307	20	327
U.S. states, municipalities and agencies	**–**	**12**	**12**	–	16	16
Pooled funds	**1,591**	**2,715**	**4,306**	1,743	2,012	3,755
Derivative instruments	**1**	**(14)**	**(13)**	1	(29)	(28)
Corporate debt	**6**	**1,055**	**1,061**	9	1,251	1,260
Corporate equity	**1,105**	**–**	**1,105**	1,291	–	1,291
	3,441	**4,118**	**7,559**	4,115	3,642	7,757

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

No plan assets are directly invested in the bank's or related parties' securities as at October 31, 2018 and 2017. As at October 31, 2018, our primary Canadian plan indirectly held, through pooled funds, approximately $15 million ($3 million in 2017) of our common shares. The plans do not hold any property we occupy or other assets we use.

The plans paid $4 million in the year ended October 31, 2018 ($4 million in 2017) to the bank and certain of our subsidiaries for investment management, record-keeping, custodial and administrative services rendered.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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 (%)		4.0	4.1
Impact of:	1% increase ($)	(811)	(102)
	1% decrease ($)	1,016	126
Rate of compensation increase (%)		2.4	2.0
Impact of:	0.25% increase ($)	39	– (1)
	0.25% decrease ($)	(38)	– (1)
Mortality			
Impact of:	1 year shorter life expectancy ($)	(138)	(23)
	1 year longer life expectancy ($)	135	23
Assumed overall health care cost trend rate (%)		na	4.9 (2)
Impact of:	1% increase ($)	na	47
	1% decrease ($)	na	(48)

(1) The change in this assumption is immaterial.

(2) Trending to 4.1% in 2040 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)	**2018**	2017
Canadian pension plans	**14.0**	14.7
U.S. pension plans	**7.2**	8.0
Canadian other employee future benefit plans	**14.3**	16.5

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		
	2018	2017	2016	**2018**	2017	2016
Contributions to defined benefit plans	**154**	187	192	**–**	–	–
Contributions to defined contribution plans	**153**	123	96	**–**	–	–
Benefits paid directly to pensioners	**59**	32	43	**35**	40	38
	366	342	331	**35**	40	38

Our best estimate of the contributions we expect to make for the year ending October 31, 2019 is approximately $246 million to our defined benefit pension plans and $41 million to our other employee future benefit plans.

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 shareholders' equity when the taxes relate to amounts recorded in other comprehensive income or shareholders' 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 unrealized 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 income tax assets and liabilities are measured at the tax rates expected to apply when temporary differences reverse. Changes in deferred income 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 shareholders' equity. Current and deferred taxes are offset only when they are levied by the same taxing authority, levied on the same entity or group of entities and when there is a legal right to offset.

Included in deferred income tax assets is $42 million ($126 million in 2017) related to Canadian tax loss carryforwards that will expire in 2037, $962 million ($1,545 million in 2017) related to both U.S. tax loss carryforwards and tax credits that will expire in various amounts in U.S. taxation years from 2026 through 2038 and $17 million ($16 million in 2017) related to U.K. tax loss carryforwards that are available for use indefinitely against relevant profits generated in the U.K. 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, 2018 is $132 million ($282 million in 2017), of which $8 million ($53 million in 2017) 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 realization of these assets will occur.

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 income 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 $13 billion as at October 31, 2018 ($12 billion in 2017).

Provision for Income Taxes

(Canadian $ in millions)	**2018**	2017	2016
Consolidated Statement of Income			
Current			
Provision for income taxes for the current period	**1,331**	1,254	927
Adjustments in respect of current tax for prior periods	**20**	18	8
Deferred			
Origination and reversal of temporary differences	**276**	80	183
Effect of changes in tax rates	**425**	(2)	(2)
Previously unrecognized tax loss, tax credit or temporary difference for a prior period	**(92)**	(54)	(15)
	1,960	1,296	1,101
Other Comprehensive Income and Shareholders' Equity			
Income tax expense (recovery) related to:			
Unrealized gains (losses) on FVOCI securities (1)	**(69)**	21	64
Reclassification to earnings of (gains) on FVOCI securities (1)	**(23)**	(36)	(11)
Gains (losses) on derivatives designated as cash flow hedges	**(432)**	(322)	4
Reclassification to earnings of losses on derivatives designated as cash flow hedges	**121**	21	6
Hedging of unrealized (gains) losses on translation of net foreign operations	**(56)**	8	10
Gains (losses) on remeasurement of pension and other employee future benefit plans	**111**	157	(156)
(Losses) on remeasurement of own credit risk on financial liabilities designated at fair value	**(6)**	(53)	(55)
Share-based compensation	**10**	(12)	–
Total provision for income taxes	**1,616**	1,080	963

(1) Fiscal 2017 and prior years represent available-for-sale securities (Note 3).

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

Components of Total Provision for Income Taxes

(Canadian $ in millions)	**2018**	2017	2016
Canada: Current income taxes			
Federal	**501**	470	434
Provincial	**299**	272	248
	800	742	682
Canada: Deferred income taxes			
Federal	**(45)**	2	(120)
Provincial	**(27)**	–	(67)
	(72)	2	(187)
Total Canadian	**728**	744	495
Foreign: Current income taxes	**224**	281	220
Deferred income taxes	**664**	55	248
Total foreign	**888**	336	468
Total provision for income taxes	**1,616**	1,080	963

Set out below is a reconciliation of our statutory tax rates and income taxes that would be payable at these rates to the effective income tax rates and provision for income taxes that we have recorded in our Consolidated Statement of Income:

(Canadian $ in millions, except as noted)		**2018**		2017		2016
Combined Canadian federal and provincial income taxes at the statutory tax rate	**1,971**	**26.6%**	1,768	26.6%	1,525	26.6%
Increase (decrease) resulting from:						
Tax-exempt income from securities	**(226)**	**(3.0)**	(409)	(6.2)	(367)	(6.4)
Foreign operations subject to different tax rates	**(110)**	**(1.5)**	22	0.3	13	0.3
Change in tax rate for deferred income taxes	**425**	**5.7**	(2)	–	(2)	–
Previously unrecognized tax loss, tax credit or temporary difference for a prior period	**(92)**	**(1.2)**	(54)	(0.8)	(15)	(0.3)
Income attributable to investments in associates and joint ventures	**(39)**	**(0.5)**	(103)	(1.5)	(47)	(0.8)
Adjustments in respect of current tax for prior periods	**20**	**0.3**	18	0.2	8	0.1
Other	**11**	**0.1**	56	0.9	(14)	(0.3)
Provision for income taxes and effective tax rate	**1,960**	**26.5%**	1,296	19.5%	1,101	19.2%

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Components of Deferred Income Tax Balances

(Canadian $ in millions)

Deferred Income Tax Asset (Liability) (1)	Net asset, November 1, 2017 (2)	Benefit (expense) to income statement	Benefit (expense) to equity	Translation and other	Net asset, October 31, 2018
Allowance for credit losses	684	**(150)**	**–**	**(50)**	**484**
Employee future benefits	416	**(111)**	**(23)**	**–**	**282**
Deferred compensation benefits	545	**(50)**	**–**	**(1)**	**494**
Other comprehensive income	50	**–**	**138**	**7**	**195**
Tax loss carryforwards	1,233	**(628)**	**–**	**1**	**606**
Tax credits	454	**(39)**	**–**	**–**	**415**
Premises and equipment	(664)	**148**	**–**	**1**	**(515)**
Pension benefits	(52)	**19**	**(88)**	**–**	**(121)**
Goodwill and intangible assets	(261)	**60**	**–**	**–**	**(201)**
Securities	21	**17**	**–**	**–**	**38**
Other	180	**125**	**(10)**	**(9)**	**286**
Total	2,606	**(609)**	**17**	**(51)**	**1,963**

(Canadian $ in millions)

Deferred Income Tax Asset (Liability) (1)	Net asset, October 31, 2016	Benefit (expense) to income statement	Benefit (expense) to equity	Translation and other	Net asset, October 31, 2017
Allowance for credit losses	883	(118)	–	(55)	710
Employee future benefits	424	12	(14)	(6)	416
Deferred compensation benefits	462	102	–	(19)	545
Other comprehensive income	(82)	–	112	(3)	27
Tax loss carryforwards	1,343	(18)	–	(92)	1,233
Tax credits	407	64	–	(17)	454
Premises and equipment	(613)	(83)	–	32	(664)
Pension benefits	89	5	(143)	(3)	(52)
Goodwill and intangible assets	(253)	(23)	–	15	(261)
Securities	12	11	–	(2)	21
Other	187	24	12	(20)	203
Total	2,859	(24)	(33)	(170)	2,632

(1) Deferred tax assets of $2,037 million and $2,865 million and deferred tax liabilities of $74 million and $233 million as at October 31, 2018 and 2017, respectively, are presented on the balance sheet net by legal jurisdiction.

(2) Includes IFRS 9 adoption (refer to Note 28)

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

In fiscal 2018, we were reassessed by the Canada Revenue Agency ("CRA") for additional income taxes and interest in an amount of approximately $169 million in respect of certain 2013 Canadian corporate dividends. In prior fiscal years, we were reassessed for additional income taxes and interest of approximately $116 million and $76 million, respectively, for certain 2012 and 2011 Canadian corporate dividends. In its reassessments, the CRA denied dividend deductions on the basis that the dividends were received as part of a "dividend rental arrangement." The tax rules raised by the CRA in the reassessments were prospectively addressed in the 2015 and 2018 Canadian federal budgets. In the future, it is possible that we may be reassessed for significant income tax for similar activities in 2014 and subsequent years. We remain of the view that our tax filing positions were appropriate and intend to challenge any reassessment.

On December 22, 2017, the U.S. government enacted new tax legislation that became effective on January 1, 2018. Under the new legislation, our U.S. net deferred tax asset was revalued by $483 million because of the lower income tax rate. The $483 million revaluation is comprised of a $425 million income tax expense recorded in our Consolidated Statement of Income, and a $58 million income tax charge recorded in other comprehensive income and shareholders' equity for the year ended October 31, 2018.

Note 23: Earnings Per Share

Basic earnings per share is calculated by dividing net income attributable to our shareholders, after deducting preferred share dividends, 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)	2018	2017	2016
Basic Earnings per Share			
Net income attributable to bank shareholders	**5,450**	5,348	4,622
Dividends on preferred shares	**(184)**	(184)	(150)
Net income available to common shareholders	**5,266**	5,164	4,472
Weighted-average number of common shares outstanding (in thousands)	**642,930**	649,650	644,049
Basic earnings per share (Canadian $)	**8.19**	7.95	6.94
Diluted Earnings per Share			
Net income available to common shareholders adjusted for impact of dilutive instruments	**5,266**	5,164	4,472
Weighted-average number of common shares outstanding (in thousands)	**642,930**	649,650	644,049
Effect of dilutive instruments			
Stock options potentially exercisable (1)	**5,876**	6,859	8,706
Common shares potentially repurchased	**(3,893)**	(4,548)	(6,629)
Weighted-average number of diluted common shares outstanding (in thousands)	**644,913**	651,961	646,126
Diluted earnings per share (Canadian $)	**8.17**	7.92	6.92

(1) In computing diluted earnings per share, we excluded average stock options outstanding of 1,101,938, 1,330,564 and 1,353,464 with weighted-average exercise prices of $127.45, $182.70 and $238.45 for the years ended October 31, 2018, 2017 and 2016, respectively, as the average share price for the period 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 (see 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 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)	2018	2017
Financial Guarantees		
Standby letters of credit	**18,458**	18,126
Credit default swaps (1)	**443**	448
Other Credit Instruments		
Backstop liquidity facilities	**5,627**	5,044
Securities lending	**4,939**	5,336
Documentary and commercial letters of credit	**1,263**	1,030
Commitments to extend credit (2)	**137,995**	122,881
Other commitments	**8,935**	4,329
Total	**177,660**	157,194

(1) The fair value of the related derivatives included in our Consolidated Balance Sheet was $8 million as at October 31, 2018 ($6 million in 2017).
(2) Commitments to extend credit exclude personal lines of credit and credit cards that are unconditionally cancellable at our discretion.

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.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Other Credit Instruments

Backstop liquidity facilities are provided to asset-backed commercial paper ("ABCP") or commercial paper ("CP") programs administered by either us or third parties as an alternative source of financing when ABCP or CP markets cannot be accessed and for ABCP programs when predetermined performance measures of the financial assets held by these programs are not met. 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 facilities' terms are generally no longer than one year, but can be several 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 which 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, 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 loss to be remote.

Pledged Assets

In the normal course of business, we pledge assets as security for various liabilities that we incur.

The following tables summarize our pledged assets and collateral, and the activities to which they relate:

(Canadian $ in millions)	**2018**	2017
Bank Assets		
Cash and securities (1)		
Issued or guaranteed by the Government of Canada	**7,784**	11,904
Issued or guaranteed by a Canadian province, municipality or school corporation	**7,143**	6,170
Other	**60,812**	51,848
Mortgages, securities borrowed or purchased under resale agreements and other	**115,256**	99,474
	190,995	169,396

(Canadian $ in millions)	**2018**	2017
Assets pledged in relation to:		
Central counterparties, payment systems and depositories	**2,403**	2,043
Bank of Canada	**525**	725
Foreign governments and central banks	**3**	3
Obligations related to securities sold under repurchase agreements	**54,606**	42,450
Securities borrowing and lending	**50,388**	51,120
Derivatives transactions	**6,120**	5,924
Securitization	**28,710**	27,632
Covered bonds	**26,721**	24,983
Other	**21,519**	14,516
Total pledged assets and collateral (1)	**190,995**	169,396

(1) Excludes cash pledged with central banks disclosed as restricted cash in Note 2.

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

Collateral

When entering into trading activities, such as purchases under resale agreements, securities borrowing and lending activities or financing for certain derivative transactions, we require our counterparties to provide us with collateral that will protect us from losses in the event of their default. Collateral transactions (received or pledged) are typically conducted under terms that are usual and customary in standard trading activities. If there is no default, the securities or their equivalents must be returned to, or returned by, the counterparty at the end of the contract.

The fair value of counterparty collateral that we are permitted to sell or repledge (in the absence of default by the owner of the collateral) was $123,782 million as at October 31, 2018 ($118,324 million as at October 31, 2017). The fair value of collateral that we have sold or repledged was $82,392 million as at October 31, 2018 ($76,909 million as at October 31, 2017).

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 and our premises leases have various renewal options and rights. Our total contractual rental commitments as at October 31, 2018 were

$2,742 million. The commitments for each of the next five years and thereafter are $404 million for 2019, $358 million for 2020, $301 million for 2021, $254 million for 2022, $215 million for 2023 and $1,210 million thereafter. Included in these amounts are commitments related to 1,130 leased branch locations as at October 31, 2018.

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 where 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.

Restructuring Charges

Included in provisions as at October 31, 2018 is $176 million ($98 million in 2017) of restructuring charges related to our ongoing enterprise-wide initiative to simplify how we work, drive increased efficiency, and invest in technology to move our business forward. This amount represents our best estimate of the amount that will be ultimately paid out.

Legal Proceedings

The bank and its subsidiaries are party to legal proceedings, including regulatory investigations, in the ordinary course of business. While there is inherent difficulty in predicting the outcome of these proceedings, management does 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.

Changes in the provision balance during the year were as follows:

(Canadian $ in millions)	**2018**	2017
Balance at beginning of year	**170**	268
Additional provisions/increase in provisions	**375**	153
Provisions utilized	**(250)**	(172)
Amounts reversed	**(11)**	(75)
Exchange differences and other movements	**–**	(4)
Balance at end of year (1)	**284**	170

(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 (productivity) ratio, as well as operating leverage.

Effective with the adoption of IFRS 9, we allocate the provision for credit losses on performing loans and the related allowance to operating groups. In 2017 and prior years, the collective provision and allowance were held in Corporate Services.

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 for everyday banking, financing, investing, credit card and creditor insurance needs. Commercial Banking provides our small business and commercial banking customers with a broad suite of integrated commercial and capital markets products, as well as financial advisory services.

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. Our commercial banking customers are offered in-depth specific industry knowledge, as well as strategic capital markets solutions.

BMO Wealth Management

BMO’s group of wealth management businesses 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. Wealth Management (“BMO WM”) is a global business with an active presence in markets across Canada, the United States, Europe and Asia.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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 Trading Products lines of business, we operate in 33 locations around the world, including 19 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, procurement, data and analytics, and innovation. T&O manages, maintains and provides governance of information technology, cyber security, and operations services for the bank.

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, residual unallocated expenses and certain acquisition integration costs and restructuring costs.

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 where 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 groups' teb adjustments is reflected in Corporate Services revenue and provision for income taxes. The teb adjustment for the year ended October 31, 2018 was $313 million ($567 million in 2017 and $510 million in 2016).

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 geographical segmentation.

Our results and average assets, grouped by operating segment, are as follows:

(Canadian $ in millions)	Canadian P&C	U.S. P&C	Wealth Management	BMO CM	Corporate Services (1)	Total
2018						
Net interest income (2)	**5,541**	**3,843**	**826**	**659**	**(556)**	**10,313**
Non-interest revenue	**2,171**	**1,140**	**5,468**	**3,696**	**249**	**12,724**
Total Revenue	**7,712**	**4,983**	**6,294**	**4,355**	**(307)**	**23,037**
Provision for (recovery of) credit losses on impaired loans	**466**	**258**	**6**	**(17)**	**(13)**	**700**
Provision for (recovery of) credit losses on performing loans	**3**	**(38)**	**–**	**(1)**	**(2)**	**(38)**
Total provision for (recovery of) credit losses	**469**	**220**	**6**	**(18)**	**(15)**	**662**
Insurance claims, commissions and changes in policy benefit liabilities	**–**	**–**	**1,352**	**–**	**–**	**1,352**
Amortization	**318**	**454**	**231**	**124**	**–**	**1,127**
Non-interest expense	**3,487**	**2,558**	**3,278**	**2,727**	**436**	**12,486**
Income (loss) before taxes and non-controlling interest in subsidiaries	**3,438**	**1,751**	**1,427**	**1,522**	**(728)**	**7,410**
Provision for (recovery of) income taxes	**884**	**357**	**355**	**366**	**(2)**	**1,960**
Reported net income (loss)	**2,554**	**1,394**	**1,072**	**1,156**	**(726)**	**5,450**
Non-controlling interest in subsidiaries	**–**	**–**	**–**	**–**	**–**	**–**
Net Income (loss) attributable to bank shareholders	**2,554**	**1,394**	**1,072**	**1,156**	**(726)**	**5,450**
Average Assets	**224,553**	**110,351**	**35,913**	**307,087**	**76,391**	**754,295**

(Canadian $ in millions)	Canadian P&C	U.S. P&C	Wealth Management	BMO CM	Corporate Services (1)	Total
2017						
Net interest income (2)	5,261	3,551	722	1,233	(760)	10,007
Non-interest revenue	2,182	1,066	5,492	3,336	177	12,253
Total Revenue	7,443	4,617	6,214	4,569	(583)	22,260
Provision for (recovery of) credit losses (3)	483	289	8	44	(78)	746
Insurance claims, commissions and changes in policy benefit liabilities	–	–	1,538	–	–	1,538
Amortization	309	434	241	119	–	1,103
Non-interest expense	3,313	2,510	3,110	2,659	635	12,227
Income (loss) before taxes and non-controlling interest in subsidiaries	3,338	1,384	1,317	1,747	(1,140)	6,646
Provision for (recovery of) income taxes	827	357	350	472	(710)	1,296
Reported net income (loss)	2,511	1,027	967	1,275	(430)	5,350
Non-controlling interest in subsidiaries	–	–	2	–	–	2
Net Income (loss) attributable to bank shareholders	2,511	1,027	965	1,275	(430)	5,348
Average Assets	217,685	104,209	32,562	302,518	65,652	722,626

(Canadian $ in millions)	Canadian P&C	U.S. P&C	Wealth Management	BMO CM	Corporate Services (1)	Total
2016						
Net interest income (2)	5,080	3,491	635	1,459	(793)	9,872
Non-interest revenue	1,909	1,119	5,274	2,855	58	11,215
Total Revenue	6,989	4,610	5,909	4,314	(735)	21,087
Provision for (recovery of) credit losses (3)	506	249	9	81	(74)	771
Insurance claims, commissions and changes in policy benefit liabilities	–	–	1,543	–	–	1,543
Amortization	276	433	233	105	–	1,047
Non-interest expense	3,224	2,481	3,104	2,469	716	11,994
Income (loss) before taxes and non-controlling interest in subsidiaries	2,983	1,447	1,020	1,659	(1,377)	5,732
Provision for (recovery of) income taxes	766	396	245	424	(730)	1,101
Reported net income (loss)	2,217	1,051	775	1,235	(647)	4,631
Non-controlling interest in subsidiaries	–	–	2	–	7	9
Net Income (loss) attributable to bank shareholders	2,217	1,051	773	1,235	(654)	4,622
Average Assets	208,018	106,111	30,642	301,623	60,728	707,122

(1) Corporate Services includes Technology and Operations.
(2) Operating groups report on a taxable equivalent basis – see Basis of Presentation section.
(3) 2017 and 2016 have not been restated to reflect the adoption of IFRS 9.

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 the United Kingdom, Europe, the Caribbean and Asia, which are grouped in other countries. 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)	Canada	United States	Other countries	Total
2018				
Total Revenue	**13,733**	**7,315**	**1,989**	**23,037**
Income before taxes and non-controlling interest in subsidiaries	**4,838**	**1,870**	**702**	**7,410**
Reported net income	**3,795**	**1,099**	**556**	**5,450**
Average Assets	**441,376**	**277,764**	**35,155**	**754,295**

(Canadian $ in millions)	Canada	United States	Other countries	Total
2017				
Total Revenue	13,469	7,073	1,718	22,260
Income before taxes and non-controlling interest in subsidiaries	4,597	1,588	461	6,646
Reported net income	3,817	1,210	323	5,350
Average Assets	430,570	264,473	27,583	722,626

(Canadian $ in millions)	Canada	United States	Other countries	Total
2016				
Total Revenue	12,868	6,796	1,423	21,087
Income before taxes and non-controlling interest in subsidiaries	3,902	1,499	331	5,732
Reported net income	3,286	1,105	240	4,631
Average Assets	420,155	260,018	26,949	707,122

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

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Note 26: Significant Subsidiaries

As at October 31, 2018, 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 Capital Markets (Holdings) Limited and subsidiaries, including:	London, England	332
BMO Capital Markets Limited	London, England	
Pyrford International Limited	London, England	
Bank of Montreal (China) Co. Ltd.	Beijing, China	448
Bank of Montreal Holding Inc. and subsidiaries, including:	Toronto, Canada	29,028
Bank of Montreal Mortgage Corporation	Calgary, Canada	
BMO Mortgage Corp.	Vancouver, Canada	
BMO Investments Limited	Hamilton, Bermuda	
BMO Reinsurance Limited	St. Michaels, Barbados	
BMO Nesbitt Burns Holdings Corporation	Toronto, Canada	
BMO Nesbitt Burns Inc.	Toronto, Canada	
BMO Investments Inc.	Toronto, Canada	
BMO InvestorLine Inc.	Toronto, Canada	
Bank of Montreal Ireland plc	Dublin, Ireland	1,022
BMO Financial Corp. and subsidiaries, including:	Chicago, United States	21,893
BMO Asset Management Corp. and subsidiaries	Chicago, United States	
BMO Capital Markets Corp.	New York, United States	
BMO Harris Bank National Association and subsidiaries, including:	Chicago, United States	
BMO Harris Investment Company LLC	Las Vegas, United States	
BMO Harris Financial Advisors, Inc.	Chicago, United States	
BMO Harris Financing, Inc. and subsidiaries	Chicago, United States	
CTC myCFO, LLC	Palo Alto, United States	
BMO Global Asset Management (Europe) Limited and subsidiaries, including:	London, England	692
BMO Asset Management (Holdings) plc and subsidiaries (3)	London, England	
BMO Life Insurance Company and subsidiaries, including:	Toronto, Canada	1,195
BMO Life Holdings (Canada), ULC	Halifax, Canada	
BMO Life Assurance Company	Toronto, Canada	
BMO Trust Company	Toronto, Canada	768
BMO Trustee Asia Limited	Hong Kong, China	2
LGM (Bermuda) Limited and subsidiaries, including:	Hamilton, Bermuda	147
BMO Global Asset Management (Asia) Limited	Hong Kong, China	
LGM Investments Limited	London, England	

(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 Financial Advisors, Inc., BMO Harris Financing, Inc., and CTC myCFO, 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.
(2) Unless otherwise noted, the bank, either directly or indirectly through its subsidiaries, owns 100% of the outstanding voting shares of each subsidiary.
(3) Effective October 31, 2018, F&C Asset Management plc changed its name to BMO Asset Management (Holdings) plc.

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. Refer to Note 19 for details.
- Funds required to be held with central banks. Refer to Note 2 for details.

Note 27: Related Party Transactions

Related parties include subsidiaries, associates, joint ventures, 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)	**2018**	2017	2016
Base salary and incentives	**21**	23	22
Post-employment benefits	**2**	1	2
Share-based payments (1)	**31**	38	32
Total key management personnel compensation	**54**	62	56

(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, 2018, loans to key management personnel totalled $16 million ($10 million in 2017).

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. They 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. Our investments in joint ventures of which we own 50% totalled $231 million as at October 31, 2018 ($182 million in 2017). Our investments in associates over which we exert significant influence totalled $471 million as at October 31, 2018 ($444 million in 2017).

The following table presents transactions with our joint ventures and associates:

(Canadian $ in millions)	**2018**	2017
Loans	**195**	178
Deposits	**114**	132
Fees paid for services received	**71**	66

Note 28: Transition to IFRS 9

The following table shows the pre-transition IAS 39 and corresponding IFRS 9 classification and measurement categories, and reconciles the IAS 39 and IFRS 9 carrying amounts for loans, securities and other financial assets as at November 1, 2017 as a result of adopting IFRS 9. There were no changes to the measurement basis of other financial asset categories or any financial liabilities.

(Canadian $ in millions)	IAS 39 measurement category	IFRS 9 measurement category	IAS 39 carrying amount	Reclassification	Remeasurement	IFRS 9 carrying amount
Financial Assets						
Securities						
	Trading	Trading	99,069	(8,534)	–	90,535
		FVTPL	–	8,534	–	8,534
	Available-for-sale	na	54,075	(54,075)	–	–
		FVOCI	–	51,909	–	51,909
		FVTPL	–	2,081	–	2,081
		Amortized cost	–	85	–	85
	Held-to-maturity	Amortized cost	9,094	–	(2)	9,092
	Other	Other	960	(333)	–	627
		FVTPL	–	333	–	333
Total Securities			163,198	–	(2)	163,196
Loans						
Residential mortgages	Amortized cost	Amortized cost	115,258	–	–	115,258
Consumer instalment and other	Amortized cost	Amortized cost	61,944	–	–	61,944
Credit cards	Amortized cost	Amortized cost	8,071	–	–	8,071
Business and government	Amortized cost	Amortized cost	175,067	(2,372)	–	172,695
		FVTPL	–	2,372	–	2,372
Total Loans			360,340	–	–	360,340
Allowance for credit losses			(1,833)	–	154	(1,679)
			358,507	–	154	358,661
Remaining financial assets (1)			127,706	–	(6)	127,700
Financial Liabilities						
Allowance for credit losses on off-balance sheet exposures			163	–	76	239
Total pre-tax impact of IFRS 9 adoption			na	–	70	na
Total after-tax Accumulated Other Comprehensive Income			3,066	(55)	–	3,011
Total after-tax Retained Earnings (2)(3)			23,709	55	44	23,808
Total after-tax Shareholders' Equity			44,354	–	44	44,398

(1) Represents cash and cash equivalents, interest bearing deposits with banks, securities borrowed or purchased under resale agreements and other assets. Remeasurement represents the impact of the impairment provisions of IFRS 9 on these remaining financial assets.

(2) Reclassification amount represents the after-tax impact ($105 million pre-tax) that resulted from the reclassification of equity securities from available-for-sale under IAS 39 to fair value through profit or loss under IFRS 9.

(3) Remeasurement represents the after-tax impact ($70 million pre-tax) of the adoption of the impairment provisions of IFRS 9.

na – not applicable due to IFRS 9 adoption.

The securities balances by measurement category following the adoption of IFRS 9 as at November 1, 2017 were:

(Canadian $ in millions)	November 1, 2017
Trading	90,535
FVTPL	10,948
FVOCI	51,909
Amortized cost	9,177
Other	627
Total	163,196

The primary impact as a result of adopting the classification and measurement provisions of IFRS 9 relates to securities held by the bank.

On transition, our existing held-to-maturity securities continued to qualify for amortized cost treatment, as they are held with the intent to collect contractual cash flows and those cash flows represent solely payments of principal and interest.

Our available-for-sale portfolio was reclassified based on the result of the business model and contractual cash flow tests. All available-for-sale securities that represented equity instruments were reclassified as fair value through profit or loss. Available-for-sale securities that represented investments in debt instruments were generally classified as fair value through other comprehensive income. Certain available-for-sale debt securities were classified as fair value through profit or loss, as their contractual cash flows did not represent solely payments of principal and interest. Certain available-for-sale debt securities were classified as amortized cost, as they are held with the intent to collect contractual cash flows and those cash flows represent only payments of principal and interest. On transition, investments held in our merchant banking business are classified as fair value through profit or loss and no longer require designation under the fair value option.

Our lending portfolios continue to be recorded at amortized cost, with the exception of certain business and government loans, whose contractual cash flows did not represent only payments of principal and interest, and were classified as fair value through profit or loss.

The following table illustrates the impact of transition to IFRS 9 on the allowance for credit loss as of November 1, 2017.

(Canadian $ in millions)	IAS 39 collective allowance	IAS 39 specific allowance	IAS 39 allowance	Remeasurement	IFRS 9 allowance	IFRS 9 Stage 1	IFRS 9 Stage 2	IFRS 9 Stage 3
Loans								
Residential mortgages	69	24	**93**	(20)	**73**	16	33	24
Consumer instalment and other	343	136	**479**	71	**550**	70	344	136
Credit cards	243	–	**243**	41	**284**	63	221	–
Business and government	785	233	**1,018**	(246)	**772**	205	334	233
Total allowance for credit losses	1,440	393	**1,833**	(154)	**1,679**	354	932	393
Allowance for credit losses on remaining financial assets (1)	–	–	**–**	8	**8**	7	1	–
Allowance for credit losses on off-balance sheet exposures	136	27	**163**	76	**239**	89	123	27
Total	1,576	420	**1,996**	(70)	**1,926**	450	1,056	420

(1) Represents cash and cash equivalents, interest bearing deposits with banks, securities, securities borrowed or purchased under resale agreements and other assets.

Accounting Policies for Financial Instruments under IAS 39, *Financial Instruments: Recognition and Measurement*

The following accounting policies apply to comparative information for 2017 and 2016 in our consolidated financial statements as we did not restate prior periods on adoption of IFRS 9.

Classification and Measurement of Securities

Securities are divided into four types: trading securities designated at FVTPL, available-for-sale securities, held-to-maturity and other securities.

Trading securities are securities that we purchase for resale over a short period of time. We classify trading securities and securities designated under the fair value option at fair value through profit or loss.

We record the transaction costs, gains and losses realized on disposal and unrealized gains and losses due to changes in fair value in our Consolidated Statement of Income in trading revenues. Securities designated at FVTPL are financial instruments that are accounted for at fair value, with changes in fair value recorded in income provided they meet certain criteria.

Available-for-sale securities consist of debt and equity securities that may be sold in response to or in anticipation of changes in interest rates and resulting prepayment risk, changes in credit risk, changes in foreign currency risk, changes in funding sources or terms, or in order to meet liquidity needs.

Available-for-sale securities are initially recorded at fair value plus transaction costs. They are subsequently measured at fair value, with unrealized gains and losses recorded in unrealized gains (losses) on available-for-sale securities in our Consolidated Statement of Comprehensive Income until the security is sold. 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 and dividends received on available-for-sale securities are recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities.

Held-to-maturity securities are debt securities that we have the intention and ability to hold to maturity and that do not meet the definition of a loan. These securities are initially recorded at fair value plus transaction costs and subsequently measured at amortized cost using the effective interest method. Impairment losses are recorded in our Consolidated Statement of Income in securities gains (losses), other than trading. Interest income earned and amortization of premiums or discounts on these debt securities are recorded in our Consolidated Statement of Income in interest, dividend and fee income, securities.

Other securities are investments in companies where we exert significant influence over operating, investing and financing decisions (generally companies in which we own between 20% and 50% of the voting shares). We account for these other securities using the equity method of accounting. Other securities also include certain securities held by our merchant banking business.

Impairment of Securities

We review held-to-maturity, available-for-sale and other securities at each quarter-end reporting period to identify and evaluate investments that show indications of possible impairment.

For held-to-maturity, available-for-sale and other securities, impairment losses are recognized if there is objective evidence of impairment as a result of an event that reduces the estimated future cash flows from the security and the impact can be reliably estimated.

We do not record impairment write-downs on debt securities when impairment is due to changes in market interest rates if future contractual cash flows associated with the debt security are still expected to be recovered.

The impairment loss on available-for-sale securities is the difference between the security's amortized cost and its current fair value, less any previously recognized impairment losses. If there is objective evidence of impairment, a write-down is transferred from our Consolidated Statement of Comprehensive Income, unrealized gains (losses) on available-for-sale securities, to our Consolidated Statement of Income in securities gains, other than trading.

The impairment loss on held-to-maturity securities is the difference between a security's carrying amount and the present value of its estimated future cash flows discounted at the original effective interest rate. If there is objective evidence of impairment, a write-down is recorded in our Consolidated Statement of Income in securities gains, other than trading.

For available-for-sale debt securities, a previous impairment loss is reversed through net income if an event occurs after the impairment was recognized that can be objectively attributed to an increase in fair value, to a maximum of the original impairment charge. For available-for-sale equity securities, previous impairment losses are not reversed through net income, and any subsequent increases in fair value are recorded in other comprehensive income. Reversals of impairment losses on held-to-maturity securities are recorded to a maximum of the amortized cost of the investment before the original impairment charge.

Loans

Loans are initially measured at fair value plus directly attributable costs, and are subsequently measured at amortized cost using the effective interest method. 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 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.

Allowance for Credit Losses

The allowance for credit losses adjusts the value of loans to reflect their estimated realizable value. In assessing their estimated realizable value, we must rely on estimates and exercise judgment regarding matters for which the ultimate outcome is unknown. These include economic factors, developments affecting companies in particular industries, and specific issues with respect to single borrowers. Changes in circumstances may cause future assessments of credit risk to be materially different from current assessments, which could result in an increase or decrease in the allowance for credit losses.

The allowance is comprised of a specific allowance and a collective allowance.

Specific Allowance

These allowances are recorded for individually identified impaired loans to reduce their carrying value to the expected recoverable amount. We review our loans on an ongoing basis to assess whether any loans should be classified as impaired and whether an allowance or write-off should be recorded (excluding credit card loans, which are classified as impaired and written off when principal or interest payments are 180 days past due, as discussed under Impaired Loans). 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, consumer instalment and other personal loans are individually insignificant and may be individually assessed or collectively assessed for losses at the time of impairment, taking into account historical loss experience.

Collective Allowance

We maintain a collective 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 collective allowance is based on the requirements of IAS 39, considering guidelines issued by OSFI.

The collective allowance methodology incorporates both quantitative and qualitative factors to determine an appropriate level for the collective allowance. For the purpose of calculating the collective allowance, we group loans on the basis of similarities in credit risk characteristics. The loss factors for groups of loans are determined based on a minimum of five years of historical data and a one-year loss emergence period, except for credit cards, where a seven-month loss emergence period is used. The loss factors are back-tested and calibrated on a regular basis to ensure that they continue to reflect our best estimate of losses that have been incurred but not yet identified, on an individual basis, within the pools of loans. Historical loss experience data is also reviewed in the determination of loss factors. Qualitative factors are based on current observable data, such as current macroeconomic and business conditions, portfolio-specific considerations and model risk factors.

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 inclusion in this annual report on Form 40-F of:

i) our independent auditors' report of registered public accounting firm dated December 4, 2018 on the consolidated balance sheets of Bank of Montreal (the "Bank") as at October 31, 2018 and October 31, 2017, the 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, 2018, and notes, comprising a summary of significant accounting policies and other explanatory information; and
ii) our report of independent registered public accounting firm dated December 4, 2018 on the effectiveness of the Bank's internal control over financial reporting as of October 31, 2018;

each of which is contained in this annual report on Form 40-F of the Bank for the fiscal year ended October 31, 2018. Our independent auditors report on the consolidated financial statements refers to a change to the Bank's method of accounting for financial instruments in 2018 due to the adoption of International Financial Reporting Standard 9 *Financial Instruments.*

We also consent to the incorporation by reference of such reports in the following Registration Statements of the Bank:

1. Registration Statement – Form F-3 – File No. 333-217200
2. Registration Statement – Form F-3 – File No. 333-214934
3. Registration Statement – Form S-8 – File No. 333-191591
4. Registration Statement – Form S-8 – File No. 333-180968
5. Registration Statement – Form S-8 – File No. 333-177579
6. Registration Statement – Form S-8 – File No. 333-177568
7. Registration Statement – Form S-8 – File No. 333-176479
8. Registration Statement – Form S-8 – File No. 333-175413
9. Registration Statement – Form S-8 – File No. 333-175412
10. Registration Statement – Form S-8 – File No. 333-113096
11. Registration Statement – Form S-8 – File No. 333-14260
12. Registration Statement – Form S-8 – File No. 33-92112
13. Registration Statement – Form S-8 – File No. 333-207739

KPMG LLP

Chartered Professional Accountants, Licensed Public Accountants

December 4, 2018
Toronto, Canada

KPMG LLP is a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. KPMG Canada provides services to KPMG LLP.

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 4, 2018

/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, Thomas E. Flynn, 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 4, 2018

/s/ Thomas E. Flynn
Thomas E. Flynn
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, 2018 (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 4, 2018

/s/ Darryl White
Darryl White
Chief Executive Officer

Date: December 4, 2018

/s/ Thomas E. Flynn
Thomas E. Flynn
Chief Financial Officer